

**NATIONAL RESOURCES AND RESERVES
REPORTING COMMITTEE OF TURKEY
(UMREK)**



**ULUSAL MADEN KAYNAK VE REZERV
RAPORLAMA KODU**

**THE NATIONAL PUBLIC REPORTING OF
EXPLORATION RESULTS, MINERAL
RESOURCES AND MINERAL RESERVES
CODE OF TURKEY
(THE UMREK CODE) 2018**

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FOREWORD

1. The National Public Reporting of Exploration Results, Mineral Resources and Mineral Reserves Code of Turkey (The UMREK Code) designates the minimum standards, recommendations, legal requirements and practice principles for reporting the Mineral Exploration Results, Mineral Resources and Mineral Reserves within the Republic of Turkey with the purpose of adequately informing investors and other stakeholders. National Resources and Reserves Reporting Committee (Turkish Abbreviation: UMREK) was founded by amendment of Article 14 to the Mining Law 3213 by passing of the Law 6745 on the date of 20.08.2016. The working principles and procedures of the Committee was regulated by the “By-Law of the National Resources and Reserves Reporting Committee” which became effective on the date of 26.07.2017. As specified in the By-Law, the Committee consists of members from the General Directorate of Mining Affairs (MIGEM), General Directorate of Mineral Research And Exploration (MTA), Banking Regulation and Supervision Agency of Turkey (BDDK), The Banks Association of Turkey (TBB), Capital Markets Board of Turkey (SPK), Istanbul Stock Exchange (BIST), The Union of Chambers and Commodity Exchanges of Turkey (TOBB) and representatives drawn from the Turkish minerals industry and related Non-Governmental Organizations. This document is the first version of the UMREK Code. The international organization having the purpose of developing and promulgating consistent reporting standards worldwide is CRIRSCO (Committee for Mineral Reserves International Reporting Standards), and this code conforms with the CRIRSCO (2013) Template and CRIRSCO standard definitions, which are consistent with the best reporting practices of the CRIRSCO member countries in the world and which are a guideline for other countries to establish their own codes.

INTRODUCTION

2. This Code can be applied for reporting the Exploration Results, Mineral Resources and Mineral Reserves for solid minerals with a potential economic value found in the earth’s crust. In this version of the UMREK Code, important definitions and terms are highlighted in **bold** text. Most parts of the Code are in normal typeface. Guidelines are placed after the respective articles with a border on the left side and are written in *italics*. The guidelines give directions on how to interpret definitions and accompanying text and should be interpreted as persuasive. The reporting shall be done in a manner conforming to the articles of the Code.

3. The consistency of the UMREK Code with the CRIRSCO International Template has been approved by CRIRSCO. In addition, this Code has been accepted by institutions such as Republic of Turkey Ministry of Finance, Capital Markets Board of Turkey (SPK), Banking Regulation and Supervision Agency of Turkey (BDDK), Banks Association of Turkey (TBB), Istanbul Stock Exchange (BIST) and The Union of Chambers and Commodity Exchanges of Turkey (TOBB). This Code is binding for all the members certificated by the

UMREK or the Professional Organizations Recognised by UMREK.

The documentation to be prepared in accordance with the UMREK Code, shall be prepared and signed off by a Competent Person. The documents prepared by the Competent Person constitute the basis of public reporting of Exploration Results, Mineral Resources or Mineral Reserves, and therefore the Competent Person's name shall appear in the report. Public reporting or the attached statement should bear the company of the Competent Person or the name of the employer; data contained in the report should follow a certain form and content, and the Competent Person should consent to this in the form and context in which it appears. To demonstrate compliance, the relevant articles of the Code (see Annex-2) should be referenced.

SCOPE

4. The Basis of the UMREK Code is constituted using the principles of transparency, materiality and competence.

- **The principle of transparency requires the readers of public reporting to be provided with sufficient information. Information needs to be clear, free from ambiguity, comprehensible to the reader or listener of the report; the information should not mislead the reader through deficiencies and negligence.**
- **The principle of materiality requires that public reporting contain all the relevant information. It is important for such information to be included in the report, as access to relevant information is necessary for the investors and specialist consultants for the purpose of making a reasoned and balanced judgement regarding the Exploration Results, Mineral Resources or Mineral Reserves being reported. In cases where the related information cannot be acquired or is not relevant, an explanation must be given in the report to describe why such information is not included.**
- **Competence refers to the person (the Competent Person) preparing the public reporting being an expert in their subject, being aware that they will bear responsibility, subject to the ethics code of a Recognised Professional Organisation to whom they belong, supported by their qualifications and experience.**

5. UMREK, with the purpose of maintaining the standards and controlling their use, has put Table 1 into force. With regards to the information in the relevant articles in this table, the Competent Person needs to explain the information in accordance with the principles of transparency and materiality. If there is no information about the related article, then they should also declare that there is no information provided and give the reason. Therefore, Table 1 provides a check list by referring to the criteria to be considered by the Competent Person in the preparation of public reporting and supporting documents.

Table 2, included in the UMREK Code, provides a qualitative description of the basis for and range of expected accuracies for capital and operating cost estimates relative to the three

study levels outlined in the UMREK Code Guide, namely Scoping Studies, Pre-Feasibility Studies, and Feasibility Studies. Scoping Studies are mining studies at a conceptual level, and may be used to identify options for project development and to define and support future work programs to enable conversion of Mineral Resources to Mineral Reserves, whereas the more comprehensive Pre-Feasibility and Feasibility Studies are used to support declaration of Mineral Reserves.

Companies may also prepare and submit reports to other institutions and organizations other than the Republic of Turkey Ministry of Finance, Capital Markets Board of Turkey (SPK), Banking Regulation and Supervision Agency of Turkey (BDDK), Banks Association of Turkey (TBB), Istanbul Stock Exchange (BIST) and The Union of Chambers and Commodity Exchanges of Turkey (TOBB). Therefore, if these reports are to be submitted to other institutions and organizations, an explanation should be added to the report. To avoid confusion and to the extent possible, Companies are encouraged to prepare reports that are in accordance with the UMREK Code.

6. Public Reports are the reports prepared for the purpose of informing investors or potential investors and their advisors 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.

Public Reports must be submitted as required to the National Resources and Reserves Reporting Committee of Turkey (UMREK), Capital Markets Board of Turkey (SPK), Banking Regulatory and Supervisory Board of Turkey (BDDK), Banks Association of Turkey (TBB), Istanbul Stock Exchange (BIST), Union of Chambers and Commodity Exchanges of Turkey (TOBB) and similar organizations or to other institutions required by the Code.

A Public Report should be supported adequately by text, figures, tables, sections, and maps to demonstrate competence by conveying material information in a transparent manner. Figures of any type should be legible and should contain appropriate explanatory information in the form of titles and/or captions, and legends.

The UMREK Code is also applied when the Company information is going to be made public within the scope of the presentation materials used in other online public notifications and briefings for shareholders, stockbrokers and investment analysts. The Code also applies to the following reports if they have been prepared for the purposes described in Article 6, including but not limited to: environmental statements, information memoranda, expert reports, and technical papers referring to Exploration Results, Mineral Resources or Mineral Reserves.

Companies publishing annual reports, or other summary annual reports must include all relevant information related to Exploration Results, Mineral Resources or Mineral Reserves in these reports. In cases where summary information is presented it needs to be clearly stated that it is a summary, and a reference needs to be made to the public reports consistent with the Code or the public reports on which the summary is based.

As companies may need to submit reports to more than one regulatory jurisdiction, some of the submitted reports may be non-compliant with the UMREK Code. Reports of such nature must contain a statement alerting the reader to this situation. Where Competent Persons must issue reports that are based on different standards or guidance, they are obliged to comply with the standards of the organization receiving the report.

The reference to 'documentation' in the Code is to documents supporting the public reporting or it is related to internal company documents prepared to be a basis for, or to support a Public Report.

It must be anticipated that there could be documents prepared by the Competent Persons for internal company reporting purposes that do not comply with the Code. In such cases, it is recommended that a prominent statement is included in the documentation. Such documents should not be used in Public Reports. Articles 9 and 10 stipulate that public reporting is supported by the documents prepared by the Competent Person and reflects the Exploration Results, Mineral Resource and/or Mineral Reserve estimates.

There may be doubts about the appropriate form of disclosure according to the Code and Table 1. In such cases, those availing of the Code and those compiling the reports and adopting the Code need to act in line with the principles of the Code. The underlying purpose is to provide the minimum standard for public reporting and to ensure that such reports contain all necessary relevant information according to the Code. The Competent Person should prepare reports consistent with the principles of the Code to the investors and their advisers in a form that permits them to reach a reasonable and balanced judgement including risks and opportunities regarding the Exploration Results, Mineral Resources or Mineral Reserves.

7. The Code can be used for the mineral groups specified in Mining Law, No. 3213: it can be applied to all solid minerals and includes metallic minerals, marble (natural stones), gems, industrial minerals, cement feed and construction raw materials, and coal. This Code is related to the public reporting related to Exploration Results, Mineral Resources and Mineral Reserves required by the Istanbul Stock Exchange (BİST), Banking Regulation and Supervision Agency of Turkey (BDDK) and Capital Markets Board of Turkey (SPK).

8. The UMREK Code is open to periodic reviews and re-assessment to ensure the improvement of the Code. Such revisions will be published at www.umrek.com.tr web site.

COMPETENCE AND RESPONSIBILITY

9. Public reporting related to Mineral Exploration Targets, Mineral Exploration Results, Mineral Resources or Mineral Reserves, is the responsibility of the Company operating through decisions made by its Board of Directors. The Company is responsible for appointing the Competent Person or Persons and establishing the Competent Person or Persons meet the requirements set forth in Article 11.

Every such report needs to fairly reflect the supporting documents and information prepared by the Competent Person.

A Company preparing a public report declares the qualifications, professional relation(s), related experiences of the Competent Person, discloses the name or names of Competent Persons and indicates whether the Competent Person is a full-time employee of the company, and if not, indicates the name of the Competent Person's employer.

In the case where the Competent Person or Competent Person's immediate family hold shares, bonds or right of purchase and franchise documents issued by the company and where there is a direct or indirect relationship between the company and the Competent Person, this relationship must be disclosed. Such a statement must be included in the section where the Competent Person provides his written consent (see Annex 2).

A possible conflict of interest between the Competent Person or the relevant party needs to be disclosed as per the transparency principle.

Any other type of relationship established between the Competent Person and the company issuing the report must also be expressed within the public report. The report must be issued along with the written pre-approval of the Competent Person in accordance with the form and context in which information appears.

In the case where supporting documentation is contained in public reporting, a written consent of the relevant Competent Person must be provided in relation to the form and context of that documentation within the Public Report.

In cases where upon the written consent of the Competent Person, the previously published information is required to be re-published by the company, such documents must indicate the name of the original report, name of the Competent Person responsible of this report and the reference and date of the position of the primary source for public access. Under such conditions, written consent of the company's Competent Person is not required. These cases are as follows:

- The company confirms in the subsequent public presentation that it is not aware of any new information or data that materially affects the information included in the relevant market announcement. In the case of estimates of Mineral Resources or Mineral Reserves, the company confirms that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed.
- The company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified. Note that for the subsequent public presentation it is the responsibility of the company acting through its Board of Directors to ensure the form and context has not been materially altered.

This relaxation of the requirement to obtain the Competent Person's prior written consent does not apply to the requirements for annual reporting of Mineral Resources and Mineral Reserves contained in Article 15.

All such public disclosures should be specifically reviewed by the company to ensure that the content introducing the findings of the Competent Person has not been materially modified, and it must be ensured that it is valid within the framework of all types of information recently acquired in relation to Mineral Exploration Results, Mineral Resources or Mineral Reserves.

The forms for the compliance statements are given in Annex 3.

With the purpose of assisting the Competent Persons and companies to conform to these requirements, a Competent Person's consent form containing the requirements of the Code has been given in Annex 2.

The Company and Competent Person must maintain availability of all types of other evidences regarding the Competent Person's consent form or written consent. The purpose here is to ensure that written consent can be acquired quickly if required. However, the Competent Person must be provided time to check the Public Report to make sure that it meets the objectives of Articles 4, 5, and 6.

10. The documents detailing the Exploration Results, Mineral Resource and Mineral Reserve estimates on which a public report related to Mineral Exploration Results, Mineral Resources and Mineral Reserves is based, must be prepared by, or under the direction of, and signed by the Competent Person.

11. A Competent Person is a minerals industry Professional registered to an appropriate member grade of a RPO (see Annex 4) that has been certified by UMREK with a Certificate of Competence among the proposals recommended by the RPO's.

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

If the Competent Person is preparing documentation on Exploration Results, the relevant experience must be in exploration. If the Competent Person is estimating, or supervising the estimation of Mineral Resources, the relevant experience must be in the estimation, assessment and evaluation of Mineral Resources. If the Competent Person is estimating, or supervising the estimation of Mineral Reserves, the relevant experience must be in the estimation, assessment, evaluation and economic extraction of Mineral Reserves.

The professional experience of the Competent Person in the related field must be up-to-date.

The Competent Person is generally expected to be a geoscientist (geologist or geophysicist) to be able to estimate and report Exploration Results or Mineral Resources, but for reporting Mineral Reserves, the Competent Person may be qualified in other fields such as mining and chemical engineering, mineral processing, environmental assessments or material sciences as appropriate.

The Competent Person may have relevant qualifications or experience in more than one field or type of work. The key qualifier in the definition of a Competent Person is the word 'relevant'. For example, in estimating Mineral Resources for vein gold mineralisation, experience in a high-nugget, vein-type mineralisation such as tin, uranium etc. will probably be relevant, whereas experience in (say) massive base metal deposits may not be. As a second example, to qualify as a Competent Person in the estimation of Mineral Reserves for alluvial gold deposits, considerable (probably at least seven years) experience in the evaluation and economic extraction of this type of mineralisation would be needed. This is due to the characteristics of gold in alluvial systems, the particle sizing of the host sediment, and the low grades involved. Experience with placer deposits containing minerals other than gold may not necessarily provide appropriate relevant experience.

The key word 'relevant' also means that it is not always necessary for a person to have seven years' experience in each and every type of deposit in order to act as a Competent Person if that person has relevant experience in other deposit types. For example, a person with (say) 20 years' experience in estimating Mineral Resources for a variety of metalliferous hard-rock deposit types may not require as much as seven years specific experience in (say) porphyry-copper deposits in order to act as a Competent Person. Relevant experience in the other deposit types could count towards the experience in relation to porphyry-copper deposits.

In addition to experience in the style of mineralisation, a Competent Person taking responsibility for the compilation of Exploration Results or Mineral Resource estimates should have sufficient experience in the sampling and analytical techniques relevant to the deposit under consideration to be aware of problems which could affect the reliability of data. Appropriate appreciation of extraction and processing techniques applicable to that deposit type may also be important.

Persons being called upon to act as Competent Persons should be clearly satisfied in their own minds that they could face their peers and demonstrate competence in the commodity, type of deposit and situation under consideration. If doubt exists, the person should either seek opinions from appropriately experienced colleagues or should decline to act as a Competent Person.

Mineral Resources estimation may be a teamwork (for instance a person or a team may gather data, and another person or team may prepare the Mineral Resource estimate). Estimation of the mineral reserve is a teamwork often consisting of several professional disciplines. In cases where the responsibilities within teamwork are openly shared, it is necessary that the number of Competent Persons and the contribution by each Competent Person is specified, and each Competent Person accepts responsibility for his own contribution. In cases where the Mineral Resource and Mineral Reserve report is signed by only one Competent Person, the signing Competent Person is responsible for the whole report under this Code. It is important in this situation that the Competent Person accepting overall responsibility for a Mineral Resource or Mineral Reserve estimate and supporting documentation prepared in whole or in part by others, is satisfied that the work of the other contributors is acceptable.

Complaints placed against the professional work of the Competent Person will be dealt with under the scope of the disciplinary procedures of the person's Recognised Professional Organizations (see Annex 4) and UMREK Regulations.

In case an Istanbul Stock Exchange (BİST) registered company, receiving financing from banks in Turkey, and having foreign interests and reports on foreign Exploration Results, Mineral Resource estimates or Mineral Reserve estimations prepared for a foreign project by a person not meeting the requirements set forth in Article 11, this company must commission a Competent Person or Persons that are members of a Recognised Professional Organization to undertake the responsibility of Exploration Results, Mineral Resource estimates or Mineral Reserve estimates. The Competent Person or Persons undertaking this responsibility need to be aware of their full responsibility regarding the report and supporting documents submitted in line with the Istanbul Stock Exchange (BİST) and Banking Credit Legislation rules, and they should not regard this action merely as a 'rubber-stamping' exercise.

A site visit to or inspection of the mineral property being evaluated should be undertaken by the Competent Person(s) and appropriate member(s) of the team. In cases where a site visit does not occur, the reasons and its insignificance must be specified. In cases where reporting takes place without a site visit, a declaration indicating that reporting has been approved by the Competent Person and that information is reliable, must be included within the report.

REPORTING TERMINOLOGY

12. In public reporting related to Exploration Results, Mineral Resources and Mineral Reserves only the terms specified in Figure 1 must be used.

Figure 1 constitutes a general framework to categorise the different levels of geological confidence, and technical and economic evaluation of tonnage and grade or quality estimates. Mineral Resources can be estimated on the basis of geological knowledge along with some inputs taken from other related disciplines. Mineral Reserves (indicated with dashed lines in Figure 1) are a subset of Indicated and Measured Mineral Resources and can be estimated by taking into account the factors affecting mineral extraction (Modifying Factors) and inputs taken from a series of different disciplines.

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.

Measured Mineral Resources can be converted into either 'Proved Mineral Reserves' or into 'Probable Mineral Reserves'. In case there are uncertainties about all or some of the Modifying Factors taken into account when converting from Mineral Resource to Mineral Reserve, then the Competent Person can convert from a Measured Mineral Resource to a Probable Mineral Reserve. This relationship has been indicated with the

dotted arrow in Figure 1. Even though the trend of the broken arrow includes a vertical component, this does not mean a reduction in the level of geological knowledge or confidence. In such a case, these Modifying Factors should be fully explained.

It is possible to convert the previously reported Mineral Reserves back into Mineral Resources due to new information affecting the Modifying Factors. This bidirectional relation has been indicated in Figure 1 with two-headed arrows. The changes in the Modifying Factors that lead to such a conversion need to be fully explained.

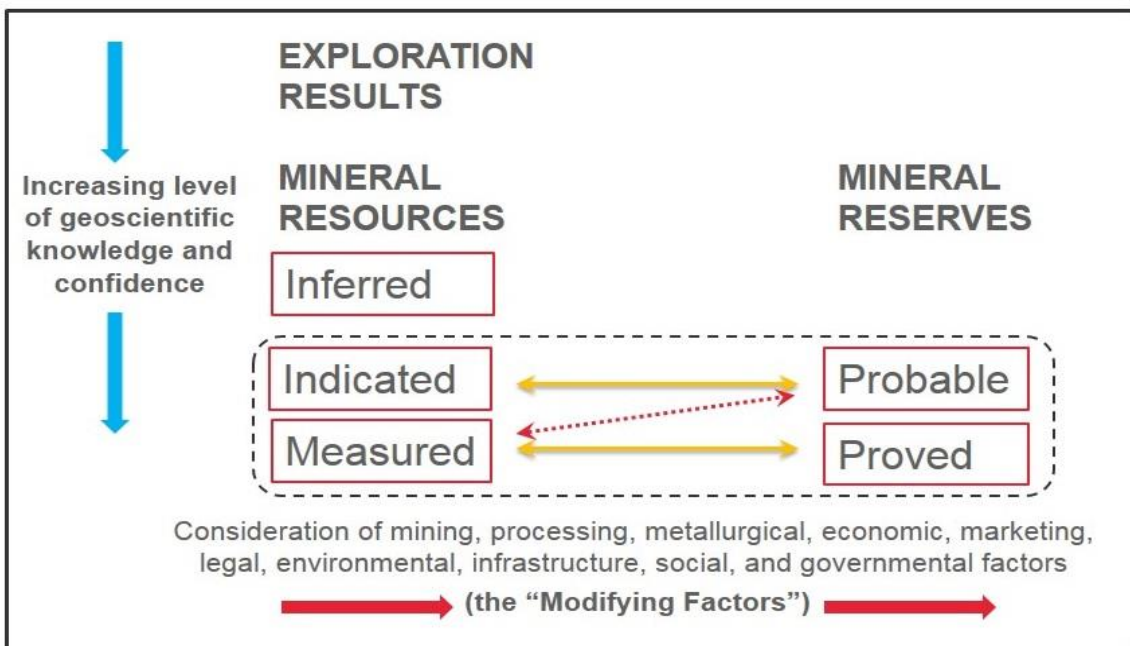


Figure 1. General Relationships between Exploration Results, Mineral Resources and Mineral Reserves

GENERAL REPORTING

13. A Public Report related to Mineral Exploration Results, Mineral Resources or Mineral Reserves must include an explanation regarding the style and characteristics of the mineralization.

14. The Public Report must disclose all the necessary information that may have a material effect on the economic value related to Exploration Results, Mineral Resources or Mineral Reserves. The company must promptly report any material changes on Mineral Resources or Mineral Reserves.

15. Companies, at least once a year, must review the Mineral Resources or Mineral Reserves they own or control and publish a related public report. The effective date and the publication date indicating the latest status of the Mineral Resources and/or Mineral Reserves

must be indicated in the public reporting. When publishing the updated Mineral Resources and Mineral Reserves, companies must specify all the material changes made to the previously reported Mineral Resources and Mineral Reserves.

16. Where necessary, the term ‘quality’ can be used instead of ‘grade’, and the term ‘volume’ can be used instead of ‘tonnage’ throughout the Code.

17. It is a common practice for a company to interpret and discuss the size and type of Exploration Targets. Any comment within a public report must comply with the following requirements:

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 a Mineral Resource.

Any such information related to mineral Exploration Target must be correctly expressed so that Mineral Resource or Mineral Reserve is not misrepresented. The terms ‘Resource’ and ‘Reserve’ must not be used in this context. In any statement referring to potential quantity and grade (or quality) of the target, these values must be given as ranges and must contain the following explanations:

- A detailed explanation of the work included in the report, including the exploration activity stage already completed,
- As potential size and grade (or quality) are going to be expressed at a conceptual level, the Public Report must include a proximate clarification statement to indicate insufficient exploration has been done to enable estimation of a Mineral Resource and that possible future exploration programs are not certain to result in a Mineral Resource.

Considering the uncertainty of the supporting data, the tonnage (volume) or grade (quality) of the Exploration Target should not be reported as a ‘headline statement’ in public reporting.

In case a public report includes an Exploration Target, the proposed exploration activities designed to test the validity of the Exploration Target must be detailed, and the time required to complete these activities must be specified.

If an Exploration Target is shown pictorially (for instance, as cross sections or maps) or graphically, it must also include explanations meeting the above requirements.

A public report containing an Exploration Target must be prepared and/or approved by

a Competent Person taking responsibility for the report's content.

In all the statements related to an Exploration Target, it must be specified whether the target is based on actual exploration results or on proposed exploration programmes. When the Exploration Target reported includes information related to tonnage (volume) and grade (quality) ranges, these must be given as approximations.

Explanatory text must include an explanation of the basis used to define the grade (quality) and tonnage (volume) ranges used to describe the Exploration Target.

For an Exploration Target based on Exploration Results, the summary and results of existing exploration data must also be specified, including explanations for current drill holes, sampling spacing and related maps or sections.

In any report including the Exploration Target and/or a report subsequently updated or modified, the Competent Person must discuss any material changes arising from the completed exploration activity.

REPORTING OF THE EXPLORATION RESULTS

18. 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.

During the early stages of exploration, it is not possible to make reasonable tonnage (volume) and grade (quality) estimates with existing data. Exploration Results should include both positive and negative information and data regarding the properties of the explored mineral.

In case the company is reporting a mineralization not classified as a Mineral Resource or Mineral Reserve, it should only be reported according to the conditions explained in Article 17 and must exactly meet the requirements set forth in that article.

Examples of Exploration Results include results of outcrop sampling, assays of drill hole intersections, geochemical results and geophysical survey results. Reporting of Exploration Results must be approved by the Competent Person.

19. Public reporting related to mineral exploration results must contain sufficient information to allow reaching a considered and balanced judgement about the significance of these results. Reports should include data such as the conditions and environment of mineral exploration, sampling type and method, sampling spacing and methods, sample locations, dimensions, distributions and relative locations of data belonging to all relevant chemical analysis results, data collection methods, land usage conditions and information related to other criteria set forth in Table 1.

Mineral Exploration results should not be presented without any scientific basis, nor implying the discovery of a potential economic mineralization. If the true widths of mineralization are not included in the report, then an appropriate description must be included in the public reporting.

Where assay and analytical results are reported, the most appropriate method should be selected and used by the Competent Person from the following methods:

- Listing all the results in accordance with sample intervals (size of sample, in the case of bulk sampling), or
- Indicating the average grade of mineralised zones (method of grade calculation must be clearly specified).

Explanatory diagrams and maps, prepared to represent the geological mineral deposit, must be included in the report. The report should also include, but not to be limited to these, plans and maps indicating the locations of drill holes and appropriate plan and sectional views.

Reporting of selected information such as isolated assays, isolated drill holes, assays of panned concentrates or supergene enriched soils or surface samples, without placing them in perspective is unacceptable. Even though it is not necessary to report all the assays or drill holes, it is compulsory to provide the information related to the omitted data so that the reader of the report can make a judgement.

In cases where the mineral exploration result-reports do not include all the drill holes or the intersections of drill holes, the Competent Person must provide an explanation about why these were not considered to be important or why they have not been provided.

According to Articles 4 and 5, the Competent Person should not remain silent about any issue that could affect the public perception or value of the mineral occurrence. For significant projects, all criteria in Sections 2 and 3 of Table 1 must be reported on an 'if not, why not' basis.

In cases where inadequate or uncertain data affect the reliability of the Exploration Results reporting, additional explanation is to be made and included in the report. Examples include poor sample recovery, poor repeatability of assay or laboratory results etc.

REPORTING OF MINERAL RESOURCES

20. 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.

Mineral Resources are sub-divided, in order of increasing geological confidence, into Inferred, Indicated and Measured categories.

Mineral Resource reports, regardless of the classification of the resource, must meet the requirement of reasonable prospects for eventual economic extraction.

Portions of a deposit that do not have reasonable prospects for eventual economic extraction should not be included in a Mineral Resource. A Competent Person using the criteria listed in Table 1 of the public report with regards to estimation of Mineral Resources, must clearly explain and discuss these criteria. These explanations should also include the discussion of the technical and economic viability (Modifying Factors) for the applied cut-off assumptions.

Geological evidences and knowledge required for the estimation of the Mineral Resources must include sampling data supporting Inferred, Indicated and Measured Mineral Resource classifications. Sampling data must be present at suitable intervals indicating the geological, chemical, physical and mineralogical characteristics of the mineralization. A Mineral Resource can only be estimated when sampling data are available.

The term 'Mineral Resource' covers mineralisation, including dumps and tailings, which has been identified and estimated through exploration and sampling and within which Mineral Reserves may be defined by the consideration and application of the Modifying Factors.

The term 'reasonable prospects for eventual economic extraction' implies an assessment (albeit preliminary) by the Competent Person in respect of all matters likely to influence the prospect of economic extraction including the approximate mining parameters. In other words, a Mineral Resource is not an inventory of all mineralisation drilled or sampled, regardless of cut-off grade, likely mining dimensions, location, or continuity. It is a realistic inventory of mineralization which, under assumed and justifiable technical, economic and development conditions, might, in whole or in part, become economically extractable.

Where considered appropriate by the Competent Person, Mineral Resource estimates may include material below the selected cut-off grade to ensure that the Mineral Resources comprise bodies of mineralisation of adequate size and continuity to properly consider the most appropriate approach to mining. Documentation of Mineral Resource estimates should clearly identify any diluting material included, and Public Reports should include commentary on the matter if considered material.

The interpretation of the word 'eventual' may change in accordance with the included commodity or mineral. For instance, 'eventual economic extraction' must be considered

for some coal, iron ore, bauxite and other minerals or commodity for periods of time exceeding 50 years. However, application of the concept for many gold deposits would normally be restricted to perhaps with 10 or 15 years and mostly with shorter time frames. The time frame considered by the Competent Person for all cases must be disclosed and discussed.

Any adjustment made to the data for the purpose of making the Mineral Resource estimate, for example by cutting or factoring grades should be clearly stated and described in the Public Report.

Certain reports (e.g. inventory reports, exploration reports to government and other similar reports not intended primarily for providing information for investment purposes) may require full disclosure of all mineralisation, including material that which does not have reasonable prospects for eventual economic extraction. Such non-economic mineralization estimates would not qualify as Mineral Resources or Mineral Reserves in terms of the UMREK Code.

21. 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.

When the reported Mineral Resource is mostly Inferred Mineral Resource, sufficient supporting information must be provided to ensure that the reader can assess the risks and opportunities related to the reported Mineral Resource.

In circumstances where the estimation of the Inferred Mineral Resource is presented on the basis of extrapolation beyond the nominal sampling spacing and taking into account the style of mineralisation, the report must contain sufficient information to inform the reader of:

- Maximum distance where the resource is extrapolated beyond the sample points,
- Proportion of the resource estimated based on extrapolation,
- Reasons for extrapolating the resource to these limits,
- Schematic display of Inferred Mineral Resource clearly indicating the extrapolated section of the estimated resource.

The Inferred Mineral Resource category refers to an identified mineral concentration or formation where sampling has been completed with limited measurements, but data are not sufficient to reliably support the geological and grade continuity. Even though it is expected that the majority of Inferred Mineral Resources can be converted to Indicated Mineral Resources depending on ongoing exploration activities, because of the uncertainty of the Inferred Mineral Resources, it should not be assumed that such a conversion will always take place.

The level of confidence in Inferred Mineral Resource estimates is not sufficient enough to allow application of technical and economic parameters results that can be used for detailed planning in Pre-Feasibility (Article 41) or Feasibility (Article 42) studies. Therefore, no direct connection can be found from Inferred Mineral Resource to Mineral Reserves category (see Figure 1).

Caution should be exercised if Inferred Mineral Resources are used to support technical and economic studies such as Scoping Studies (refer to Article 40).

At the discretion of the Competent Person, the Company may include the Inferred Mineral Resource in whole or partially in intracompany planning, scoping or strategic studies. This must be clearly specified in a report related to Inferred Mineral Resources. Under such conditions, a statement should be made that the results are not at a confidence level to ensure all Inferred Mineral Resources would eventually be converted into Indicated Mineral Resources or Mineral Reserves. Inferred Mineral Resources cannot be directly converted into Mineral Reserves and should not be specified as part of the Mineral Reserve.

22. 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.

When a deposit or part of a deposit has been explored in sufficient detail to allow the Competent Person estimating the Mineral Resource, to confidently interpret the geological framework and to assume geological and grade continuity of mineralization through the nature, type, quantity and distribution of data, it can be categorised as Indicated Mineral Resource. The confidence level in the estimate is sufficient to apply technical and economic parameters, to allow preparation of mine plans, grade and tonnage estimates and to schedule an economic life-of-mine plan. The Competent

Person needs to be aware of the significance of the Indicated Mineral Resource as the Pre-Feasibility or Feasibility Studies progress (see Articles 41 and 42).

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

Mineral Resources may be classified as a Measured Mineral Resource when the nature, quality, amount and distribution of data are such as to leave no reasonable doubt, in the opinion of the Competent Person determining the Mineral Resource, that the tonnage and grade of the mineralisation can be estimated to within close limits, and that any variation from the estimate would be unlikely to significantly affect potential economic viability.

This category requires a high level of confidence in, and understanding of, the geological properties and controls of the mineral deposit. The confidence level in the estimate is sufficient for the Modifying Factors to be applied within a technical and economic study, as defined in Articles 40 to 42.

Depending on the confidence level of various Modifying Factors, a Measured Mineral Resource can be converted into 'Proved Mineral Reserve' (high confidence level in Modifying Factors), 'Probable Mineral' Reserve (some uncertainty in Modifying Factors), or it cannot be converted at all, as evidenced by Modifying Factors having an undefined confidence level in some parts or having no confidence at all (for instance pillars in underground mining or having no plan to be mined, as is the case of occurrence outside the limits of an economic operation).

24. Selecting the appropriate Mineral Resource category is dependent on the quantity, distribution and quality of existing data, and the confidence level given to those data. The Mineral Resource category must be determined by the Competent Person.

Mineral Resource classification is a matter for skilled judgement, and a Competent Person should take into account those items in Table 1 that relate to confidence in Mineral Resource estimation.

In deciding between Measured Mineral Resources and Indicated Mineral Resources, Competent Persons may find it useful to consider, in addition to the phrases in the two

definitions relating to geological and grade continuity in Articles 22 and 23, the phrase in the guideline to the definition for Measured Mineral Resources: ‘... any variation from the estimate would be unlikely to significantly affect potential economic viability’.

In deciding between Indicated Mineral Resources and Inferred Mineral Resources, Competent Persons may wish to take into account, in addition to the phrases in the two definitions in Articles 21 and 22 relating to geological and grade continuity, that part of the definition for Indicated Mineral Resources: ‘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’, which contrasts with the guideline to the definition for Inferred Mineral Resources: ‘Confidence in the estimate of Inferred Mineral Resources is not sufficient to allow the results of the application of technical and economic parameters to be used for detailed planning in Pre-Feasibility (Article 41) or Feasibility (Article 42) Studies’ and ‘Caution should be exercised if Inferred Mineral Resources are used to support technical and economic studies such as Scoping Studies (refer to Article 40)’.

When assessing the geological and grade continuity for the purposes of classifying the resource, the Competent Person should take into account the issues of mineralization type and cut-off grade. Cut-off grades chosen for Mineral Resource estimation should be realistic in relation to the style of mineralisation and the anticipated mining and processing development options.

25. Mineral Resource estimates are not precise calculations, being dependent on the interpretation of existing sampling results and limited information on the location, shape and continuity of the Mineral Resource. Reporting of tonnage and grade estimates should reflect the relative uncertainty of the estimate through proper rounding into digits. In the case of Inferred Mineral Resources, they must be described with terms such as ‘approximate’, and the eventual outcome must always be stated as an estimate, rather than a calculation, to emphasise the uncertain nature of Mineral Resources.

In most cases, rounding the estimates to the second significant figure is sufficient. For instance: A value of 10.863.000 tons at 8,23% should be indicated as 11 million tons at 8,2%. There will be occasions, however, where rounding to the first significant figure may be necessary in order to convey properly the uncertainties in estimation. This would usually be the case with Inferred Mineral Resources.

Competent Persons are encouraged, where appropriate, to discuss the relative accuracy and confidence level of the Mineral Resource estimates with consideration of at least sampling, analytical and estimation errors. The Competent Person’s statement of confidence must consider whether the estimates are related to the whole or part of the resource, and if they are related to a part of the resource, it must specify the appropriate tonnage. Where it is not possible to state a relative certainty and level of confidence, a comprehensive discussion of the uncertainties must be provided by taking Table 1 into

account.

26. Public Reports of Mineral Resources must indicate at least one or more of the ‘Inferred’, ‘Indicated’ and ‘Measured’ categories. Categories must not be reported in a combined form unless details for the individual categories are also provided. Mineral Resources must not be reported in terms of contained metal or mineral content unless corresponding tonnages and grades are also presented.

Mineral Resources must not be aggregated with Mineral Reserves.

Public Reporting of tonnages and grades outside the categories covered by the Code is not permitted unless the situation is covered by Article 17, and then only in strict accordance with the requirements of that Article.

Estimates of tonnage and grade outside of the categories covered by the Code may be useful for a company in its internal calculations and evaluation processes, but their inclusion in Public Reports is not permitted.

Mineral Resource estimates are sometimes reported after adjustment from reconciliation with production data. The nature of such adjustments must be clearly specified in the Public Reporting of the Mineral Resources.

27. In a Public Report of a Mineral Resource for a significant project for the first time, or when those estimates have materially changed from when they were last reported, a brief summary of the information in relevant sections of Table 1 must be provided or, if a particular criterion is not relevant or material, a disclosure that it is not relevant or material, and a brief explanation of why this is the case must be provided.

For a significant project, when Mineral Resource estimates are first Publicly Reported or when a material change occurs (including classification changes), there is an increased need for transparent discussion of the basis for the new Mineral Resource estimate in order that investors are appropriately informed of the basis for the changes. As noted in Articles 4 and 5, the benchmark of Materiality is that information which an investor or their advisers would reasonably expect to see explicit comment on by the Competent Person; thus the reporting of all relevant criteria in Table 1 on an ‘if not, why not’ basis is required.

Where there are as yet unresolved issues potentially impacting the reliability of, or confidence in, a statement of Mineral Resources (for example, poor sample recovery, poor repeatability of assay or laboratory results, limited information on bulk densities, etc.) those unresolved issues should also be reported.

If there is doubt about what should be reported, it is better to err on the side of providing too much information rather than too little.

28. The words ‘ore’ and ‘reserves’ must not be used in describing Mineral Resource estimates as the terms imply technical feasibility and economic viability and are only appropriate when all relevant Modifying Factors have been considered. Reports and statements should continue to refer to the appropriate category or categories of Mineral Resources until

technical feasibility and economic viability have been established. In case re-evaluation indicates that Mineral Reserves are not economically feasible, Mineral Reserves must be re-classified as Mineral Resources.

It is not intended that re-classification from Mineral Reserves to Mineral Resources or vice versa should be applied where the effect of the outcomes of changes is expected to be of a short-term or temporary nature, or as a result of the company reaching an intentional decision to operate on a non-economic basis. Examples of such situations are commodity price fluctuations expected to be short-term, mine emergency of a non-permanent nature, strike etc.

REPORTING OF THE MINERAL RESERVES

29. 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.

Mineral Reserves are sub-divided in order of increasing confidence into Probable Mineral Reserves and Proved Mineral Reserves.

Whilst reporting Mineral Reserves, information related to estimated mineral processing recovery factors is highly important and should be always included in Public Reports.

Mineral Reserves are those portions of Mineral Resources that, after the application of all Modifying Factors, result in an estimated tonnage and grade which, in the opinion of the Competent Person making the estimates, can be the basis of a technically and economically viable project, after taking account of material relevant Modifying Factors. Deriving a Mineral Reserve without a mine design or mine plan through a process of factoring of the Mineral Resource is unacceptable.

Mineral Reserves are usually reported in a manner that also includes economic material and diluting material that have been delivered for treatment or dispatched from the mine without any treatment (raw).

The assessment techniques (including block sizes, where applicable) and the main assumptions made when preparing the estimate must be disclosed.

The term 'economically mineable'; implies that extraction of the Mineral Reserve is possible in line with the technical, economic and other related assumptions to be specified. Such assumptions will vary by deposit type, level of the work conducted and financial criteria of the Company. For this reason, there can be no fixed definition for the term 'economically mineable'. However, the efforts by the companies and the investors involved in the project to gain acceptable returns on the invested capital aims to make these resources competitive with the comparable alternative investment risks.

In order to achieve the required level of confidence in the Mineral Resources and all of the Modifying Factors, it is expected that studies to at least a Pre-Feasibility level will have been carried out prior to determination of the Mineral Reserves. The study will have determined a mine plan and production schedule that is technically achievable, environmentally acceptable and economically viable and from which the Mineral Reserves can be derived.

The term 'Mineral Reserves' does not need to state that mineral extraction facilities have been erected or are in operation or all necessary approvals or sale contracts have been acquired. Statements of Mineral Reserve imply that there are reasonable expectations for these plants to be established, to be profitably operated and that approval and/or agreements are to be acquired within the anticipated time frame required by the mine plans. In certain cases, it is impossible to reach these 'reasonable expectations' before actually receiving the approval or signing the agreement. In all cases, Competent Person needs to assess the consequences of all uncertain issues related to mineral extraction.

If zones of radically different characteristics in terms of mineral processing treatment or recoveries are present, then these should be reported individually as well as jointly.

Mineral Reserve estimates can sometimes be reported at high level or breakeven grades or following the application of factors such as mine or mill processes reflecting the historical experience related to the differences between Mineral Resources depleted and production. In case any data used within the Mineral Reserve estimate are amended or changed in scope to make the estimate, this must be clearly indicated in the Public Report, and the nature of the change or amendment must be explained.

When companies prefer to use the term 'Ore Reserve' in their own Public Reporting, they must clearly specify that it is being used with the same meaning as the 'Mineral Reserve' defined in this Code.

The Code implies that a Company could produce the Mineral Reserves, but the Code does not imply that a production decision has been made.

Wherever possible, the Competent Person must disclose the commodity prices and exchange rates used for Mineral Reserve estimation. If commodity prices are not given,

the reasons must be given; for instance, disclosure of a certain price may be anticompetitive. In such cases, wherever suitable, a reference must be made to 'existing or estimated prices' or 'prices known to be applied at site'.

Commodity prices need to be on the basis of supportable, prospective, short- or long-term estimates, whichever applies. Extremely optimistic or pessimistic price predictions can lead to serious over or under estimations of Mineral Reserves.

In places where commodities are being sold using the prices listed in the existing contracts, Mineral Reserves must be determined by using these contract prices.

When commodity prices are disclosed, such disclosure could be an equal, single-price prediction used for reserve determination or it can also be a price range which will not cause any material change in reserves.

Whether the commodity prices used for reserve prediction are published or not, the method used to determine these prices must be disclosed. Such a disclosure should be in a form that helps investors or other stakeholders to decide whether these prices reflect their reasonable opinions about future prices.

Documents supporting price predictions may include comparisons between past and current prices, future projections, market opinions, exchange rates and other relevant information.

In case there is a doubt about which issues are to be reported, it is more beneficial to err on the side providing too much information rather than too little.

30. 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.

It is important to take into account the level of confidence of the Modifying Factors when Mineral Resources are being converted into Mineral Reserves.

A Probable Mineral Reserve has a lower confidence level than a Proved Mineral Reserve; however, it can have sufficient quality to serve as a basis of a decision to be taken to conduct mining operations.

31. 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.

A Proved Mineral Reserve represents the highest confidence category of reserve estimate and implies a high degree of confidence in geological and grade continuity,

and the consideration of the Modifying Factors. Mineralization type or other factors could mean that Proved Mineral Reserves may not be practically estimated in some mineral deposits.

A Proved Mineral Reserve represents the highest confidence category that is both technically and economically reachable for a company. As noted in the principles found in Article 29, there are several factors which can imply that Proved Mineral Reserves are not achievable at some deposits. During the economic lifespan of a project, the Competent Person must be cautious in declaring Proved Mineral Reserves at early stages. Subsequently acquired data may indicate that this decision was too optimistic, and the reserves may need to be downgraded or removed. In general, it is a better practise to report early estimates as Probable Reserves or to postpone reporting, rather than withdrawing the statements in the future.

32. Determining the appropriate category of the Mineral Reserve must be done by the Competent Person, by considering the uncertainties in assessing the Modifying Factors (mining, processing, metallurgical, economic, marketing, legal, environmental, infrastructure, social and governmental factors etc.) and the relevant confidence level of the mineral resource.

Application of the category of Proved Mineral Reserve implies the highest degree of geological, technical and economic confidence in the estimate at the level of production increments used to support mine planning and production scheduling, with consequent expectations in the minds of the readers of the report. Therefore, when a mineral resource is categorised as a 'Measured Mineral Resource', these expectations must be taken into account.

33. As a Mineral Reserve is dependent on the interpretation of existing sampling results and limited information on the location, shape and continuity of the formation, they are not precise calculations.

Reporting of tonnage and grade estimates should reflect the relative uncertainty of the estimate through proper rounding and using terms such as 'approximate'.

Competent Persons should discuss the certainty and reliability of their reserve estimates. The statement should specify whether the certainty and reliability of the estimate is related to all the reserve (whole reserve) or part of the reserve (a sub-set of the reserve, where certainty or reliability could be different when compared to the whole reserve), and if it is related to part of the reserve, then it should specify tonnage or volume. Where statement of relative certainty and/or reliability is not possible, a qualitative discussion of the uncertainties for assessment criteria specified in Table 1 must be made and explained.

34. Public Reports of Mineral Reserves must specify one or other or both of the categories of 'Proved' and 'Probable'. Reports must not contain combined Proved and Probable Mineral Reserve figures unless the relevant figures for each of the categories are also provided. Reports must not present metal or mineral content figures unless corresponding tonnage and grade figures are also given.

Public Reporting of tonnage and grade outside the categories covered by the Code is not permitted unless the situation is covered by Article 17, and then only in strict accordance with the requirements of that Article.

35. In a public report containing a Mineral Reserve estimate related to a significant project being conducted for the first time or when such estimates have been significantly changed in the final reporting, a brief summary of the relevant information contained in Table 1 should be presented. If information is not relevant, this must be clarified, and a brief explanation about its irrelevance must be presented.

When Mineral Reserve estimates are being publicly reported for the first time or if there is a material change in the project (including classification changes), there is a need to discuss and explain the basis of the changes, pursuant to the principle of transparency, so that the investors can be informed about the reason(s) behind the changes. As also specified in Articles 4 and 5, the principle of materiality specifies that an investor or a consultant/adviser expects the Competent Person to provide a clear opinion. Therefore, all criteria in Table 1 must be considered and interpreted on 'if not available, why not' basis.

In this article, the Code is specifying the reporting to be prepared against the relevant section of Table 1. This can also be completed by presenting a report related to Section 4 on Mineral Reserves, on the assumption that issues related to Section 2, 3 and 4 (on Mineral Resources) will already have been included in a still current Public Report, and this Report can be referenced. If this is not the case then these sections are also relevant and should be included in the Public Report.

The technical summary based on Table 1 criteria must be presented as an attachment to the Public Report.

If there are unresolved issues (limited geotechnical information, complicated ore metallurgy, permitting issues etc.) that may affect reliability in Mineral Reserve statements, unresolved issues must also be reported.

In case there is a doubt about what to report, providing more information should be preferred rather than providing too little.

Any uncertainty related to any criteria listed in Table 1 that could affect the reliability of the Mineral Reserve must be reported.

Mineral Reserve estimates are sometimes being reported after comparison with production data and making reconciliations. These reconciliations and the nature of the changes must also be clearly specified in the public reports belonging to the Mineral Reserve.

36. The choice of the appropriate category of Mineral Reserve is determined primarily by the classification of the corresponding Mineral Resource and after considering any uncertainties in the Modifying Factors. Allocation to the appropriate category must be made by the Competent Person.

The Code provides for a direct relationship between Indicated Mineral Resources and Probable Mineral Reserves and between Measured Mineral Resources and Proved Mineral Reserves. In other words, the level of geoscientific confidence for Probable Mineral Reserves is at least as high as that required for the determination of Indicated Mineral Resources, and the level of geoscientific confidence for Proved Reserves is the same as that required for the determination of Measured Mineral Resources.

The Code provides for a two-way relationship between Measured Mineral Resources and Probable Mineral Reserves. This is to cover the situation where uncertainties associated with any of the Modifying Factors considered when converting Mineral Resources to Mineral Reserves may result in there being a lower degree of confidence in the Mineral Reserves than in the corresponding Mineral Resources. Such a conversion would not imply a reduction in the level of geoscientific knowledge or confidence.

If the uncertainties in the Modifying Factors that prevented the Measured Mineral Resource being converted to a Proved Mineral Reserve are removed, then the Measured Mineral Resource may be converted to a Proved Mineral Reserve. No amount of confidence in the Modifying Factors for conversion of a Mineral Resource into a Mineral Reserve can override the upper level of confidence which exists in the Mineral Resource. Under no circumstances can an Indicated Mineral Resource be converted to a Proved Mineral Reserve, unless new information first justifies conversion to a Measured Mineral Resource. Under no circumstances can an Inferred Mineral Resource be converted to a Mineral Reserve unless first converted to an Indicated or Measured Mineral Resource.

37. In situations in which figures for both Mineral Resources and Mineral Reserves are reported, the Public Report must include a statement that clearly indicates whether the Mineral Resources are inclusive of, or exclusive of those Mineral Resources that have been modified to produce Mineral Reserves.

For transparency, it is preferred that Mineral Resources be reported as exclusive of Mineral Reserves. However, in some situations, there are reasons for reporting Mineral Resources inclusive of Mineral Reserves. It must be made clear which form of reporting has been adopted. Appropriate forms of clarifying statements may be:

‘The Measured and Indicated Mineral Resources are exclusive of (in addition to) Mineral Reserves.’ or ‘The Measured and Indicated Mineral Resources are inclusive of those modified to produce Mineral Reserves’

Mineral Resources must be reported separately from Mineral Reserves and must not be aggregated because the resulting total will be misleading and may be misunderstood or, more seriously, misused to give a false impression of the prospectivity of a project.

SUMMARY CRITERIA USED TO ESTIMATE AND REPORT MINERAL RESERVES

38. This section provides summary criteria including Modifying Factors that must be considered for estimation and reporting of Mineral Reserves. Further detailed criteria that must also must be considered for reporting Exploration Results, Mineral Resources and Mineral Reserves are presented in Table 1.

a) General Criteria

- The assumptions made to estimate a Mineral Resource that will be converted to a Mineral Reserve.
- A clear expression indicating whether Mineral Resource is inclusive or exclusive of Mineral Reserve.
- Comments about any field visit(s) made by the Competent Person and the outcome of such visits.
- If no field visits were made, indicate the reason why.
- The type and level of work done for converting a Mineral Resource into a Mineral Reserve.
- The Code indicates that for Mineral Resources to be converted into Mineral Reserves a study has to be conducted, at least at Pre-Feasibility level; such studies should define a technically accessible and economically workable mine plan taking relevant Modifying Factors into account.
- Basis of the cut-off grade setting process and/or the required quality parameters.
- Pre-Feasibility studies to convert Mineral Resources into a Mineral Reserve or methods and assumptions specified in Feasibility study (in other words, applying suitable factors through optimization or detailed design).
- Other mining parameters including ore/waste selection, nature and appropriateness of mining method(s) and related design issues such as pre-stripping, access etc.
- Assumptions related to geotechnical hydrogeological parameters (for instance slope inclination and stope dimensions etc.), grade/quality control and pre-production drilling.
- Mineral resource model used for important assumptions and pit and mass optimization (if applicable). Comparison of tonnage and grade of Mineral Resources to planned tonnage and grade of blocks or stopes selected to ore.
- Planned mine dilution and recovery factors used.
- Unplanned mine dilution and recovery factors used.
- Infrastructure conditions related to selected mining methods (e.g., shafts, haul roads, ventilation, dewatering, etc.).

b) Metallurgical factors or recommendations

- Recommended metallurgical process and appropriateness of it to the mineralization style. Recommended beneficiation to produce a saleable product.
- Description of the metallurgical process, ranging from a well-tested technology to a fundamentally new technology.
- Nature, quantity and representation of the applied metallurgical testing, nature of the

applied metallurgical zoning and the applied metallurgical recovery factors.

- Evaluation of the deleterious effects of gangue elements or minerals,
- Existence of any bulk sample or existence of a pilot-scale test work and the location for which these samples taken as a whole (this level is deemed to be the representative of the reserve).
- Mineralogical assessments, including species identified, particle size distributions and intergrowths, measurements of hardness and abrasion characteristics.

c) Infrastructure

- Existence or reasonable expectation of a suitable infrastructure: plant construction, power, water, transport (particularly for bulk commodities), availability of land for mine, plants, dumps, tailings etc. and property rights and ownership.

d) Costs

- Derivation of assumptions related to capital costs anticipated in the study.
- Methodology used for estimating operating costs.
- Funds provided for the mitigation of harmful elements.
- Derivation of assumptions related to metal or commodity price(s) for saleable minerals.
- Derivation of assumptions related to foreign exchange rates used in the study.
- Derivation of transport costs.
- Basis of the estimation of treatment and refining costs, penalties for failing to meet specifications etc.
- Incentives for mine and infrastructure development.
- Funds to be expended to buy or licence technology or intellectual property.

e) Revenue factors

- Derivation of assumptions in relation to breakeven analysis, metal or commodity price(s) rates, transport and treatment and refining costs, penalties, credits, net smelter return and similar revenue factors.
- Derivation of assumptions related to metal or commodity price(s) for principal metals, minerals and by products.

f) Market assessment

- Where appropriate, demand, supply and stock status for certain commodities, consumption patterns and possible factors that may affect supply and demand in the future.
- Customer–competitor analysis and defining possible market windows and market-entry strategy for a product.
- Price and volume estimations and the basis of these estimations.
- Customer specifications test and acceptance conditions included in purchase agreements for industrial minerals.

Where appropriate, independent confirmation of market assessments.

g) Economics

- The source and reliability of economic inputs including economic analysis, taxation, royalties, estimated inflation, discount rate etc., to produce a net present value (NPV) in the study.
- NPV ranges and sensitivity against changes in important assumptions and inputs.

h) Environmental and Social

Reports supporting Mineral Resource and Mineral Reserve estimates should take into account environmental, social (sustainability), and health and safety impacts that are expected during development, operation, and after closure. The Competent Person should provide a review of reasonably available and relevant information on environmental, health, permitting, and social or community considerations related to the project and its stage of development. The review should include the status of the agreements made with important stakeholders and issues affecting the social license related to operation.

Consideration should be given to include, where relevant a discussion of:

- A summary of the results of environmental and/or health studies and a discussion of environmental issues that could materially impact the Company's ability to extract the Mineral Resources or Mineral Reserves;
- Requirements and plans for stockpiles, waste and tailings disposal, site monitoring, and water management both during operations and post mine closure;
- Key project permitting requirements, the status of any such permit applications;
- Potential social or stakeholder considerations for the project and the status of any major negotiations or agreements with local communities;
- Projected mine closure (remediation and reclamation) requirements and costs;
- Special capital or operating requirements for handling toxic minerals or reagents, as well as other health and industrial hygiene risks.
- Summary environmental, health, safety, social risks and mitigation plans.

i) Property Status

- Status of the material legal agreements and marketing regulations.
- Mining Law status, state agreements and approvals for the implementation of the project. There must be reasonable expectations for receipt of all the necessary state approvals at anticipated dates before or during Feasibility Studies. Emphasis should be made on identifying and discussing the existence of any unsolved issue that must be mitigated to enable extraction of the reserve.

j) Geological Confidence Levels

- Identification of risks and opportunities in the Mineral Resources and Reserves.
- Basis for categorizing Mineral Resources and Reserves into different confidence levels.
- Ratio of the Probable Mineral Reserves derived from the measured Mineral Resources (if any).
- A statement related to the relative accuracy and confidence in a Mineral Reserve

estimate using an approach or a method. For instance, if statistical or geo-statistical methods, used to quantify the relative accuracy of the reserve at the defined confidence limits, is applied or if such an approach is approved, factors that can affect the relative accuracy of the estimate need to be discussed on a qualitative level.

- The statement should indicate whether it is related to global or local estimates, and if it is local, tonnages that should be related to technical and economic assessment must be specified. Documents should include the assumptions made and the procedures used.
- Accuracy and confidence discussions should be extended to discussions of the factors that may have a significant impact on mine preparation or any applied modifying factor that has uncertainty areas at the existing study stage.
- It is accepted that this could not be possible or suitable under every condition. These expressions related to the relative accuracy and confidence of the estimate should be compared to production data where available.

k) Audits and Reviews

- Outcomes of the all types of audits or reviews of Mineral Reserves including the audits or reviews carried on prior to declaration a Mineral Reserve.

TECHNICAL STUDIES

39. Definitions are included in the Code to provide clarity about what to expect when reporting by using these terms. The definition of the Scoping Study has been included because this term is commonly used in public reporting. However, Article 29 requires that a Pre-Feasibility or Feasibility Study has to be carried out in order to make a public reporting on a Mineral Reserve. A Mineral Reserve must not be reported on the basis of completing a Scoping Study.

Table 2 of the UMREK Code shows the basis for and range of accuracy of estimates for Technical Studies. At operating properties an economic life-of-mine plan can be considered as the appropriate level of study (e.g., Pre-Feasibility or Feasibility) for the reporting of Mineral Reserves, unless those reserves require significant new infrastructure, such as a new shaft or a new processing method and associated plant.

For Pre-Feasibility and Feasibility Studies, formal assessment of relevant criteria, as listed in Table 1 and 2, is required in order to determine how much available Measured and Indicated Mineral Resource may be converted to Mineral Reserves.

40. 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.

A Scoping Study must not be used as basis for Mineral Reserve estimations.

Reporting the general results of a Scoping Study needs to be undertaken with care and should include appropriate proximate cautionary statements that there is no implication that Mineral Reserves have been established or that economic development is assured. In this regard, it may be appropriate to indicate the Mineral Resource inputs to the Scoping Study and the processes applied. Scoping Studies should not include Exploration Targets as part of the mine plan or economic analysis. If the Scoping Study is partially or wholly supported by Inferred Mineral Resources, this should be clearly stated, and a proximate cautionary statement should be included.

For all Scoping Studies, the company must include a cautionary statement in the same paragraph as, or immediately following, the disclosure of the Scoping Study.

An example cautionary statement is as follows:

The Scoping Study referred to in this report is based on low-level technical and economic assessments, and is insufficient to support estimation of Mineral Reserves or to provide assurance of an economic development case at this stage, or to provide certainty that the conclusions of the Scoping Study will be realised.'

In discussing 'reasonable prospects for eventual economic extraction' found in Article 20, all types of issues affecting eventual economic extraction, including parameters related to mining, must be assessed by the Competent Person (even if it is only a preliminary assessment). While the Scoping Study may form the basis of this assessment, the Code does not require a Scoping Study to be completed to declare Mineral Resources.

Scoping Studies are generally the first-stage economic assessment of a project and can be based on the combination of directly collected project data and estimates acquired from a similar deposit or operation. In addition, a Scoping Study can be used within the company for purposes related to comparison of projects and planning. The most important point to be considered when reporting the general outcomes of a Scoping Study is not to imply that a Mineral Reserve has been declared and/or a positive result has been achieved in economic terms. In this sense, indicating in the Scoping Study the Mineral Resource inputs and the applied procedures would be a good practise.

While initial mining and processing cases may have been developed during a Scoping Study, they must not be used to allow an Mineral Reserve to be developed.

Scoping Studies can also be called Preliminary Economic Assessments. 'Order of magnitude' as used herein typically implies low accuracy cost estimates (see Table 2 of the UMREK Code).

41. 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 Resources 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.

As specified in Article 29, assessment of all Modifying Factors in accordance with the Code is required to determine what portion of the Measured and Indicated Mineral Resources is to be converted into a Mineral Reserve.

The Pre-Feasibility Study will assess the application and explanations of all Modifying Factors (as summarised in Section 4 on Mineral Reserves in Table 1), with the purpose of indicating economic viability so as to support the public reporting of a Mineral Reserve. The Pre-Feasibility study will define the mining method, ore processing, infrastructure requirements and capacities, but will not finalise them. Detailed assessments of environmental and socio-economic impacts and requirements will also be well advanced. The Pre-Feasibility Study will highlight areas that require further refinement within the final study stage.

42. 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.

The Code does not require a full and complete Feasibility Study for converting Mineral Resources into Mineral Reserves; however, it requires a Pre-Feasibility Study where a mining plan, viable in technical and economic terms, is identified, and the necessary Modifying Factors are taken into account.

Terms such as 'Bankable Feasibility Study' and 'Definitive Feasibility Study', are deemed to be equivalent to Feasibility Study, in the way they have been defined in this article.

The Feasibility study has a higher confidence level than a Pre-Feasibility study and normally, as the basis of an investment decision or to support a project financing, it includes a mining and ore processing method that has been prepared meticulously enough, infrastructure requirements, capacity and process designs. Social, environmental and governmental approvals, permits and agreements will be in place, or will be approaching finalisation within the expected development timeframe. The Feasibility study should include the description and application (as summarised in Section 4 on Mineral Reserves in Table 1) of all Modifying Factors, in a more detailed form compared to a Pre-Feasibility Study, and the Feasibility Study may also address implementation issues such as detailed mining schedules, construction ramp up, and project execution plans.

REPORTING OF MINERALISED FILL, PILLARS, LOW GRADE MINERALISATION, STOCKPILES, TAILINGS AND DUMPS

43. The Code is applied when reporting all potentially economic materials. This can include mineralised fill, remnants, pillars, low grade mineralisation, stockpiles, dumps and tailings (remnant materials) where there are reasonable prospects for eventual economic extraction in the case of Mineral Resources, and where extraction is reasonably justifiable in the case of Mineral Reserves. Unless specified otherwise, Articles 1-42 of the Code (including Figure 1) are to be applied.

Any mineral-bearing material defined in this article, is thought to be similar to in-situ mineralization in terms of Mineral Resource and Mineral Reserve reporting. Assessments related to the extraction of such mineral-bearing materials must be carried out by experienced and professional people.

If there are no reasonable prospects that the mineral-bearing materials defined in this article can be operated wholly or partially in economic terms, such materials cannot be categorised as a Mineral Resource nor as a Mineral Reserve. If some parts of the mineral-bearing materials are currently sub-economic, and there is a reasonable expectation that these materials can become economic in the future, then these materials can be categorised as a Mineral Resource. If technical and economic studies indicate that the material can be mined in economic terms under the assumed realistic conditions, then the material can be classified as a Mineral Reserve.

The above guidelines apply equally to low-grade in situ mineralisation, sometimes referred to as 'mineralised waste' or 'marginal grade material', and often intended for stockpiling and treatment towards the end of mine life. For clarity of understanding, it is recommended that tonnage and grade estimates of such material be itemised separately in Public Reports, although they may be aggregated with total Mineral Resource and Mineral Reserve figures.

Stockpiles are defined to include both surface and underground stockpiles, including broken ore in stopes, and can include ore currently in the ore storage system. Mineralised material in the course of being processed (including leaching), if reported, should be reported separately.

REPORTING OF COAL RESOURCES AND RESERVES

44. Articles 44 to 47 of the Code address matters that relate specifically to the Public Reporting of Coal Resources and Coal Reserves. Unless specified otherwise, Articles 1 to 43 and Article 64 also apply, including Figure 1. Table 1 should be considered when reporting coal resources and reserves.

In line with the goals related to Public Reporting, the term 'coal' must be used instead of 'mineral and ore', 'quality' instead of 'grade', 'coal deposit' instead of 'mineralization', and 'coal content' instead of 'yield', when it comes to conditions related to coal. All references to 'metallurgical' Modifying Factors for Coal Reserves must be replaced by 'coal beneficiation procedures' Modifying Factors.

When reporting Coal Reserves, a clear distinction must be made between reserves where mining losses have been taken into account (sometimes described as recoverable or run of mine) and saleable product where both mining and processing losses have been included (sometimes referred to as saleable reserves). All reserves, by definition, include mining losses and dilution, and the use of superfluous description is discouraged. In situ coal is, also by definition, limited to Coal Resources. For Coal Resources that are reported on an in situ basis, the Competent Person should comment on the expected dilution and mining recovery that would occur during operations and the amount expected to be recovered following beneficiation. As for all minerals, Coal Resources should pass the test for reasonable prospects for eventual economic extraction, with special consideration to geographical access and likelihood of obtaining permits.

Marketable product (or Saleable Coal Reserves), representing the product that is beneficiated or processed otherwise, can be made public. When this is the case, the equivalent Probable and/or Proved Coal Reserves need to be indicated, and the basis of the estimated revenue expected from the saleable product needs to be provided.

45. Due to the effects on planning for land use, the administrative management (Ministry of Energy and Natural Resources Turkish Coal Enterprise and Turkish Hard Coal Authority) may need to have inventory coal estimations that are not limited by short- and mid-term economic issues. The UMREK Code does not govern these estimates. In addition, see the directives of Article 6 and Article 20.

46. Relevant coal quality information must be reported for all Coal Resource and Coal Reserve categories on which quality parameters are based. Where applicable, Saleable Coal Reserves need to be subdivided into the relevant coal product types.

Reference to the terms 'coking coal' or 'metallurgical coal', or any reference to coking properties, should not be made until specific coking properties are demonstrated by analytical results for samples from a deposit.

Parameters used to measure coal quality, should be reported on the basis of, for instance, 'As Received' or 'Air Dried' moisture. The quality of the coal should be indicated in accordance with the parameters related to specific applications: steam coal, metallurgical coal (coking coal) etc. The selection of the relevant quality parameters is the responsibility of the Competent Person and may include ash, volatile matter, sulphur, coking properties, calorific value etc. and also must include bulk density as it is one of the most important parameters.

Resource categorization should take into consideration both continuity and reliability of thickness measurements, and continuity, reliability and confidence in quality parameters, recognising that variability in seam thickness and quality are not necessarily interdependent. Continuity of seams, partings and their termination by dykes, faults and channels or areas where spontaneous combustion has occurred should be considered both horizontally and vertically, with attention paid to the ability of the likely mining method to cope with discontinuities and displacements.

47. The terms 'Mineral Resource' and 'Mineral Reserves' as well as the above defined sub-sections are valid for coal reporting, but if the reporting company wishes to do so, the terms 'Coal Resource (Resources)' and 'Coal Reserve (Reserves)' can be replaced by suitable sub-sections.

REPORTING OF THE DIAMOND AND OTHER GEMSTONE EXPLORATION RESULTS, MINERAL RESOURCES AND MINERAL RESERVES (Also valid for other gems)

48. Articles 48 to 51 of the Code address matters that relate specifically to the Public Reporting of Exploration Results, Mineral Resources and Mineral Reserves for diamonds and other gemstones. Unless specified otherwise, Articles 1 to 43 and Article 64 of this Code (including Figure 1) also apply. When reporting Exploration Results, Mineral Resources and Mineral Reserves for diamonds and other gemstones, Table 1 must be taken into account. In Articles 48 to 51, 'diamond' implies both diamonds and gemstones.

For the purposes of Public Reporting, the requirements for diamonds and other gemstones are generally similar to those for other commodities with the replacement of terms such as 'mineral' by 'diamond' and 'grade' by 'grade and average diamond price (value)'. The term 'quality' should not be substituted for 'grade', since in diamond deposits these have distinctly separate meanings. Other industry guidelines (Precious Metals and Precious Stones Market, Ministry of Development Mining Specialised Commission Reports etc.) on the estimation and reporting of diamond resources and reserves may be useful but will not under any circumstances override the provisions and intentions of the UMREK Code.

A number of characteristics of diamond deposits are different from those of, for example, typical metalliferous and coal deposits and therefore require special consideration. These include the generally low mineral content and variability of primary and placer deposits, the particulate nature of diamonds, the specialised requirement for diamond valuation and the inherent difficulties and uncertainties in the estimation of diamond Resources and Reserves.

49. Reports of diamonds recovered from sampling programmes must provide material information relating to the basis on which the sample is taken, the method of recovery and the recovery of the diamonds. The weight of diamonds recovered may only be omitted from the report when the diamonds are considered to be too small to be of commercial significance. This lower cut-off size should be stated.

The stone size distribution and price of diamonds and other gemstones are critical components of the Resource and Reserve estimates. At an early exploration stage, sampling and delineation drilling will not usually provide this information, which relies on large- diameter drilling and, in particular, bulk sampling.

In order to demonstrate that a Resource has reasonable prospects for eventual economic extraction, some description of the likely stone-size distribution and price is

necessary, however preliminary the analysis of these may be. To determine an Inferred Mineral Resource in simple, single-facies or single-phase deposits, such information may be obtainable by representative large-diameter drilling. More often, some form of bulk sampling, such as pitting and trenching, or sometimes underground development, would be employed to provide larger sample parcels.

In order to progress to an Indicated Mineral Resource, and from there to a Probable Mineral Reserve, it is likely that much more extensive bulk sampling would be needed to fully determine the stone-size distribution and value. Commonly such bulk samples would be obtained by underground development or in some cases a comprehensive large diameter drilling program designed to obtain sufficient diamonds to enable a confident estimate of price.

In complex deposits, it may be very difficult to ensure that the bulk samples taken are truly representative of the whole deposit. The lack of direct bulk sampling, and the uncertainty in demonstrating spatial continuity of size and price relationships should be persuasive in determining the appropriate resource category.

50. Where diamond Mineral Resource or Mineral Reserve grades (carats per tonne) are based on correlations between the frequency of occurrence of micro-diamonds and of commercial size stones, this must be stated, the reliability of the procedure must be explained, and the cut-off sieve size for micro- diamonds reported.

—51.— For Public Reports dealing with diamond or other gemstone mineralisation, it is a requirement that any reported valuation of a parcel of diamonds or gemstones be accompanied by a statement verifying the independence of the valuation. The valuation must be based on a report from a demonstrably reputable and qualified expert.

If a valuation of a parcel of diamonds is reported, the weight in carats and the lower cut-off size of the contained diamonds must be stated, and the value of the diamonds must be given in US Dollars and Turkish liras (TL) per carat. Where the valuation is used in the estimation of diamond Mineral Resources or Mineral Reserves, the valuation must be based on a parcel representative of the size, shape and colour distributions of the diamond population in the deposit. Diamond valuations should not be reported for samples of diamonds processed using total liberation methods.

REPORTING OF THE MINERAL EXPLORATION RESULTS, RESOURCES AND RESERVES FOR INDUSTRIAL MINERALS

52. If the criteria listed in the relevant Articles 6 and 7 of the Code are met, Industrial minerals fall under the scope of the UMREK Code. Pursuant to the UMREK Code; industrial minerals include boron minerals, quartz/quartzite sand, kaolin, phosphate, limestone, talc, feldspar, clay, bentonite, chalcedony and diatomaceous earth, gypsum, barite, diaspore, fluorite, graphite, huntite, illite, sulphur, magnesite, mica, olivine, obsidian, perlite, pumice, sodium, trona, zeolite, emery stone, vermiculite and other similar commodities.

Mineral Resource or Mineral Reserve estimates of the minerals with defined characteristics must be reported in terms of the mineral or minerals on which the project is based, and should include the physical and/or chemical characteristics of these minerals.

When reporting information and estimates for industrial minerals, the basic principles and purpose of the UMREK Code applies, and these issues must be taken into consideration. Even if the chemical analyses of the mineral may not always be relevant, if the outcomes of other analyses based on quality and performance are suitable, then their characteristics could be more applicable and acceptable as a basis of reporting. Depending on their quality and properties, some industrial minerals can be used for multiple applications. In such a case, the Competent Person should indicate multiple products separately and as a percentage of the deposit volume.

Prior to reporting the Mineral Resource or Mineral Reserve, and by taking into account certain basic properties or qualities such as probable product characteristics, proximity to markets and general product marketability, the Competent Person should report the Mineral Resources and Mineral Reserves within the framework of an existing mining plan or a series of defined product and market assumptions.

In every case where saleable or usable product is being reported, it is highly important to include a statement to ensure that the reader is fully informed about what is being specified.

In some cases, publishing of detailed information (particularly quality) on Mineral Resources and Reserves may be omitted due to commercial sensitivity, and this must be clearly indicated in the report.

REPORTING OF EXPLORATION RESULTS, MINERAL RESOURCES AND MINERAL RESERVES FOR CEMENT FEED MATERIALS AND CONSTRUCTION RAW MATERIALS

53. Articles 53 to 59 of the Code address matters that relate to the Public Reporting of cement feed materials and construction raw materials of all forms that are generally sold on the basis of their product specifications and market acceptance.

54. Unless otherwise stated, Articles 1 to 43 of this Code (including Figure 1) apply. Table 1, as part of the guidelines, should be considered when reporting Exploration Results, Mineral Resources and Mineral Reserves for Cement Feed Materials and Construction Raw Materials.

55. When reporting information and estimates for cement feed materials and construction raw materials, all of the key principles and purpose of the Code apply. Chemical analyses may not always be relevant, and other quality and performance characteristics may be more applicable and acceptable as the basis of the reporting.

56. Some cement feed materials and construction raw material deposits may be capable of yielding products suitable for more than one application and/or specification. If considered material by the Competent Person, such multiple products should be quantified either separately or as a percentage of the bulk the deposit.

Unless it is a specific aspect of his or her instructions to reflect the range of product mixes and target markets for the deposit, the Competent Person should normally report the reserves and resources within the framework of an existing mining plan or established set of product and market assumptions and objectives.

If there is potential for ancillary products, or mining or process waste, to be sold off-site for subsidiary uses in addition to the planned sales of primary products (i.e. other uses for non-saleable quarry production, such as secondary aggregate or engineering or other fill), the Competent Person should reflect this in his report and comment on any significant implications (e.g. reductions in the amount of non-saleable material that could otherwise be used as a restoration material).

The factors underpinning the estimation of Mineral Resources and Mineral Reserves for cement feed materials and construction raw materials are the same as those for other deposit types covered by the Code. It may be necessary, prior to the reporting of a Mineral Resource or Mineral Reserve, to take particular account of certain key characteristics or qualities such as likely product specifications, proximity to markets and general product marketability.

For cement feed materials and construction raw materials, it is common practice to report the saleable (or useable) product rather than the 'as mined' product, as it is recognised that commercial sensitivities may not permit the publication of Mineral Resources and Reserves in the latter format which is the preferred style of reporting within the Code.

It is important that, in all situations where the saleable or usable product is reported, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported.

57. Other industry guidelines on the estimation and reporting of cement feed materials and construction raw materials Resources and Reserves may be useful but will under no circumstances override the provisions and intention of this Code for public reporting.

Reports should make clear the 'permitted' or 'non-permitted' status of the resources and reserves, and in addition reserves particularly should only be quoted where the operator has legal control.

It should be noted that many of the Modifying Factors are more relevant or specific to cement feed materials and construction raw materials than to metalliferous minerals. Specifically the legal control may be more important, as well as the permitting or consenting status, due to the local nature of the planning process for minerals.

58. Mineral Reserves and Resources of cement feed materials and construction raw materials serving localised or regional markets may be reported on an aggregated basis on an appropriately defined geographical basis to reflect the particular economic constraints of the deposits being reported without divulging commercially sensitive information.

59. In certain cases commercial sensitivity may prevent the publication of detailed information associated with Mineral Resources and Reserves, and in such cases this should be clearly justified in the report.

REPORTING OF THE MINERAL EXPLORATION RESULTS, RESOURCES AND RESERVES FOR NATURAL (DIMENSION) STONES

60. In cases where they meet the criteria set forth in the relevant articles (6 and 7) of the Code, natural stones (marble etc.) are covered by UMREK Code. Pursuant to the UMREK Code; this article addresses block-production natural stones ('dimension') stones such as Marble, Travertine, Granite, Andesite, Basalt and natural stones used for decorative purposes. Unless specified otherwise, all of the Articles from 1 to 43 and Article 64 of this Code (including Figure 1) shall apply. Table 1 must be referenced when reporting Natural Stone (produced in blocks) Resources and Reserves.

Mineral Resource or Mineral Reserve estimations of the minerals with defined characteristics must be reported in terms of the mineral or minerals on which the project is based, and should include the physical and chemical characteristics of these minerals as applicable.

When declaring information and estimations about natural stones, the basic principles and purpose of the UMREK Code applies, and these issues must be taken into consideration. Depending on their quality and properties, some natural stones can be

used in more than one product. In such a case, the Competent Person, must indicate separately multiple products as a percentage of the deposit volume.

When determining Mineral Resource and Mineral Reserves for natural stones, unlike other minerals, reporting should be made by taking the rock type as a basis. Type of rock is determined by performing petrographic analysis. With the results of this analysis, the type of the rock and the existence of foreign materials inside it will be known. If the foreign materials inside the rock or the mineral oxides are large enough to be seen with naked eye, chemical analyses must also be performed to determine their concentration.

Prior to reporting the mineral resource or mineral reserve, and by taking into account certain basic properties or qualities such as probable product characteristics, closeness to markets and general product marketability, the Competent Person should report the Mineral Reserves and Mineral Resources within the framework of an existing mining plan or a series of defined product and market assumptions. If there is an opportunity for auxiliary products (products that are non-saleable that can be used within the facility and/or pit), and mining or process dumps to be used in situ for making side products as an addition to the planned selling mix of products to be used primarily, then the Competent Person should reflect this in his report and make comment about its significant impacts (for instance, reduction in the quantity of a non-saleable product that can be used as a restoration material).

In every case where saleable or usable product is being reported, a declaration statement should be included to ensure that the reader is fully informed about what is being specified.

Natural stone deposits may provide products that are suitable for more than one application and/or characteristic (such as utilizing the dump material as ceramic, ballast, husbandry etc.). When it is agreed by the company, such multiple products should be assessed separately or as a percentage of the mineral resource. Articles 1-43 of the Code (including Figure 1) are applied to such stocks, dumps and tailings.

In some cases, publishing of detailed information on Mineral Resources and Reserves could be omitted due to commercial sensitivity, and this must be clearly indicated in the report.

For a rock to become natural stone (marble) planned to be produced as a structure and facing stone for decorative purposes, it has to be suitable for block production and cutting into slabs. In terms of block production, two main traits need to be present. One of those traits is the ability of the field to provide commercial-sized blocks in desired dimensions, while the other is for this block to be suitable for cutting into slabs in

different shapes. However, for some natural stones such as onyx marble, which is rare and has commercial value, the situation is different. As such stones are used for handcrafts and ornaments, they are assessed in kilograms, because they have small block dimension and volumes.

In natural stone products, colour-texture homogeneity bears a great importance. Defects observed in colour and texture particularly in slabs for export bear great importance in pricing and may cause great differences in product prices. In granite-type natural stones, enclaves in undesired size and distribution, quartz veins and tiny cracks diagonally cutting blocks and/or slabs in production, aplite veins, colour and texture changes all lead to frequent quality changes in the field, and therefore they need to be identified.

In limestone and crystalline marbles, there are defects and faults such as oxidation-related thin veins in different colours, cracks and joints, fractures, irregular calcite veins, dark-coloured limestone bands, areas with different grains sizes, colorations in different directions, small gaps and pores, different colour zones, dark-coloured marble bands, and these have an effect on the price of the product. The rock planned to be extracted for sale need to be examined and reported to see whether it has colour, texture and quality homogeneity in large areas. In addition, two- and/or three-dimensional geology maps and sections must be added to the report to indicate the quality change.

An Indicated Natural Stone (i.e. Marble) Mineral Resource has a lower confidence than that applying to a Measured Natural Stone Mineral Resource and may only be converted to a Probable Natural Stone Mineral Reserve.

A Measured Natural Stone Mineral Resource is that part of a Natural Stone Resource for which quantity, saleable commercial block product characteristics (average block size, density, shape and physical and techno-mechanical properties) are estimated with confidence to allow the application of Attenuation Factors (see below) to support mine planning and evaluation of the economic viability of the deposit.

A Measured Natural Stone Mineral Resource has a higher level of confidence than that applying to either an Indicated Natural Stone Mineral Resource or and Inferred Natural Stone Mineral Resource. It may be converted to a Proved Natural Stone Mineral Reserve or under certain circumstances to a Probable Natural Stone Mineral Reserve.

Within the scope of reporting, it is possible to utilise core drilling (vertical and/or inclined) and geophysical methods (Ground Penetration Radar (GPR), Very Low

Frequency-Electromagnetic Gradient/Radio Frequency-Electromagnetics (VLF-EM/RF-EM)), electrical resistivity etc.), in natural stone exploration.

In Mineral Resource and Mineral Reserve reporting, all the Mineral Resources identified in the field need to be identified (geo-stratigraphic analyses by considering market probabilities and describing the geological unit planned for production). Measured Resource estimation (containing data acquired from drilling and/or geophysics through geological prospecting, outcrop sampling, section works), and the Proven Reserves should be identified by defining the following 6 Attenuation Factors and including in the report.

JOF (Joint-fissures opening factor): The volume percentage in % which cannot be produced due to joints, fissure and openings

KF (Karstic Factor): The estimated volume percentage of karstic openings in % (to be produced through field analyses and drill core logs)

WF (Weathering Factor): weathered rock volume percentage in % (to be produced through field analyses and drill core logs)

MF (Mining Factor: % of volume that cannot be produced due to mining design and planning at the targeted vein (the volume fraction of the resource quantity that will be left unproduced and is not producible in economic terms due to the final slope design shaped by the pit type)

QF (Quality Factor): volume percentage that does not meet the quality traits (such as colour, pattern, crystal grain size, texture, faults and defects etc. and the in-field distribution of colour-pattern-crystal grain size) expected by the market from the natural stone planned to be produced (in cases where possible, the quality distribution in the field must also be indicated on the map).

JF (Joint Factor) : % of the joints per unit volume regarding the natural stone reserve planned to be extracted (J_v) and extractable mercantile block volume estimated correspondingly (V_b) and % of the reserve per unit volume that cannot be extracted based on the block recovery ratio.

From the resource quantity to be identified in the reporting, reserve quantities determined by also considering the above specified reduction factors must be identified.

REPORTING OF METAL EQUIVALENTS

61. The issue of reporting the metal equivalents (the single equivalent amount of a main metal) of Exploration Results, Mineral Resources and Mineral Reserves for polymetallic deposits, should indicate the details of all material factors that contribute to the net value derived from each metal.

All the topics listed below should be discussed in the Public Report.

- Metal equivalent calculation must include individual grades for all metals included in the metal equivalent calculation,
- Commodity prices for all metals must be included. Discussion of the spot price is not sufficient if the prices used for calculating the metal equivalent have not been declared. However, in cases where the prices actually used are commercially sensitive, the Competent Person should provide a sufficient level of information about the methodology used to define these prices, and this should be in the form of a narration, rather than numerical form, to ensure investors can understand it,
- Metallurgical recoveries for all metals and the basis of calculated recoveries (metallurgical tests, detailed mineralogy, similar deposits, etc.),
- A clear indication that the Competent Person believes that all the elements included in the Metal equivalents estimation have reasonable prospects for recovery and sales; and
- Calculation formula that has been used.

In general, the metal selected for equivalent based reporting, should be the metal that has contributed most to the metal equivalent calculation. Otherwise, a clear explanation for choosing another metal must be included in the report.

In the sense of calculating meaningful metal equivalents, estimates of metallurgical recoveries must be used for each metal.

In the case that metallurgical recovery data are not available or if they are unreliable, reporting on the basis of metal equivalents should not be used.

In case metallurgical recovery data are not available for many projects at exploration stage, or if such data cannot be estimated with a reasonable confidence, reporting of the metal equivalents could be misleading.

REPORTING OF THE EXPLORATION RESULTS, MINERAL RESOURCES AND MINERAL RESERVES FOR METALIC AND NON-METALLIC MINERALS EXTRACTED THROUGH SOLUTION MINING METHODS

62. Articles in this section of the Code are related to reporting of all the minerals that have been dissolved in situ by water, steam or another solvent and extracted through a

surface transfer method. When issuing a report about minerals produced by solution mining, Table 1 should be taken into consideration.

Information and estimates related to minerals extracted by solution mining must be reported in accordance with the basic principles and purpose of the Code. The Mineral Resources are expressed in terms of in situ rock quantities, and quality parameters, representing the proportion and quality of the economic mining product. If the Mineral Resources are being estimated during a stage after the production has started, the method and assumptions of such estimations must be indicated.

As it is the case for all other minerals reported according to the Code, the Competent Person should report the Mineral Reserves and Mineral Resources within a framework of an existing production plan and a series of defined products, market assumptions and targets.

Normally, the extracted product for minerals extracted by solution mining would be the solid matter that remains after crystallization, removal or recycling of solvent. The quantity of the solvent itself should not be given as part of the resources or reserves. It is important that an explanation statement is included in every report related to saleable products, to ensure the reader is fully informed about the reported product and about the steps needed to obtain this saleable product.

Other industrial guidelines (e.g., hydrogeology) may be useful in estimating and reporting the Resources and Reserves of minerals extracted by solution mining.

Reports should indicate the 'permitted' or 'non-permitted' status of the resources and reserves. In addition, if the reserves are under legal inspection by the state, this must be indicated.

In some cases, publishing of detailed quality parameters could be avoided due to commercial sensitivity, and this must be clearly indicated in the report.

REPORTING OF EXPLORATION RESULTS, MINERAL RESOURCES AND MINERAL RESERVES FOR OIL SHALES, OIL SANDS AND OTHER ENERGY MINERALS EXTRACTED THROUGH MINING METHODS

63. These articles of the UMREK Code are related to reporting of oil shales and oil sands containing bitumen, petroleum and other hydrocarbons where solid material is processed to extract the hydrocarbons when reporting the Mineral Resources and Mineral Reserves of hydrocarbons sourced from oil shales and oil sands Table 1 must be taken into account.

When reporting the data and estimations of hydrocarbons sourced from oil shales and oil sands recovered by processing solid material, the basic principles and purpose of the Code are valid. Chemical analysis may not always be related to the estimation, and other quality and performance traits may be more applicable and acceptable as a basis of the reporting. Deposits of such material may permit producing products that are suitable for more than one application

and/or specifications. The Competent Person must indicate such multiple products separately or as a percentage of the deposit volume.

The Competent Person should normally report the Mineral Resources and Mineral Reserves within the framework of an existing mining plan or a series of specified products, market assumptions and targets. If there is an opportunity for ancillary products, mining or process waste to be used to recover by-products as an addition to the planned sales of primary products, then the Competent Person should reflect this in his report and make comment about significant implications (for instance, reduction in the quantity of a non-saleable product that can be used as a restoration material).

Factors assisting the estimation of Mineral Resources and Mineral Reserves of hydrocarbons from oil shale and oil sands sources, are the same as the other deposit types covered by the Code. Prior to reporting a Mineral Resource or Mineral Reserve, it might be necessary to consider certain basic properties or qualities such as probable hydrocarbon product characteristics, proximity to markets and general product marketability.

Reporting the Exploration Results, Mineral Resources and Mineral Reserves for hydrocarbons sourced from oil shales and oil sands may require using other reporting standards and reporting according to securities market regulations that are different than those applicable for solid minerals. In such cases, other reporting formats have priority in general, and the selection of the proper reporting standard to be used is not dependent upon the decision of the Competent Person.

Despite other industrial directives, reporting the Mineral Resources and Mineral Reserves of hydrocarbons from shale and sandstone sources may be useful if such materials are solid minerals covered by the UMREK Code. Therefore, other reporting standards do not invalidate the publicised declaration provisions and objectives of this Code.

In some cases, publishing of detailed quality parameters could be omitted due to commercial sensitivity, and this must be clearly indicated in the report.

REPORTING OF IN SITU OR IN GROUND VALUATIONS

64. Publication of in-situ or in-ground financial assessments breaches the principles of the Code, as it does not contain the transparent and comprehensive data required by the Code (as indicated in Article 4). At the same time, in-situ or in-ground financial valuations violate Article 28 of the Code. In such in situ financial valuations, Exploration Results, Mineral Resources or the size of the extraction must not be reported by companies. The use of such financial valuations has little or no relationship to economic viability, value or potential returns to investors.

DISCLOSURE OF PREVIOUSLY REPORTED MINERAL RESOURCE ESTIMATES

65. A Company may disclose an estimate reported previously in accordance with a categorization system other than UMREK Code, that was prepared by a person or persons other than the Competent Person preparing the disclosure, if the conditions listed below are met:

- a) The date of the previously reported estimates is specified,
- b) The relevance and reliability of the previously reported estimates provided,
- c) The disclosure states whether the estimates have used categories other than those used in Articles 12 and 17 to 36 of the UMREK Code, and if so provides an explanation of the differences.
- d) The disclosure contains a proximate cautionary statement to indicate that such an estimation cannot be merged with other estimations, and the consent has not been provided by the Competent Person, and
- e) The disclosure contains any more recent estimations or the current data available to the company.

This condition is used to explain, by using the same or other reporting codes, the estimations made by the same or a different company and when the previous Competent Person (if applicable) is not available anymore to authorise the new explanation.

GUIDELINES ON MATERIALITY

66. Companies may have several different mineral exploration and operation projects, such that it is impractical to appoint a different Competent Person for each project to prepare a report. In such cases, it is advised that a Competent Person reviews the mineral assets of a Company and provides an assessment of the appropriate level of aggregation or ‘accounting unit’ to be used in all subsequent reporting of the Company’s Mineral Resources and Reserves.

When reviewing the mineral assets to determine materiality, the Competent Person should consider both the size and number of assets in establishing the appropriate level of aggregation. There may be individual mining assets having disproportional contribution to all Mineral Resources or Mineral Reserves acquired from the company, and such assets need to be taken into consideration by the Competent Person for a separate reporting.

These guidelines are particularly relevant to cement companies for whom individual mining projects are not significant within the general value of the operating mines, when compared to operations of non-cement companies, and are producing industrial and construction raw materials. For other companies, the obligation of appointing a separate Competent Person to prepare a report on each mining asset, would be a plus in providing an effective security for investors.

Reporting could be on the basis of aggregation of mineral properties. For example, a multinational company may operate on a number of continents and therefore, may firstly wish to indicate the Mineral Resources and Reserves based on the geographical regions reflecting the regional structure of the company. A company with more than one line of business (cement,

aggregate, clay construction products), may prefer to divide the commodities related to these lines of business into geographical regions and then indicate the relevant Mineral Resources and Mineral Reserves.

TABLE 1. ASSESSMENT AND REPORTING CRITERIA CHECK LIST

Table 1 is a high-level check list of assessment criteria, and it is a guide to be used as a reference by those preparing a report on Exploration Results, Mineral Resources and Mineral Reserves. The check list is not a list of commands to be rigorously followed, but as always, it is a set of principles specifying relevance and materiality, and which information are to be made public. In the context of complying with the Principles of the Code, comment on the relevant sections of Table 1 should be provided on an ‘if not, why not’ basis within the Competent Person’s documentation and must be provided where required according to the specific requirements of Articles 19, 27 and 35 for significant projects in the Public Report. This is to ensure that it is clear to the investor whether items have been considered and deemed of low consequence or have yet to be addressed or resolved.

It is the Competent Person’s responsibility to take into account each one of the below-listed criteria and to decide which additional criteria are required to review a certain project or enterprise. The relative importance of the criteria will vary depending on the legal and economic conditions related to certain projects and certain times. However, it is important to indicate all the relevant issues that could significantly affect the reader’s understanding or interpretation of the reported results or estimations. This is particularly important in cases where insufficient or uncertain data affect the declaration of Exploration Results or the reliability of or confidence in the estimation of Mineral Resources and/or Mineral Reserves.

The order and grouping of criteria in Table 1 reflects the regular systematic approach related to exploration and evaluation. The table must be approached from left to right. In other words, it must be assumed that the criteria in the first column would also be applicable when reporting Exploration Results, Mineral Resources and Mineral Reserves. Similarly, the additional criteria on the Mineral Resource column are also applied for Mineral Reserve reporting.

The assessment should use scientifically valid, tested, and accepted definitions and terms to make reliable estimations for the project in question.

In some cases, it will be appropriate for a Public Report to exclude some commercially-sensitive information. A decision to exclude commercially-sensitive information would be a decision for the Company issuing the Public Report, and such a decision should be made in accordance with any relevant regulations in that jurisdiction. Such information could include Exploration Information, markets, product specifications, contract terms, commodity prices, and costs. In cases where commercially-sensitive information is excluded from a Public Report, the Public Report should provide summary information (for example, the methodology used to determine economic assumptions where the numerical value of those assumptions is commercially sensitive).

The UMREK Code TABLE 1
SECTION 1 General

Assessment Criteria	Exploration Results	Mineral Resources	Mineral Reserves
Purpose of Report	<ul style="list-style-type: none"> • Report should include a cover page and a Table of Contents, including a list of figures and tables. • Indicate for whom the report is prepared, specify whether the purpose is a partial or full assessment or other purpose, what scopes of work were carried out, effective date of the report and what is left to do. • The Competent Person must specify whether the document conforms to the UMREK Code. If a reporting standard or code other than the UMREK Code is being used, the Competent Person shall add an explanation of differences. 		
General Info on Project	<ul style="list-style-type: none"> • Summary explanation of project scope (for instance, historical sampling, advanced exploration, conceptual, Pre-Feasibility or Feasibility Study, Mining schedule for a future or ongoing mining facility shall include the geological condition, deposit type, commodity, project area, infrastructure and business agreements. 	<ul style="list-style-type: none"> • Brief explanation of key technical factors that have been considered. 	<ul style="list-style-type: none"> • Brief explanation of mining, processing/beneficiation and other key technical factors.
History	<ul style="list-style-type: none"> • Indicate the background of the project and/or related adjacent areas, include known results (type, quantity and development), former owners and changes for past exploration and/or mining activities. 	<ul style="list-style-type: none"> • Discuss the known or existing historical Mineral Resource estimates, reconciliation for the actual production updates to reported resources/reserves for past and current operations, and include their reliability and how 	<ul style="list-style-type: none"> • Compare the known or existing historical Mineral Reserve estimates and performance statistics with past and current operations, include their reliability and how they are related to UMREK

	<ul style="list-style-type: none"> Quote references for all data from other sources. 	<p>they are related to the UMREK Code.</p> <ul style="list-style-type: none"> Transparent description of former achievements and failures and explain why the project should now be considered potentially economic. 	Code.
Critical Plans, Maps, Diagrams	<ul style="list-style-type: none"> Include and quote reference to all important, more detailed maps and all related cadastral and other infrastructure properties, described in a site location map or map index and article. If the adjacent areas or urban areas have a significant effect on the report, their location and their sections containing joint mineral tenure must also be indicated on the maps. All information taken from other sources must be referenced. All maps, plans and sections indicated in this check list must be legible and should include explanations, coordinates, coordinate system, scale bar and north arrow. Diagrams and illustrations must be readable, with notes and explanations where necessary. 		
Project Location and Explanation	<ul style="list-style-type: none"> Explanation of Project location (country, province and closest town, coordinate systems and distances etc.). For each property, diagrams, maps and plans must be provided such that they indicate the locations of mineral exploration/mining rights, any previous or current work, any exploration and all main geological characteristics. 		
Topography and Climate	<ul style="list-style-type: none"> All issues related to the mining project (such as topography and climate), issues that could possibly affect mining activities must be indicated and explained. A general topographic-cadastral map must be ready to support the above explanation. 	<ul style="list-style-type: none"> A topographic-cadastral map with sufficient details to assist evaluation of eventual technical and economic viability. Known related climate risks must be indicated. 	<ul style="list-style-type: none"> A detailed topographic-cadastral map. Where possible, weather and ground conditions that must be mitigated, particularly for difficult ground conditions, dense vegetation and/or high-altitude areas.

Legal Aspects and Tenure	<ul style="list-style-type: none"> • <i>Included in the explanations below, the Competent Person should confirm legal tenure.</i> • <i>Type of the licensing body (e.g. exploration and/or mining) and the right of use for the properties related to these rights;</i> • <i>Main terms and condition of all existing agreements/protocols and the details of prospective ones (for instance, and not to be limited to these, privileges, partnerships, joint ventures, access rights, rents, historic and cultural areas, nature or national parks and environmental conditions, royalties, consents, permits, approvals or authorizations, other private or public investment areas;</i> • <i>Security of the tenure held at the time of reporting or reasonably expected to be granted, any obstacle to obtain the right of operation on site, and</i> • <i>Notification of any legal case that could affect mineral exploration rights, or a suitable negative statement.</i>
Personal introduction in projects and verification of data	<ul style="list-style-type: none"> • <i>Visiting dates of the designated prospect, mine site, laboratories or relevant infrastructure.</i> • <i>Meetings with people responsible for the reported project, their areas of responsibility and project related experiences.</i> • <i>Visit to the project site, preparing a report that lists observations.</i> • <i>What sections of the project are accessible for individual confirmation?</i> • <i>Lists of data used or referenced when preparing public reporting.</i>

SECTION 2 Sampling Techniques and Data (Criteria in this section apply to all succeeding sections.)			
Assessment Criteria	Exploration Results	Mineral Resources	Mineral Reserves
Sampling types	<ul style="list-style-type: none"> Sampling type, location and time, leading to the results to be reported, must be indicated. Sampling types include stream sediment, soil and heavy mineral concentrate samples, trench and pilot pit results, rock breaking and channel sample, drilling and boring, handheld XRF devices etc. Ground samples include previous works, mine dumps etc. Where possible, distance between samples must be indicated, and locations must be shown on coordinate maps, plans and sections with proper scales. 		
Drilling techniques	<ul style="list-style-type: none"> Drilling techniques may include core drilling, reverse circulation, percussion, rotary auger, down-the-hole hammer etc. These should be indicated in the report, and their details (e.g. core diameter) should be given. Measures taken to keep sampling at a maximum level of recovery and quality assurance of the samples must be indicated. 		
Drilling sampling	<ul style="list-style-type: none"> A detailed explanation must be given to indicate sampling is being properly recorded and results are being assessed. The report should particularly indicate if there is a relationship between grade and quality, acquired through sample collection, and sample bias (for instance, preferential gain/loss of fine/coarse material). 		
Logging	<ul style="list-style-type: none"> It must be confirmed whether the samples have been recorded with sufficient details to assist suitable Mineral Resource estimation, mining tests and metallurgy tests, and it must also be indicated whether record keeping is qualitative or quantitative. Core (or channel, trench etc.) photographs must be attached. 		
Other sampling techniques	<ul style="list-style-type: none"> Sampling type and quality (for instance, cut channels, grab samples etc.) and the measures taken to ensure representative capability of the samples must be indicated. By quoting reference to a coordinate system (to be indicated), precise location and unique numbering of each sample must be ensured. 		
Sub-sample techniques and sample preparation	<ul style="list-style-type: none"> For sampling of drill core, it must be indicated whether sampling was taken from cut or sawn or quarter, half or whole core. If sampling was done without a core, production pipes, sample or rotary split etc. and wet or dry split procedures must be indicated. For all sample types, the nature, quality and appropriateness of sample preparation techniques must be defined, and quality-control procedures adopted at all sub-sampling stages to maintain the representative capability of samples at a maximum level must be indicated. The measures taken to ensure representative capability of the material at the place of sampling must be indicated. 		

	<p><i>Appropriateness of the sample sizes to the particle sizes of the material must be defined. A statement is advised with regards to the security measures taken to ensure sample consistency.</i></p>	
Analysis data and laboratory research	<ul style="list-style-type: none"> • <i>The type, quality and appropriateness of the assay and laboratory procedures and whether the technique has been accepted in full or partially must be indicated. Attention must be paid to how the presented assay results relate to the estimated extractable metal or mineral content of the reserve.</i> • <i>Sample preparation and analysis can be carried out by internal or independent laboratories. The laboratories actually used for this must be defined in all reports. In any case, the accreditation of the laboratory (e.g., ISO standards, ISO 9000:2001 and ISO 17025, TÜRKAK etc.) and actual procedures used, including use of random distribution, internal and external standard samples and monitoring procedures for blank analysis and systematic deviation must be taken into consideration. In particular, a short note must be added to indicate whether sample analyses, used to support resource estimation, have been repeated by other laboratories.</i> 	
Verification of the results	<ul style="list-style-type: none"> • <i>It is recommended that independent or alternative personnel confirm the selected intersection points and twinned holes, deflections or duplicate samples are used.</i> 	
Data location	<ul style="list-style-type: none"> • <i>A statement is required with regards to the quality and reliability of certainty of surveys used to locate drill holes, trenches, mining works and other locations. Quality and adequacy of topographic control should be explained, and site plans should be given. The quality and adequacy of down-hole surveys should be explained.</i> 	
Data density and distribution	<ul style="list-style-type: none"> • <i>Data density must be given to report Exploration Results.</i> 	<ul style="list-style-type: none"> • <i>A statement must be given to indicate whether data density and distribution is sufficient enough to ensure geological and grade or quality continuity for Mineral Resource and/or Reserve estimation procedure and the applied categorizations, and if sample compositing has been made.</i> • <i>With regards to the deposit type, it must be explained if sampling is sufficient to define the mineralization.</i>
Reporting Archives	<ul style="list-style-type: none"> • <i>Primary data documentation, data input procedures, data confirmation, data storage (physical and electronic) must be provided to support report preparation.</i> 	
Audits or Reviews	<ul style="list-style-type: none"> • <i>Results of any audit or review of sampling techniques and data should be presented and discussed.</i> 	

SECTION 3 Reporting of Exploration Results

(Criteria listed in the preceding sections also apply to this section.)

Assessment Criteria	Exploration Results	Mineral Resources	Mineral Reserves
Mining rights and land ownership	<ul style="list-style-type: none"> • <i>Type, reference name/no., location and ownership, joint ventures, partnerships and similar agreements with third parties or material issues, historical areas, wildlife or national park and environmental conditions, conditions of other investment areas.</i> • <i>Security of the right of use at the time of reporting or reasonably expected to be given, known obstacles preventing the right of operating on site.</i> • <i>Layout plans of mining rights and ownership. Definition of a mine ownership in a technical report is not expected to be a legal opinion; it should rather be a brief and clear explanation of ownership, as perceived by the author.</i> 		
Exploration works carried out by other parties	<ul style="list-style-type: none"> • <i>Acknowledgement and appraisal of surveys carried out by other parties.</i> 		
Geology	<ul style="list-style-type: none"> • <i>Explanation of the nature, details and reliability of geological information (related to rock types, structure, alteration, mineralization, and areas known to be containing mineralization etc.). Explanation of geophysical and geochemical data. Reliable geological maps and sections should be available to support comments.</i> 		
Mineralogy /Mineralization	<ul style="list-style-type: none"> • <i>Definition, frequency, size and other characteristics of the minerals inside the ore. Effect of the secondary and economically non-valuable minerals on the steps of beneficiating the main mineral and the variability of each significant mineral within the deposit should be indicated.</i> 		
Data compositing (accumulation) methods.	<ul style="list-style-type: none"> • <i>In exploration result reporting, weighted average techniques, maximum and/or minimum grade cut (e.g. cutting of high grades), cut-off grades are generally important and must be stated. In places where composited intersections yield high-</i> 		

	<p><i>grade results over short lengths and low-grade results over longer lengths, the procedure used for such compositing must be specified, and some typical examples of such intersections should be given in detail. The Modifying Factors used for any type of reporting on metal equivalents should be clearly indicated.</i></p>		
<p>Relationship between mineralization widths and intercept lengths</p>	<ul style="list-style-type: none"> • <i>These relationships are particularly important when reporting Exploration Results. If the relative geometry of the mineralization to drill hole angle is known, its nature should be reported. If it is not known and only drill hole dimensions have been reported, this effect must be clearly stated (e.g. 'drill hole length, actual true width not known').</i> 		
<p>Diagrams</p>	<ul style="list-style-type: none"> • <i>Where possible, if the maps, plans and sections (scaled) and charts of intersections significantly clarify the report, then they should be included for any material survey being reported.</i> 		
<p>Balanced reporting</p>	<ul style="list-style-type: none"> • <i>If it is not practical to report in depth all Exploration Results, one should try to report both low and high grades and/or widths, so that Exploration</i> 		

	<i>Results will be representative.</i>		
Other available exploration data	<ul style="list-style-type: none"> <i>If other exploration data are meaningful and tangible, they should be reported as follows (not limited to them): geological observations, geophysical exploration results, geochemical exploration results, bulk samples - size and method of development, metallurgical test results, bulk density, underground water, geotechnical and rock characteristics, moisture content, potentially deleterious or contaminating conditions and characteristics.</i> 		
Additional works	<ul style="list-style-type: none"> <i>Nature and dimension of the planned future development (e.g. additional exploration). Descriptions of estimated environmental liabilities</i> 		

SECTION 4 Mineral Resource and Mineral Reserve Estimations and Reporting

(Criteria applicable to reporting groups as shown)

Assessment Criteria	Exploration Results	Mineral Resources	Mineral Reserves
Database integrity		<ul style="list-style-type: none"> Measures taken to ensure data are not corrupted between first collection of data and being used to estimate Mineral Resource, e.g., recording and database errors. Data verification and/or validation procedures used. 	
Geological interpretation		<ul style="list-style-type: none"> Definition of geological model and the inferences made from this model. Estimation procedure used to ensure continuity of mineralization, and discussion of the sufficiency of the given database. Discussing alternative interpretations and their potential impact on the estimation 	
Estimation and modelling techniques		<ul style="list-style-type: none"> Nature and appropriateness of the applied estimation techniques and key assumptions, including treatment of extreme grade values, compositing (included with length and/or density), interpolation parameters, maximum projection distance from data points and the final area of the estimation. Interpolation refers to estimation supported by sample data. Extrapolation refers to estimation stretching beyond areal borders of sample data. Validation refers to the existence of previous estimations and/or mining production losses and whether Mineral Resource estimation is taking these data properly into consideration. Assumptions made with regards to the recovery of by-products and other minerals which could possibly affect beneficiation of the ore. If block model interpolation is done, block size with relation to average sampling spacing and applied exploration. All assumptions used to establish selective mining units (e.g., non-linear kriging) modelling. Validation process, the checking process used, comparing model data with drill hole data, and use of reconciliation data, if any. Detailed explanation of tonnage and grade estimation (section, polygon, inverse distance, geo-statistical or other methods) and the methods used. Explaining how geological interpretation was used to control resource estimation. Discussing the basis of using or not using grade cutting or capping. If a computer method has been selected, explanation of the program and parameters used. Geo-statistical methods have multiple variations; therefore, these need to be explained in detail. The selected method has to be justified. Geo-statistical parameters (including 	

		<p><i>variogram) and conformity to geological interpretation need to be discussed. Experience from geo-statistical methods applied to similar deposits must be taken into account.</i></p> <ul style="list-style-type: none"> • <i>Variation of length (along the layer/seam direction or the other way), plan width and upper and lower limits of mineral resource as a sub-surface depth to the Mineral Resource.</i> • <i>All metals (or other components) to be treated (including those deemed to be dump material) must be indicated. A statement must be added to indicate that there are no other deleterious minerals that need to be separated or if otherwise describe a mitigation plan</i>
<p><i>Metal equivalents or other combined representation of other multiple components</i></p>		<ul style="list-style-type: none"> • <i>In any report containing reference to metal equivalents (or other content equivalents), the following minimum data must conform to these principles:</i> <ul style="list-style-type: none"> ○ <i>Individual assays for all metals included in the metal equivalent calculation;</i> ○ <i>Assumed commodity prices for all metals. (Companies should declare the actual assumed sales prices.) Discussion of the spot price is not sufficient when declaring the price used for calculating metal equivalent.)</i> ○ <i>For all metals, metallurgical test results and basis from which assumed recoveries have been derived (metallurgical test study, detailed mineralogy, similar deposits etc.);</i> ○ <i>A clear statement indicating it is the company's opinion that all the elements involved in metal equivalent calculation have a reasonable potential of recovery and sale; and</i> ○ <i>Calculation formula.</i> • <i>In many cases, the metal selected for equivalent based reporting, should be the one that has contributed most to the metal equivalent calculation. If this is not the case, a clear explanation for choosing another metal must be included in the report.</i> • <i>Estimations of metallurgical recoveries for each metal are particularly important. In many projects, metallurgical test data may not be available during the Exploration Results stage or may not be estimated with reasonable confidence.</i> • <i>In general, overall metal recoveries are calculated on the basis of a flowsheet showing the mass balance. This should be indicated by the testwork, and it should be shown that results are related to the ore body in question and is not just the sample treated.</i>

Cut-off grades and parameters		<ul style="list-style-type: none"> The basis of the applied cut-off grades or quality parameters must be included (if possible, including the basis of the equivalent metal formula). The cut-off grade parameter can also be expressed as economic value per block, instead of grade.
Tonnage Factor/In Situ Bulk Density		<ul style="list-style-type: none"> Must indicate whether assumed or determined. If assumed, the basis of assumptions. If determined, the method used, frequency of measurements, nature, size and representation reliability of samples.
Mining factors or assumptions		<ul style="list-style-type: none"> Appropriateness of the recommended mining method and mineralization type, minimum mining dimensions and internal (or external, if applicable) mining dilution to be indicated. It is not always possible to make detailed assumptions related to mining factors, when estimating Mineral Resources. Basic assumptions are required to determine reasonable prospects for eventual economic extraction. These would include access issues (boreholes, inclined shafts etc.), Methods and assumptions made for converting the Mineral Resource into a Mineral Reserve (through application of appropriate factors, through optimization or through preliminary or detailed design). Relevant design issues, selection, nature and appropriateness of mining parameters including pre-strip, access etc. and mining method. Geotechnical parameters and hydrogeological regime (e.g., pit slopes, stope sizes, dewatering methods and requirements etc.), grade control and assumptions made through drilling prior to production. Main assumptions made and the Mineral Resource model used for pit optimization (if appropriate). Mining dilution factors, mining recovery factors and minimum mining widths used and the infrastructure requirements of the mining methods selected. Historic reliability of performance parameters, if applicable.

		<p><i>geotechnical and hydrogeological parameters (pit slopes, stope dimensions etc.), infrastructure requirements and estimated mining costs. All assumptions must be clearly indicated.</i></p>	
<p>Metallurgical factors or assumptions</p>		<ul style="list-style-type: none"> <i>The proposed metallurgical process and its appropriateness to the style of mineralization. It is not always possible to make detailed assumptions related to metallurgical factors, when estimating Mineral Resources. Basic assumptions are required to determine reasonable prospects for eventual economic extraction. Availability of metallurgical tests, recovery factors, allowances for by-product credits or deleterious minerals or</i> 	<ul style="list-style-type: none"> <i>The proposed flowsheet and the appropriateness of these processes to the mineralization of the deposit. Whether the process is unique or incorporates well-tested technology previously used on the type of mineral deposit. Nature, quantity and representativeness of the metallurgical tests. Existence of bulk samples or pilot-scale test studies, and the capability of these tests and test results to represent the whole ore characteristics. Metallurgical recovery and any upgrading factors used and their relevance to those defined in test studies. All assumptions and allowances for deleterious minerals or elements affecting the process or their variability within the mine must be indicated. Environmental, health and safety risks for each section of the flowsheet and the planned mitigations to overcome these risks must be detailed.</i> <i>Tonnages and grades reported for Mineral Reserve, and whether they are related to the material delivered to the facility or to the resulting recovered material, must be indicated. Comments must be made with regards to the appropriateness of usage of the existing equipment in the facility within the recommended life of the mine.</i>

		<p><i>elements, infrastructure requirements and estimated processing costs can be given as examples. All assumptions should be clearly indicated. The exact definition of minerals, or the required assays to ensure appropriateness of the process, and all unwanted or possible by-products should be revealed, and appropriate process steps should be included in the flowchart.</i></p>	
Mineral Resource estimation for Mineral reserve conversion			<ul style="list-style-type: none"> • <i>Declaring the Mineral Resource estimation used as a basis for Mineral Reserve conversion. Clear statement whether Mineral Reserves have been reported as part (inclusive) of Mineral Resources.</i>
Cost and revenue factors		<ul style="list-style-type: none"> • <i>State basis for assumptions.</i> • <i>Currency, exchange rates and dates of estimates. See Table 2.</i> 	<ul style="list-style-type: none"> • <i>The derivation of the assumptions made in relation to the project capital and operating costs. Assumptions made for revenues including the main grade(s), metal or commodity prices, foreign exchange rates, transportation and treatment charges, penalties etc. The allowances made for royalties payable according to state and private rights. Basic cash flow inputs for a given period. See Table 2.</i>

Market assessment			<ul style="list-style-type: none"> • Demand, supply and stock situation for a particular mineral, consumption trends and factors that could possibly affect supply and demand. Defining the market framework, and following customer and competitor analysis, possible price and volume estimations for products and the basis for these estimations. Market assessment may indicate that minerals cannot be sold in the produced quantities; hence reserve estimations might be needed to be revised.
Other		<ul style="list-style-type: none"> • All obstacles such as land access, environmental or legal permits, potentially affecting mining. Location plans of mineral rights and titles. 	<ul style="list-style-type: none"> • Impacts of natural risk, infrastructure, environmental, legal, marketing, social or governmental factors on the possible viability of the project and/or classification and estimation of Mineral Reserves. Conditions of important ownerships and approvals related to the construction of the project, mining leases, discharge permits, government or statutory approvals etc. Environmental obligations. Site plans of Mine State rights and ownership.
Classification		<ul style="list-style-type: none"> • Basis of classification of the Mineral Resources into varying confidence categories. Whether all relevant factors have been properly included in the calculation, e.g., relative confidence in tonnage/grade calculations, continuity of geology and 	<ul style="list-style-type: none"> • Basis of classifying Mineral Reserves into various confidence classes. Does the resultant classification properly reflect the Competent Person's opinion on the deposit? The portion of the Probable Mineral Reserves derived from Measured Mineral Resources (if any).

		<p><i>distribution of metal values, quality, quantity and data. Does the resultant categorization properly reflect the Competent Person's opinion of the deposit?</i></p>	
Audits and reviews		<ul style="list-style-type: none"> • <i>Audit or review results of Mineral Resource estimations.</i> 	<ul style="list-style-type: none"> • <i>Audit or review results of Mineral Reserve estimations.</i>
Discussion of relative accuracy/confidence		<ul style="list-style-type: none"> • <i>Where applicable, a statement for relative accuracy and/or confidence for the Mineral Resource and Mineral Reserve estimation, by using an approach or procedure deemed to be appropriate the Competent Person. As an example, application of statistical or geo-statistical procedures to quantify the relative accuracy of the reserve within the stated limits of a confidence category or, if such an approach is not possible, qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimation. Is the statement related to global or local estimations, and if local, indicate the tonnages and volumes which need to be related to technical and economic assessment? Documentation should include the assumptions made and the procedures used. Where the statements of relative accuracy and confidence of the estimation are accessible, estimation should be compared to production data. Discussing the tests of the production sequence by conditional simulation on the uncertainty of the tonnages and grades of production increments.</i> 	

SECTION 5 Estimation and Reporting on Mineralization of Diamond and Other Precious Stones

Criteria listed in previous sections are to be applied, as shown, along with those applicable to reporting groups

Assessment Criteria	Exploration Results	Mineral Resources	Mineral Reserves
Exploration	<ul style="list-style-type: none"> Reports related to the collection and analysis of indicator minerals which can discriminate if they are from chemically/physically decisive potential diamond ore-bearing rocks such as garnet, ilmenite, chrome spinel and chrome diopside should be prepared by a properly authorised and accredited laboratory. 		
Sample collection	<ul style="list-style-type: none"> Sample type and purpose, for instance, core drilling for micro-diamond sampling and geology, large-diameter drilling to detect number of stones per unit volume and grade, or bulk samples to define average diamond value. Sample size, distribution and capacity to represent a commercial operation should be defined. 		
Sample processing	<ul style="list-style-type: none"> Facility type, treatment rate and accreditation. Reducing sample size. Bottom screen size, top screen size and re-crushing. Processes (dense media separation, grease recovery, X-ray, hand-sorting etc.). Process efficiency, tailings audit and granulometry analysis. Sample head feed and tailings particle granulometry. Concentration and minimum screen size per sample. Defining sample density. Process type for the laboratory, micro diamond recovery and method, for instance, caustic fusion or acidification. 		
Sample grade	<ul style="list-style-type: none"> The sample grade in this part of Table 1 has been used with carat content per mass, area or volume units. From the defined bottom sieve size, the above-sample grade should be reported as carats per dry metric ton and/or as carats per 100 dry metric tons. For placer deposits, defined sample levels can be accepted as carats per square meter or carats per cubic meter. In marine placer environments, reserve grades are indicated per square meter. Volume estimations could be wrong in quantitative terms, and mineral values and costs are used to form a basis for the estimation. 		
Sample characteristics	<ul style="list-style-type: none"> Micro and macro diamond sample results per facies. Local block estimations in cases of bulk sampling results or global sample grade per facies and defined resources. Spatial structure analysis and grade distribution. Stone size and number of stones distribution. Effect on sample grade through a change in the bottom cut-off screen size. Adjustments made to the size distribution for sample facility performance and commercial level performance (reserve Modifying Factors). If the diamond weights are too small to have any commercial value, they can be ignored in the report. This lower cut-off size (incidental) values must be indicated. 		

Grade estimation	<ul style="list-style-type: none"> Grade estimation (including geo-statistical) and interpolation techniques applied. Adjustments made to the size distribution for sample facility performance and commercial level performance.
Value estimation	<ul style="list-style-type: none"> Accreditation of the assessing person/institution. Details of the valued parcel, number of stones, carat and size distribution by using a standard progress of sieve sizes for each defined facies. Average assessment per sieve size. Value estimation through size. Diamond breakage assessment. Lowest cut-off sieve size and average \$/carat and \$/ton values. Minimum parcel size for representative valuation. Was a definite sub cut-off sieve value applied, or does it contain possible diamonds under the modelled sieve cut-off value? Assessment to answer this question.
Security and Integrity	<ul style="list-style-type: none"> Accredited process audits. Whether samples were sealed after recovery. Location of person making assessment, protection, delivery, cleaning losses, updating registered sample carat and stone quantity. Drilling samples washed before processing, for micro diamonds. Audit samples dealt with at alternative facilities. Results of waste controls. Retrieval of tracer simulants used for sampling and processing. Geophysical (logged) density and particle density. Cross validation of sample weights, wet and dry, with borehole volume and density, moisture factor.
Classification	<ul style="list-style-type: none"> Consider additional criteria to improve classification. Key elements for resource classification are geology and volume, grade, average diamond value and density estimations.

TABLE 2. STUDY ACCURACY RANGES FOR CAPITAL AND OPERATING COST ESTIMATES

Levels of effort required for components of Technical Studies and their attendant accuracy levels have been the subject of considerable debate and difference of opinion within the mining community.

The following table has been taken from the 2016 SAMREC Code and illustrates qualitatively the level of effort required for various types of Technical Studies:

General	Scoping Study	Pre-Feasibility Study	Feasibility Study
Resource Categories	Mostly Inferred.	Mostly Indicated.	Measured and Indicated.
Reserve Categories	None.	Mostly Probable.	Proved and Probable.
Mining Method and Geotechnical Constraints	Conceptual.	Preliminary options.	Detailed and optimised.
Mine Design	None or high-level conceptual.	Preliminary mine plan and schedule.	Detailed mine plan and schedule.
Scheduling	Annual approximation.	Quarterly to annual.	Monthly for much of payback period.
Mineral Processing	Metallurgical testwork.	Preliminary options.	Detailed and optimised.
Permitting- (Water, Power, Mining, Prospecting and Environmental)	Required permitting listed.	Preliminary applications submitted.	Authorities engaged and application submitted.
Social Licence to Operate	Initial contact with local communities.	Formal communication structures and engagement models in place.	Contracts/agreements in place with local communities and municipalities (local government).
Risk Tolerance	High.	Medium.	Low.

The UMREK Code Guide has drawn on the Third Edition of the *Mining Engineering Handbook* (2011) to provide quantitative standards to be used by the Competent Person in preparing Technical Studies.

As used in the table, ‘historic’ implies information that may be available and still relevant from similar projects. The term ‘benchmark’ could also be interchangeably used if current data from similar projects are used. ‘Contingency’ is an allowance for items not specified in scope that will be needed, or unanticipated changes in costs, as for example adverse foreign exchange consequences. Contingencies are additive to the cost estimates. Where the data on which the estimate basis are limited, contingency may be specified for the entire estimate. Where sufficient data exist, contingency should be set by facility or cost element (typically as a percentage addition), and a summary of all contingencies should be presented as part of the summary of capital and operating cost estimates.

In Technical Studies, the Competent Person should provide the basis for capital and operating cost estimates and an assessment of the level of accuracy for at least the categories listed below.

Capital Cost Category	Scoping Study	Pre_Feasibility Study	Feasibility Study
Basis of Estimate to include the following areas: Civil/structural, architectural, piping/HVAC, electrical, instrumentation, construction labor, construction labor productivity, material volumes/amounts, material/equipment, pricing, infrastructure	Order-of-magnitude, based on historic data or factoring. Engineering <5% complete.	Estimated from historic factors or percentages and vendor quotes based on material volumes. Engineering at 5 to 15% complete.	Detailed from engineering at 15% to 25% complete, estimated material take-off quantities, and multiple vendor quotations.
Contractors	Included in unit cost or as a percentage of total cost.	Percentage of direct cost by area for contractors; historic for subcontractors.	Written quotes from contractor and subcontractors.
Engineering, procurement, and construction management (EPCM)	Percentage of estimated construction cost.	Percentage of detailed construction cost.	Engineered estimate derived from first principles.
Pricing	FOB mine site, including taxes and duties.	FOB mine site, including taxes and duties.	FOB mine site, including taxes and duties.
Owner's costs	Historic estimate.	Estimate from experience, factored from similar project.	Estimate prepared from detailed zero-based budget.
Environmental compliance	Factored from historic estimate.	Estimate from experience, factored from similar project.	Estimate prepared from detailed zero-based budget for design engineering and specific permit requirements.
Escalation	Not considered.	Based on Company's current budget percentage.	Based on cost area with risk.
Accuracy Range	<u>± 50%.</u>	<u>± 25%.</u>	<u>± 15%.</u>
Typical contingency (allowance for items not specified in scope that will be needed)	25%.	15%.	10% (actual to be determined based on risk analysis).
Operating Cost Category	Scoping Study	Pre-Feasibility Study	Feasibility Study
Basis	Order-of- magnitude estimate.	Quantified estimates with some factoring.	Describes the basis of the estimate; detailed from zero-based budget; minimal factoring.
Operating quantities	General.	Specific estimates with some factoring.	Detailed estimates.



Unit costs	Based on historic data for factoring.	Estimates for labor, power, and consumables, some factoring.	Letter quotes from vendors; minimal factoring.
Accuracy Range	$\pm 35\%$.	$\pm 25\%$.	$\pm 15\%$.
Typical contingency (allowance for items not specified in scope that will be needed)	25%.	15%.	10% (actual to be determined based on risk analysis).

ANNEX.1 GLOSSARY

Certain words within the code, in general, are used when it is possible to give a unique meaning to them by certain commodity groups within the industry. A list of general terms and other terms which can be accepted as synonyms with regards to the purposes of this document have been listed below to avoid unnecessary repetition.

Term	Definition
assessment criteria	Factors used or assessed when performing a judgement, opinion, or analysis.
basis of estimate	Project management tool to document projected costs considering available historical and current cost and schedule data. The basis of estimate defines all aspects of a cost estimate at a set point in time.
benchmark	Comparing a selected metric against other measurements to provide a point of reference. Benchmarks can be based on experience, actual data, or regulatory requirements.
beneficiation	Any process that improves the value of the ore by removing the gangue minerals, which results in a higher grade product (concentrate) and a waste stream (tailings).
commercially sensitive information	Privileged or proprietary information that, if disclosed, could prejudice commercial interests.
commodity price	Market or negotiated price associated with the purchase or sale of a mineral or material.
company	A person, partnership, organization, or business that has a legal and separately identifiable existence that owns a mineral property or project, or that has an interest in a mineral property or project.
Competent Person	A Competent Person is a minerals industry professional registered as an appropriate member of a Recognised Professional Organization which has disciplinary processes including the powers to suspend or expel a member.
consent	Written permission provided by a Competent Person to publish documentation in the form and context in which it will appear on publication.
contingency	An allowance for items not specified in scope that will be needed, or unanticipated changes in costs, as for example adverse foreign exchange consequences. Contingencies are additive to the cost estimates. Where the data on which the estimate basis are limited, contingency may be specified for the entire estimate. Where sufficient data exist, contingency should be set by facility or cost element (typically as a percentage addition), and a summary of all contingencies should be presented as part of the summary of capital and operating cost estimates.
CRIRSCO	Committee for Mineral Reserves International Reporting Standards.
cut-off grade or quality	The lowest cut-off grade or quality of a mineral suitable for economic extraction. It can be defined on the basis of an economic assessment or over the physical or chemical properties describing an acceptable product specification.
deposit type	Defines the deposit type whether it is a magmatic, volcanic, hydrothermal, or sedimentary related type (e.g., porphyry, skarns, massive sulphides, epithermal, placer deposits etc.).

Term	Definition
diamond	Diamonds and other precious stones with same characteristics.
dilution	Low or zero grade (waste) material that is mined during the course of mining operations and thereby forms part of the Mineral Reserve.
discount rate	The interest rate used in discounted cash flow analysis to determine the net present value of future cash flows.
economic studies	Pre-Feasibility, Feasibility or life-of-mine plans that demonstrate the economic viability of Mineral Reserves. Scoping Studies that demonstrate the potential economic viability of Mineral Resources.
energy raw materials	Peat, Lignite, Coal, methane gas related to coal, Anthracite, Asphaltite, Bituminous Schist, Bituminous Shale.
exploration information	Includes Exploration Targets and Exploration Results. An Exploration Target represents a geological concept to be tested to determine the existence of a Mineral Deposit. Information to be sought by exploration is termed an Exploration Target. Information gained through exploration is termed Exploration Results.
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 tons and a range of grade or quality, relates to mineralization for which there has been insufficient exploration to estimate Mineral Resources.
Exploration Results	Exploration Results include data and information generated by mineral exploration programs that might be of use but which do not form part of a declaration of Mineral Resources or Mineral Reserves.
extrapolation	Extrapolation is the process of estimating, produces estimates at locations beyond known observations, and has a greater uncertainty than interpolation.
Feasibility Study (FS)	Refer to the UMREK Code Article 42 for the definition of FS. 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.
gangue minerals	The commercially worthless materials that surrounds a mineral having economic value in a mineral deposit.
governmental factor	One of a set of fundamental governmental criteria taken into consideration when evaluating the current or future regulations that may impact on a mine or project.
grade	Physical and chemical properties of samples or the product related to the relevant mineral inside the product. The term quality may have a special meaning for diamonds and other gem stones. When numbers are reported, the unit of measurement must be indicated.

Term	Definition
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.
industrial minerals	Solid geological materials which are mined for their commercial value, which are not fuel and are not sources of metals. Kaolin, Halloysite, Endellite, Anaxite, Bentonite, Montmorillonite, Baydilit, Saponite, Hectorite, Illite, Vermiculite, Allofan, Minalogite, Chlorite, Sepiolite, Gypsum, Anhydrite, Alunite, Halite, Calcium, Magnesium, Chlorine, Nitrate, Flor, Bromine and other salts, Boron salts (and other Boron minerals), Strontium salts, Barite, Wollastonite, Talc, Pyrophyllite, Diatomite, Olivine, Dunite, Sillimanite, Andalusite, Dumortiorite, Kyanite, Phosphate, Apatite, Asbestos, Magnesite, Huntite, Natural Soda Minerals (Trona, Nalcolite, Davsonite), Zeolite, Pumice, Pekstain, Perlite, Obsidian, Graphite, Sulfur, Fluorite, Cryolite, Sandpaper, Corundum, Diasporite, Quartzite, Quartzite and Quartz sand containing at least 80% SiO ₂ in its composition, Feldspate (Feldspar and Feldspathoid group minerals), Mica (Biotite, Muscovite, Sericite, Lepidolite, Phlogopite), Nepheline Syenite, Chalcedony (Chert).
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.
infrastructure	The basic physical and organizational structures and facilities needed for mine operation.
interpolation	Interpolation refers to estimation supported by sample data at points located between the data.
interpretation	Interpretation refers to explanation, clarifications and comments of the Competent Person about Mineral Resources and Mineral Reserves.
inventory reports	Non-public reports providing tonnages and grades for Mineral Deposits that may not consider the application of reasonable prospects for economic extraction.
life-of-mine plan	A time-phased mine plan that details the spatial locations, schedule, assumptions, and financial conditions under which the Mineral Reserves will be profitably extracted.

Term	Definition
metallic minerals	Gold, Silver, Platinum, Copper, Lead, Zinc, Iron, Pyrite, Manganese, Chrome, Mercury, Antimony, Tin, Vanadium, Arsenic, Molybdenum, Tungsten (Wolframite, Scheelite), Cobalt, Nickel, Cadmium, Bismuth, Titanium (Ilmenite, Rutile), Aluminum (Bauxite, Gibbsite, Bohemite), Rare earth elements (Cerium Group, Yttrium Group) and Rare earth minerals (Bastnasite, Monazite, Xenotime, Serit, Oyksenit, Samarskite, Fergusonite), Cesium, Rubidium, Beryllium, Indium, Gallium, Thallium, Zirconium, Hafnium, Germanium, Niobium, Tantalum, Selenium, Tellurium, Rhenium, Lithium.
metallurgy	Physical and/or chemical removal of relevant components from a bulk material. Methods used to prepare an eventually saleable product. Examples; sieving, flotation, magnetic separation, leaching, washing, (magnetic) roasting etc.
mineralization	Combination of minerals occurring in any single mine or a deposit or bulk material planned to be economically produced. It is aimed that this term is covered in accordance with each form, deposit category, formation type, formation or composition where mineralization can occur.
mining	All activities related to extract minerals and precious stones from the earth's crust with an open pit or underground workings through any method (for instance, stone pit, open pit, solution mining etc.).
Saleable Coal Reserves	For coal, the tonnage of coal, at specified moisture and quality, that is available for sale after beneficiation; similar definition can apply to industrial minerals and other bulk commodities.
Materiality Principle	Public Reports must contain all relevant information for the purpose of making a reasoned and balanced judgement regarding the Mineral Exploration Results, mineral processing results if any, Mineral Resources or Mineral Reserves being reported.
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 Resource. It may be converted to a Proven Mineral Reserve or to a Probable Mineral Reserve.
metal content/ mineral content	Amount of metal contained in a specified volume.
metal equivalent	A term used where mineralization that has several different metals of economic value has those different metal values converted to the corresponding value of a single metal. Metal equivalents must take into account commodity prices and metallurgical recovery. Metal equivalent calculations are often used to compare similar deposits that have slightly different metal ratios.
metallic deposits/ polymetallic deposits	Mineral deposits mined to extract metal elements.

Term	Definition
metallurgical factor	One of a set of fundamental metallurgical or processing criteria taken into consideration when evaluating the recoveries or processing routes for a mine or project.
mine closure	The period of time when active mining has ceased, and final decommissioning and mine reclamation is underway. Mine closure is considered to be complete when an entity has demonstrated to the satisfaction of the appropriate regulatory authorities that the mining project has reached a safe, stable, self-sustaining, and rehabilitated state.
(mineral) asset	An asset in material or physical form that has a long-term existence, or is acquired for the purposes of mining or processing activities, e.g., land, machinery, equipment, plant, etc.
Mineral Deposit	A Mineral Deposit (including coal, natural stone, diamonds, and industrial minerals) is an accumulation of mineral(s) of potential economic interest within estimated geological boundaries.
mineral property	An area of land that is held under exploration or mining rights. The definition includes multiple mineral claims or other documents of title that are contiguous or in such close proximity that any underlying Mineral Deposits would likely be developed using common infrastructure. Multiple mineral claims are often also referred to as a 'mineral project'.
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.
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.
mineralised waste	Waste rock that contains mineralization that grades below the currently economic cut-off.
mining factor	One of a set of fundamental mining criteria taken into consideration when evaluating the mining methods for a mine or project.
mining losses	Mining loss refers to any unrecoverable ore that must be left behind during mining, or any ore that cannot be recovered or processed through the process plant. Synonym for ore loss.
mining schedule	A practical, realistic, and optimal strategy for mineral extraction that has been developed after review of all material options and scenarios, including investment and scheduling alternatives (e.g., equipment sizes and placements), mineral definition (e.g., cut-off grades, dilution), access mechanics (e.g., shaft or ramp location, pit limits), and mineral and waste removal and haulage sequences.

Term	Definition
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.
peer	Person with in-depth experience with respect to a specific area, e. g. exploration, Mineral Resource estimation, Mineral Reserve estimation, metallurgical test work, economic analysis, etc.
Pre-Feasibility Study (PFS)	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.
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.
process flow sheet	A graphical representation of the unit operations required to produce a saleable product and to prepare tailings for suitable disposal. The unit operations are arranged sequentially beginning with the arrival of mineral at the processing facility and ending at shipment of the end product(s) off site and the discharge of tailings to the tailings facilities. The level of detail increases as projects progress. For a scoping study, the flow sheet may simply be a block flow sheet (flow chart) listing the proposed unit operations for the conceptual process design. For Pre-Feasibility and Feasibility Studies, the flow sheets should represent the process in sufficient detail to develop capital cost estimates required to meet the reported level of accuracy of the study. This includes such detail as pumps, number of equipment pieces and sizes, chutes, bins, and flow sheets for support areas such as water management, reagent storage and mixing, and tailings treatment.
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.
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.
Recognised Professional Organization (RPO)	Approved Recognised Professional Organizations (RPO) are included in a list promulgated by UMREK from time to time (see Annex 4 of the UMREK Code). A requirement for a professional organization to be recognised as an RPO is that it has enforceable disciplinary processes including the powers to suspend or expel a member regardless of the project's location. Competent Persons must belong to a RPO at the membership levels shown in Annex 4 of the UMREK Code.

Term	Definition
recovery	The percentage of material of initial interest that is extracted during mining and/or processing. A measure of mining or processing efficiency
reference point	Location where product is sold to the customer; may occur at the mine mouth, plant gate, port, or smelter.
remnant	A part or quantity of mineral or mineralization that is left after the greater part of the mineral or mineralization has been mined.
run-of-mine	Mined ore in its natural, unprocessed state prior to any beneficiation or processing activity being undertaken.
saleable product	The material or product that can be sold or marketed.
sampling	A sample taken from the outcrop surface of the rock or soil which shows physical, chemical, grade, petrographical properties after relative chemical analysis results.
segregation	Separation of the topsoil.
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.
socio-economic impact	A strong effect on the existing socio-economic status that will affect someone or something.
specialist consultants	An individual, entity, or firm that is highly skilled in and has detailed knowledge of a specific and restricted field.
stockpiles	A pile or storage location for bulk materials, usually low-grade and often below the operating cut-off grade.
supporting documents	Additional data or reports that supplement or provide back up to a key document.
Technical Studies	Technical Studies include Scoping Studies, Pre-Feasibility Studies, and Feasibility Studies. Other studies may include aspects of exploration, Mineral Resource estimation, mine planning including life-of-mine plans, metallurgical test work, environmental or social studies such as Environmental Impact Assessments and Environmental and Social Impact Assessments, etc.
The UMREK Code	The National Code for Public Reporting of Exploration Results, Mineral Resources and Mineral Reserves of Turkey
tonnage	An expression related to the quantity of the relevant material, independent from the measurement unit to be indicated (when numbers are being expressed).
Transparency Principle	The principle of transparency requires the readers of public reporting to be provided with sufficient information. Information needs to be clear, free from ambiguity, comprehensible to the reader or listener of the report; the information should not misguide the reader through deficiencies and negligence; the Competent Person must have a grasp of material information.
waste	Portion of the deposit with a very low or non-existent content of the minerals of interest, which is (sometimes) not put through the metallurgical process and must be discarded after being mined.

ANNEX. 2 COMPETENT PERSON'S CONSENT FORM

Reports describing the Exploration Targets, Exploration Results, Mineral Resources or Mineral Reserves reported by Companies, are under the responsibility of the Company acting through an Executive Board, and pursuant to Article 9 they are required to reflect the data contained within a report prepared by the Competent Person or Persons and the other supporting documents in a transparent manner and on an as-it-is basis. In addition, Article 9 requires, 'the report has to be issued after obtaining prior written consent of Competent Person or Persons about the apparent form and context'.

A Competent Person's Consent Form, containing the terms of the UMREK Code, has been developed to help Competent Persons and companies to conform to these requirements and also to emphasise the need for the Companies to obtain the prior written consent of the Competent Person, with regards to the form and context of the material to be included in the report.

Completion of a consent form is advised as a proper practice regardless of whether it is in the given format or in an equivalent format, and it ensures the previously signed required consent form can be acquired simply.

It is accepted as a leading practice to have a Competent Person's professional colleague to witness the consent form, and it is strongly encouraged.

The Competent Person's consent form or other documents related Competent Person's written consent must be retained by the company, and Competent Person must ensure that the consent form can be promptly provided by the company.

UMREK, 2018**(Letterhead Text of Competent Person or Employer)****Consent Form of Competent Person**

Requirements conforming to BIST or Articles related to Precious Minerals and
Precious Stones Market and to the UMREK Code Article 9

(Written Statement of Consent)

Report Name

(Insert the name or title of the report to be publicly declared)

(Insert name of the company releasing the report)

(Insert name of the deposit subjecting to the report)

If there is insufficient space, continue on the following page and sign it the same way as the original page.

(Report date)

STATEMENT

I/We,

(Insert full name (names))

confirm that I am the Competent Person with regards to report and:

- I have read and understood the requirements of the UMREK Code for Reporting Exploration Results, Mineral Resources and Reserves.
- I accept that I am the Competent Person defined by the UMREK Code 2018, having 7 years of experience that is relevant to the style of mineralization and type of deposit specified in the Report and to the activity for which I am accepting responsibility.
- I am a member of a 'professional organization', recognised by UMREK.
- I have reviewed the Report to which this Consent Statement applies.

To prepare the documents related to _____ *(insert name of the mine)* mine, basis of the report for the period ending on _____ *(Insert Resource/Reserve estimation date)*,

I am a full time employee of the below given company:

(Insert company name)

or

I/We am a consultant working for the below given company:

(Insert company name)

and I am working in connection with the below given company:

(Insert company name)

Including any issues that can be perceived as a conflict of interest by the investors, I have informed the Company that will submit the report about the exact nature of the relationship between myself and the Company.

I verify that the Report is fairly and accurately reflecting in the form and context in which it appears, the information in my supporting documentation relating to the Exploration Targets, Exploration Results, Mineral Resources and / or Mineral Reserves (select as appropriate).

CONSENT

I consent to the release of the Report and this Consent Statement by the directors of:

(Name of the company publishing the report)

Competent Person Signature:

Date:

Professional Membership (insert name of organization):

Membership No:

Witness signature:

Insert name and address of witness:



Additional deposits under the scope of the report, related to undersigned Competent Person accepting responsibility:

Additional Reports related to the deposit on which the undersigned Competent Person has accepted responsibility

Competent Person Signature:

Date:

Professional Membership (insert name of organization):

Membership No:

Witness signature:

Insert name and address of witness:

ANNEX. 3 COMPLIANCE STATEMENT

The required compliance statement forms should be as provided below (please ignore any non-applicable items).

With regards to public reporting, Exploration Targets, Exploration Results at the initial stages or with amended content, Mineral Resources or Mineral Reserves, or company annual reports;

- *If the required information are available in the report:
Information given in the report in relation to Exploration Targets, Exploration Results, Mineral Resources or Mineral Reserves are based on data compiled by (Insert name of Competent Person). The Competent Person in question is a member of a 'professional organization' recognised on BIST and UMREK web sites. (Select the appropriate one and indicate the name of the professional organization of the Competent Person and the membership level note of the Competent Person).*
- *If the required information is available in the report annex;
Information given in the report annex in relation to Exploration Targets, Exploration Results, Mineral Resources or Mineral Reserves are based on information compiled by (Insert name of Competent Person). The Competent Person in question is a member of a 'professional organization' recognised on BIST and UMREK web sites. (Select the appropriate one and indicate the name of the professional organization of the Competent Person and the membership level note of the Competent Person).*
- *If the Competent Person is a full-time employee of the company;
'(Insert name of Competent Person) is a full-time employee of the company.*
- *If the Competent Person is not a full-time employee of the company;
'(Insert name of Competent Person) is employed by (insert name of Competent Person's employer).*
- *The full nature of the relationship between the Competent Person and reporting company must be declared together with the details of the Competent Person. This declaration has to outline or clarify any issues which could be perceived by the investors as a conflict of interest.*
- *For all reports:
(Insert name of Competent Person) has sufficient experience about the pledged activity and the relevant mineral type or mineralization to be classified as a Competent Person as described in the UMREK Code. (Insert name of Competent Person) consents that the issues based on his knowledge are included in the report.*

For any Public Report that is based on a previously issued Public Report that refers to mineral Exploration Results, Mineral Resources or Reserve estimations:

In case where a Competent Person has previously provided a written consent for the findings to be included in a report, the company presenting this information to the market must indicate the report's name, date and the reference of the original resource.

- *Information has been taken from the report titled (report name) and issued on (insert date) and can be accessed on (web-site name) website. With regards to the data given in the original market announcement and in the Mineral Resource or Reserve estimations, the Company confirms that all monetary assumptions and technical parameters supporting the estimations in the related market announcement remain valid and they have not been changed materially.*

Company verifies that the findings of the Competent Person have not been changed in form and context from the original publication.

Companies must be aware that this exemption is not valid for subsequent information in the company annual report.

ANNEX 4 RECOGNISED PROFESSIONAL ORGANISATIONS (RPOS)

This is a list of professional organisations (RPOs, or Recognised Professional Organisations) and required membership levels for the purpose of the definition of a Competent Person in the UMREK Standards (Article 11).

To be recognised as an RPO, an organisation must satisfy the following criteria:

- 1 be a self-regulatory organisation covering professionals in the mining and/or exploration industry;
- 2 admit members primarily on the basis of their academic qualifications and professional experience;
- 3 require compliance with the professional standards of competence and ethics established by the organisation anywhere in the world (not just within the home jurisdiction of the organisation); and
- 4 have disciplinary powers, including the power to suspend or expel a member for breaches of professional standards of competence or ethics anywhere in the world.

The minimum membership classes required are consistent with those in other CRIRSCO codes and have been set at a level where the membership class is based on a system of peer scrutiny, including submission of documentation demonstrating experience and expertise and normally a professional interview, or where there is no interview UMREK would need to be satisfied that the system of peer scrutiny is sufficiently robust.

Organisations wishing to be considered as RPOs and added to the list below should write to the UMREK Secretary with full justification and documentary evidence that they meet the criteria outlined above.

RPOS RECOGNISED BY UMREK, AND MEMBERSHIP LEVELS REQUIRED	
Organisation	Minimum membership class required
YERMAM	Professional Member (PM-YERMAM)