KAZAKHSTANI ASSOCIATION
FOR PUBLIC REPORTING OF EXPLORATION RESULTS,
MINERAL RESOURCES AND
MINERAL RESERVES

KAZAKHSTAN CODE

FOR THE PUBLIC REPORTING OF EXPLORATION RESULTS,

MINERAL RESOURCES AND MINERAL RESERVES

(KAZRC)

June 2016

FOREWORD

1.The Kazakhstan Code for the Public Reporting of Exploration Results, Mineral Resources and Mineral Reserves (hereinafter referred to as KAZRC) has been prepared by the Kazakhstani Association for Public Reporting of Exploration Results, Mineral Resources and Mineral Reserves (hereinafter referred to as KAZRC Association) with the support of Committee of Geology and Subsoil Use of the Ministry for Investments and Development of the Republic of Kazakhstan and KAZRC Association founders.

KAZRC founders are: the Association of Production Geological Organizations of the Republic of Kazakhstan, the Republic Association of Mining and Mining-Metallurgical Enterprises, Joint-Stock Company National Exploration Company Kazgeology. KAZRC Association is open for acceptation of new members sharing the principles and conditions of its Charter.

The KAZRC sets up minimum requirements for Public Reporting by Kazakhstan mining and exploration companies (hereinafter referred to as Companies). KAZRC has been developed in accordance with general criteria adopted by the world mining community with the use of the International Reporting Template 2013 of CRIRSCO (Committee for Mineral Reserves International Reporting Standards. http://www.crirsco.com).

INTRODUCTION

2. In the KAZRC, all important terms and their definitions are highlighted in **bold** text. The guidelines are placed after the KAZRC clauses using *indented italics.* They are intended to provide assistance and guidance to readers for interpreting the application of the clauses in the KAZRC.

Indented italics are also used in Appendix 1 (*'Key Terms and Equivalents")*, and Table 1 ('*Check List of Assessment and Reporting Criteria*') to make it clear that they are also part of the guidelines for the application of the KAZRC.

Table 1 presents a check list that must be considered by a Competent Person in reporting Exploration Results, Mineral Resources or Reserves. Comment should be provided for each item by the Competent Person unless a valid reason for not doing so can be provided.

Appendix 1 contains a table of key terms and their equivalents, designed to avoid unnecessary duplication or ambiguity in the text.

Appendix 2 contains the names of recognized professional organizations of Kazakhstan the members of the KAZRC Association.

PRINCIPLES AND SCOPE

3. The main principles governing the operation and application of the KAZRC are transparency of information presented, materiality for users and competence of the authors of reports.

Transparency requires that the Users of Public Reports (investors, their professional advisers et al.) are provided with sufficient information, the presentation of which is clear and unambiguous, so as to understand a Report and not to be misled.

Materiality requires that a Public Report contains all the relevant information available at the moment of disclosure, which the Users would reasonably require, and reasonably expect to find in a Public Report, for the purpose of making a reasoned and balanced judgment regarding the

Exploration Results, Mineral Reserves or Mineral Resources being reported.

Competence requires that the Public Report be based on work that is the responsibility of suitably qualified and experienced persons who are subject to an enforceable professional code of ethics and rules of conduct.

4. 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.

The KAZRC indicates the required minimum standard for Public Reporting and is recommended as a minimum standard for other reporting. Companies are encouraged to provide information in their Public Reports which is as comprehensive as possible.

If Public Reporting is presented in brief, for instance in the form of a press release on results of ongoing exploration, reference to the initial materials prepared by a Competent Person should be given.

The KAZRC also applies to any reports that have been prepared for the purposes described in Clause 4, such as Environmental Statements, Information Memoranda, Expert Reports, and technical papers referring to Exploration Results, Mineral Resources or Mineral Reserves. These reports may also be prepared for the purpose of satisfying Kazakhstan government regulatory requirements.

For companies issuing concise or similar annual reports, or other summary reports, inclusion of all material information relating to Exploration Results, Mineral Resources and Mineral Reserves is recommended. In cases where summary information is presented it should be clearly stated that it is a summary, and a reference attached giving the source and location of the KAZRC compliant Public Reports or Public Reporting on which the summary is based.

It is recognised that companies may be required to issue reports to more than one regulatory jurisdiction, with compliance standards that may differ from the KAZRC. It is recommended that such reports include a statement alerting the reader to this situation.

Reference in the KAZRC to “documentation” is to internal company documents prepared as a basis for, or to support, a Public Report.

It is recognised that situations may arise where documentation prepared by Competent Persons (refer to Clause 10) for internal company or similar non-public purposes does not comply with the KAZRC. In such situations it is recommended that the document includes a prominent statement to this effect. This will make it less likely that non-compliant documentation will be used to compile Public Reports, since the KAZRC requires Public Reports to fairly reflect Exploration Results, Mineral Resource and/or Mineral Reserve estimates, and for supporting documentation to be prepared by a Competent Person.

Estimation of Mineral Resources and Mineral Reserves is inherently subject to some level of uncertainty and inaccuracy. The uncertainty and possible differences in the estimates should be discussed in the accompanying documentation and, where material, in Public Reports, and

reflected in the appropriate choice of Mineral Reserve and Mineral Resource categories.
5. The KAZRC is applicable to all solid minerals, for which Public Reporting of Exploration Results, Mineral Resources and Mineral Reserves is required by the relevant regulatory authorities, including the Kazakhstan Stock Exchange (KASE).

6. It is recognized that further review of the KAZRC will be required from time to time.

7. The KAZRC Standard Definitions should be considered in conjunction with Figure 1 in the KAZRC. In the text below, definitions are included in bold typeface. Defined terms (where referred to in other definitions) are underlined.

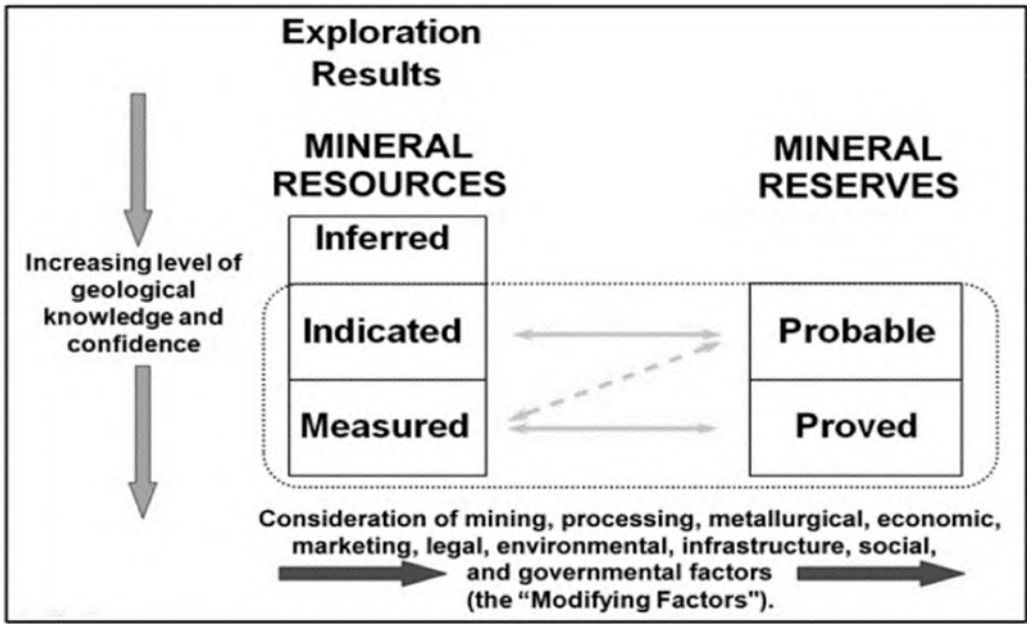

Figure 1. General relationship between Exploration Results, Mineral Resources and Mineral Reserves

COMPETENCE AND RESPONSIBILITY

8. A Public Report concerning a company's Exploration Results, Mineral Resources and/or Mineral Reserves is the responsibility of the company acting through its Board of Directors. Any such report must reflect the information and supporting documentation prepared by a Competent Person or Persons.

9. A Public Report which includes Exploration Results, Mineral Resources and Mineral Reserves must be based on documentation, prepared by (or under the direction of) a Competent Person or Persons.

10. A Company issuing a Public Report shall disclose the name(s) of the Competent Person or Persons, their qualifications, professional and corporate affiliations and relevant experience. The report shall be issued with the written consent of the Competent Person or Persons as to the form, content and date of issuing.

11. A Competent Person is a minerals industry professional who is a professional member of the recognized professional organization which has disciplinary processes including the powers to suspend or expel a member.
A Competent Person must have a minimum of five years relevant experience in the style of mineralisation or type of deposit under consideration and in the activity which that person is

undertaking

If the Competent Person is preparing a report 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.
Recognized professional bodies are listed in Appendix 2.
The key qualifier in the definition of a Competent Person is the word `relevant'. Determination of what constitutes relevant experience can be a difficult area, and common sense has to be exercised. 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 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 five 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 five 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 five 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 required 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 and Mineral Resource and Mineral Reserve 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. Some appreciation of extraction and processing techniques applicable to that deposit type is also important.

As a general guide, 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.

Estimation of Exploration Results, Mineral Resources and Mineral Reserves is a team effort as rule, involving several technical disciplines (for example, involving one person or team collecting the data and another person or team preparing the estimate). It is recommended that, where there is a clear division of responsibility within a team, each Competent Person and his or her contribution should be identified, and responsibility accepted for that particular contribution. If

only one Competent Person signs the Mineral Resource or Mineral Reserve documentation, that person is responsible and accountable for the whole of the documentation for the estimation. 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 against non-compliance with professional conduct standards made in respect of the professional work of a Competent Person will be dealt with in the context of the Code of Ethics or Rules of Conduct and Guidelines in force in a professional organization, to which the Competent Person belongs.
Non-compliance with relevant Codes of Ethics or Rules of Conduct and Guidelines in force will be prosecuted by the relevant disciplinary actions which under certain circumstances may include suspension of membership or expulsion.
The Competent Person and the Company, which releases public information on Exploration Results, Mineral Resources or Mineral Reserves of the Company, must be aware and observe requirements of the KAZRC and Kazakhstan Stock Exchange KASE and be responsible for completeness, materiality and quality of information, presented in the reports.

REPORTING TERMINOLOGY

12. 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.

Figure 1 sets out the framework for classifying tonnage and grade estimates to reflect different levels of geological confidence and different degrees of technical and economic evaluation.

***Mineral Resources** can be estimated mainly on the basis of geological information with some input from other disciplines.*

***Mineral Reserves**, which are a modified sub-set of the Indicated and Measured Mineral Resources (shown within the dashed outline in Figure 1), require consideration of the Modifying Factors affecting extraction, and should in most instances be estimated with input from a range of disciplines.*

Measured Mineral Resources may be converted to either Proved Mineral Reserves or Probable Mineral Reserves. The Competent Person may convert Measured Mineral Resources to Probable Mineral Reserves because of uncertainties associated with some or all of the Modifying Factors which are taken into account in the conversion from Mineral Resources to Mineral Reserves. This relationship is shown by the broken arrow in Figure 1. Although the trend of the broken arrow includes a vertical component, it does not, in this instance, imply a reduction in the level of geological knowledge or confidence. In such a situation these Modifying Factors should be fully explained.
Refer also to the guidelines to Clause 31.

REPORTING GENERAL

13. Public Reports concerning a company's Exploration Results, Mineral Resources and/or Mineral Reserves must include a description of the style and nature of mineralisation.

14. A company must disclose any relevant information concerning a mineral deposit that could materially influence the economic value of that deposit to the company. A company must

promptly report any material changes in its Mineral Resources and Mineral Reserves.

15. Companies must review and publicly report on their Exploration Results, Mineral Resources and/or Mineral Reserves at least annually, and the effective date of each Mineral Resource and Mineral Reserve statement must be shown. Companies are encouraged to provide information in their Public Reports, which is as comprehensive as possible. A company's economic interest in the project must be declared.

16. Throughout the KAZRC, certain words are used in a general sense when a more specific meaning might be attached to them by particular commodity groups within the industry. In order to avoid unnecessary duplication, the key terms are listed in Appendix 1 together with other terms that may be regarded as synonymous for the purposes of this document.

The use of a particular term throughout this document does not signify that it is preferred or necessarily the ideal term in all circumstances. A typical example is where mining is referred to as quarrying when stone and aggregates are involved. Competent Persons would be expected to select and use the most appropriate terminology for the commodity or activity being reported.

REPORTING OF EXPLORATION RESULTS

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

It is recognized that it is common practice for an entity to comment on and discuss its exploration strategy in terms of target size and type. Any such information relating to exploration target size must not be expressed in a way that could be confused as an estimate of Mineral Resources or Mineral Reserves. Any statement referring to potential quantity and grade of the target must be expressed as ranges and must include a detailed explanation of the basis for the assumptions made and procedures used to estimate ranges of tonnage and grade or quality, and extent. There must also be a proximate statement that the potential quantity and grade is conceptual in nature, that there has been insufficient exploration to define a Mineral Resource, and that it is uncertain if further exploration will result in the determination of a Mineral Resource. The detailed explanation of the basis for the statement of a target must specifically discuss the geological setting and exploration strategy, exploration activity already completed and the presence of or lack of the following attributes:

- mineralized outcrops and assays,
- surface geochemical and physical sampling results,
- surface and subsurface geophysical survey results, and
- drill holes, test pits and underground workings.

Proposed exploration activities designed to test the validity of an exploration target should be detailed and include the timeframe within which they are expected to be completed.

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.

This is common in the early stages of exploration when the quantity of data available is generally not sufficient to allow any reasonable estimates of tonnage and grade to be made. Examples include discovery outcrops, single drill hole intercepts or the results of geophysical surveys.
It should be made clear in public reports that contain Mineral Exploration Results that it is inappropriate to use such information to derive estimates of tonnage and grade. It is recommended that such reports carry a continuing statement along the following lines:
"The information provided in this report/statement/release constitutes Mineral Exploration Results as defined in the KAZRC, Clause 17. It is inappropriate to use such information for deriving estimates of tonnage and grade".

19. *If a Company reports Exploration Results in relation to mineralisation not classified as a Mineral Resource or Mineral Reserve, then estimates of tonnage and associated average grade must not be reported.*
Descriptions of exploration targets or exploration potential given in Public Reports, should be expressed so as not to misrepresent them as an estimate of Mineral Resources or Mineral Reserves

20. Public Reports of Exploration Results relating to mineralisation not classified as a Mineral Resource or Mineral Reserve must contain sufficient information to allow a considered and balanced judgement of the significance of the results. Public Reports of Exploration Results must not be presented so as to unreasonably imply that potentially economic mineralisation has been discovered.

REPORTING OF MINERAL RESOURCES
21. 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 subdivided into categories, in order of increasing geological confidence: Inferred, Indicated and Measured.
Portions of a mineral deposit that do not have reasonable prospects for eventual economic extraction must not be included in a Mineral Resource.
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 Modifying Factors.
The term 'reasonable prospects for eventual economic extraction' implies a judgement (albeit preliminary) by the Competent Person in respect of the technical and economic factors 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 mineralisation which, under assumed and justifiable technical and economic conditions, might, in whole or in part, become economically extractable.
Any material assumptions made in determining the 'reasonable prospects for eventual economic extraction' should be clearly stated in the Public Report.
Interpretation of the word 'eventual' in this context may vary depending on the commodity or

mineral involved. For example, for some coal, iron ore, bauxite and other bulk minerals or commodities, it may be reasonable to envisage 'eventual economic extraction' as covering time periods in excess of 50 years. However for many gold deposits, application of the concept would normally be restricted to perhaps 10 to 15 years, and frequently to much shorter periods of time.
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 some material that does not have reasonable prospects for eventual economic extraction. Such estimates of mineralisation would not qualify as Mineral Resources or Mineral Reserves under the KAZRC.

22. 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 Mineral Resource has a lower level of confidence than that applying to an Indicated Mineral Resource and must not be converted to a Mineral Reserve. It is reasonably expected that the majority of Inferred Mineral Resources could be upgraded to Indicated Mineral Resources with continued exploration.
The Inferred category is intended to cover situations where a mineral concentration or occurrence has been identified and limited measurements and sampling completed, but where the data are insufficient to allow the geological and/or grade continuity to be confidently interpreted. However, due to the uncertainty of Inferred Mineral resources, it should not be assumed that such upgrading will always occur.
Confidence in the estimate is usually not sufficient to allow the results of the application of technical and economic parameters to be used for detailed planning.
Caution should be exercised if this category is considered in technical and economic studies.

23. 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, but higher than that applying to an Inferred Mineral Resource. An Indicated Mineral Resource may only be converted to a Probable Mineral Reserve.
Mineralisation may be classified as an Indicated Mineral Resource when the nature, quality, amount and distribution of data are such as to allow confident interpretation of the geological framework and to assume continuity of mineralisation.
Confidence in the estimate is sufficient to allow the application of technical and economic parameters, and to enable an evaluation of economic viability.

24. 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.
Mineralisation 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 geology and the controls of the mineral deposit.
Confidence in the estimate is sufficient to allow the application of technical and economic parameters and to enable an evaluation of economic viability with a high level of confidence.

25. The choice of the appropriate category of Mineral Resource depends upon the quantity, distribution and quality of data available and the level of confidence that attaches to those data. The appropriate Mineral Resource category must be determined by a Competent Person or Persons.
Mineral Resource classification is a matter for skilled judgement, and Competent Persons should take into account those items in Table 1 which 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 Clauses 23 and 24, 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 Clauses 22 and 23 relating to geological and grade continuity, the guideline to the definition for Indicated Mineral Resources: 'Confidence in the estimate is sufficient to allow the application of technical and economic parameters and to enable an evaluation of economic viability.', which contrasts with the guideline to the definition for Inferred Mineral Resources: 'Confidence in the estimate of Inferred Mineral Resources is usually not sufficient to allow the results of the application of technical and economic parameters to be used for detailed planning' and 'Caution should be exercised if this category is considered in technical and economic studies'.
The Competent Person should take into consideration issues of the style of mineralisation, scale and cut-off grade when assessing geological and grade continuity.

26. Mineral Resource estimates are not precise calculations, being dependent on the interpretation of limited information on the location, shape and continuity of the occurrence and on the available sampling results. Reporting of tonnage and grade figures should reflect the relative uncertainty of the estimate by rounding off to appropriately significant figures and, in the case of Inferred Mineral Resources, by qualification with terms such as 'approximately'.
In most situations, rounding to the second significant figure should be sufficient. For example

10,863,000 tonnes at 8.23 per cent should be stated as 11 million tonnes at 8.2 per cent. 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.
To emphasise the imprecise nature of a Mineral Resource estimate, the final result should always be referred to as an estimate not a calculation.
Competent Persons are encouraged, where appropriate, to discuss the relative accuracy and/or confidence of the Mineral Resource estimates. The statement should specify whether it relates to global (whole of resource) or local estimates (a subset of the resource for which the accuracy and/or confidence might differ from the whole of the resource), and, if local, state the relevant tonnage or volume. Where a statement of the relative accuracy and/or confidence is not possible, a qualitative discussion of the uncertainties should be provided (refer to Table 1).

27. Public Reports of Mineral Resources must specify one or more of the categories of 'Inferred', 'Indicated' and 'Measured'. 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 tonnage and grade outside the categories covered by the KAZRC is not permitted.

28. Table 1 provides, in a summary form, a list of the main criteria which should be considered when preparing reports on Exploration Results, Mineral Resources and Mineral Reserves. These criteria need not be discussed in a Public Report unless they materially affect estimation or classification of the Mineral Resources.
It is not necessary, when publicly reporting, to comment on each item in Table 1, but it is essential to discuss any matters which might materially affect the reader's understanding or interpretation of the results or estimates being reported. This is particularly important where inadequate or uncertain data affect the reliability of, or confidence in, a statement of Exploration Results or an estimate of Mineral Resources and/or Mineral Reserves; for example, poor sample recovery, poor repeatability of assay or laboratory results, limited information on bulk densities etc.
If there is doubt about what should be reported, it is better to keep on the side of providing too much information rather than too little.
Uncertainties in any of the criteria listed in Table 1 that could lead to under- or over- statement of resources should be disclosed.

29. The words 'ore' and 'reserves' must not be used in stating Mineral Resource estimates (except in the context of common usage such as "iron ore" etc.) 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. If re-evaluation indicates that any part of the Mineral Reserves is no longer viable, such Mineral Reserves must be re-classified as Mineral Resources or removed from the Mineral Resource/Mineral Reserve statements.
It is not intended that re-classification from Mineral Reserves to Mineral Resources or vice versa should be applied as a result of changes expected to be of a short term or temporary nature, or where company management has made a deliberate decision to operate on a non-economic basis. Examples of such situations might be commodity price fluctuations expected to be of short

duration, mine emergency of a non-permanent nature, transport strike etc.

REPORTING OF MINERAL RESERVES

30. 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 (hereinafter referred to as PFS) or Feasibility (hereinafter referred as FS) 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 those portions of Mineral Resources which, after the application of all mining 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 viable project, after taking account of all relevant Modifying Factors.

In reporting Mineral Reserves, information on estimated mineral processing recovery factors is very important, and should always be included in Public Reports.

The term 'economically mineable' implies that extraction of the Mineral Reserve has been demonstrated to be viable under reasonable financial assumptions. What constitutes the term 'realistically assumed' will vary with the type of deposit, the level of study that has been carried out and the financial criteria of the individual company. For this reason, there can be no fixed definition for the term 'economically mineable'. However, it is expected that companies will attempt to achieve an acceptable return on capital invested, and that returns to investors in the project will be competitive with alternative investments of comparable risk.

In order to achieve the required level of confidence in the Mineral Resources and all of the modifying factors studies to Pre-Feasibility or Feasibility level as appropriate will have been carried out prior to determination of the Mineral Reserves. The study will have determined a mine plan that is technically achievable and economically viable and from which the Mineral Reserves can be derived.

At the same time a competent person should (wherever possible) bring to the attention of reader of the Public Report, prices for commercial products used in the valuation of product available for sale and to disclose the methodology for their determination. In cases where the end products are in accordance with the current contracts, product available for sale assessment should be carried out with the use of contract prices.

The term 'Mineral Reserves' need not necessarily signify that extraction facilities are in place or operative, or that all necessary approvals or sales contracts have been received. It does signify that there are reasonable expectations of such approvals or contracts. The Competent Person should consider the materiality of any unresolved matter that is dependent on a third party on

which extraction is contingent.
Any adjustment made to the data for the purpose of making the Mineral Reserve estimate, for example by cutting or factoring grades, should be clearly stated and described in the Public Report.
It should be noted that the KAZRC does not imply that an economic operation should have Proved Mineral Reserves. Situations may arise where Probable Mineral Reserves alone may be sufficient to justify extraction, as for example with some alluvial tin, diamond or gold deposits. This is a matter for judgement by the Competent Person

31. 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.

32. 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.

The style of mineralisation or other factors could mean that Proved Mineral Reserves are not achievable in some deposits. Competent Persons should be aware of the consequences of declaring material of the highest confidence category before satisfying themselves that all of the relevant resource parameters and Modifying Factors have been established at a similarly high level of confidence.

33. The choice of the appropriate category of Mineral Reserve is determined primarily by the relevant level of confidence in the Mineral Resource and after considering any uncertainties in the modifying factors. Allocation of the appropriate category must be made by the Competent Person.

The KAZRC 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 geological confidence for Probable Mineral Reserves is similar to that required for the determination of Indicated Mineral Resources. The level of geological confidence for Proved Mineral Reserves is similar to that required for the determination of Measured Mineral Resources. Inferred Mineral Resources are always additional to Mineral Reserves.

The KAZRC also provides for a two-way relationship between Measured Mineral Resources and Probable Mineral Reserves. This is to cover a 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 geological knowledge or confidence.

A Probable Mineral Reserve derived from a Measured Mineral Resource may be converted to a Proved Mineral Reserve if the uncertainties in the Modifying Factors are removed. No amount of confidence in the Modifying Factors for conversion of a Mineral Resource to a Mineral Reserve can override the upper level of confidence that exists in the Mineral Resource. Under no circumstances can an Indicated Mineral Resource be converted directly to a Proved Mineral Reserve (see Figure 1).

Application of the category of Proved Mineral Reserves implies the highest degree of confidence in the estimate, with consequent expectations in the minds of the readers of the report. These expectations should be borne in mind when categorising a Mineral Resource as Measured. .

34. Mineral Reserve estimates are not precise calculations. Reporting of tonnage and grade figures should reflect the relative uncertainty of the estimate by rounding off to appropriately significant figures. Refer also to Clause 26.

To emphasise the imprecise nature of a Mineral Reserve, the final result should always be referred to as an estimate not a calculation.

Competent Persons are encouraged, where appropriate, to discuss the relative accuracy and/or confidence of the Mineral Reserve estimates. The statement should specify whether it relates to global (whole of reserve) or local estimates (a subset of the reserve for which the accuracy and/or confidence might differ from the whole of the reserve), and, if local, state the relevant tonnage or volume. Where a statement of the relative accuracy and/or confidence is not possible, a qualitative discussion of the uncertainties should be provided (refer to Table 1 and to Clause 26.

35. Public Reports of Mineral Reserves must specify one or both of the categories of 'Proved' and 'Probable'. Categories must not be reported in a combined Proved and Probable Mineral Reserve 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, Mineral Reserves must not be aggregated with Mineral Resources.

Public Reporting of tonnage and grade outside the categories covered by the KAZRC is not permitted.

Mineral Reserves may incorporate material (dilution) which is not part of the original Mineral Resource. It is essential that this fundamental difference between Mineral Resources and Mineral Reserves is borne in mind and caution exercised if attempting to draw conclusions from a comparison of the two.
When revised Mineral Reserve and Mineral Resource statements are publicly reported they should be accompanied by reconciliation with previous statements. A detailed account of differences between the figures is not essential, but sufficient comment should be made to enable significant changes to be understood by the reader.

36. In situations where figures for both Mineral Resources and Mineral Reserves are reported, a statement must be included in the report which clearly indicates whether the Mineral Resources are inclusive of, or additional to the Mineral Reserves.

Mineral Reserve estimates must not be added to Mineral Resource estimates to report a single combined figure.

In some situations there are reasons for reporting Mineral Resources inclusive of Mineral Reserves and in other situations for reporting Mineral Resources additional to 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 inclusive of those Mineral Resources modified to produce the Mineral Reserves.'

or

'The Measured and Indicated Mineral Resources are additional to the Mineral Reserves.'

In the former case, if any Measured and Indicated Mineral Resources have not been modified to produce Mineral Reserves for economic or other reasons, the relevant details of these unmodified Mineral Resources should be included in the report. This is to assist the reader of the report in making a judgement of the likelihood of the unmodified Measured and Indicated Mineral Resources eventually being converted to Mineral Reserves.

Inferred Mineral Resources are by definition always additional to Mineral Reserves.

For reasons stated in the guidelines to Clause 33 and in this paragraph, the reported Mineral Reserve figures must not be added to the reported Mineral Resource figures. The resulting total is misleading and is capable of being misunderstood or of being misused to give a false impression of a company's prospects.

TECHNICAL STUDIES

37. A Scoping Study (hereinafter referred as SS) 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.

38. 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 Feasibility Study.

39. 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.

40. Table 1 provides, in a summary form, a list of the criteria which should be considered when preparing reports on Exploration Results, Mineral Resources and Mineral Reserves. These criteria need not be discussed in a Public Report unless they materially affect estimation or classification of the Mineral Reserves. Changes in economic or political factors alone may be the basis for significant changes in Mineral Reserves and should be reported accordingly.

Reporting of Mineralized Fill, Pillars, Low Grade Mineralisation, Stockpiles, Dumps and Tailings.

41. The KAZRC applies to the reporting of all potentially economic mineralized material. This can include mineralized 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 otherwise stated, all other clauses of the KAZRC (including Figure 1) apply.

Any mineralized material as described in this clause can be considered to be similar to in-situ mineralisation for the purposes of reporting Mineral Resources and Mineral Reserves. Judgements about the mineability of such mineralized material should be made by professionals with relevant experience.

If there are no reasonable prospects for the eventual economic extraction of all or part of the mineralized material as described in this clause, then this material cannot be classified as either Mineral Resources or Mineral Reserves. If some portion of the mineralized material is currently sub-economic, but there is a reasonable expectation that it will become economic, then this material may be classified as a Mineral Resource. If technical and economic studies have demonstrated that economic extraction could reasonably be justified under realistically assumed conditions, then the material may be classified as a Mineral Reserve.

The above guidelines apply equally to low grade in situ mineralisation, sometimes referred to as 'mineralized 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 also 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. Mineralized material in the course of being processed (including leaching), if reported, should be reported separately.

Reporting of Coal Exploration Results, Resources and Reserves.

42. Clauses 42 to 44 of the KAZRC address matters that relate specifically to the Public Reporting of Coal Exploration Results, Coal Resources and Coal Reserves. Unless otherwise stated, Clauses 1 to 41 of the KAZRC (including Figure 1) apply. Table 1, as part of the guidelines, should be considered persuasive when reporting on Coal Resources and Reserves.

For purposes of Public Reporting, the requirements for coal are generally similar to those for other commodities with the replacement of terms such as 'mineral' by 'coal' and 'grade' by 'quality'.

43. The terms 'Mineral Resource(s)' and 'Mineral Reserve(s)', and the subdivisions of these as defined above, apply also to coal reporting, but if preferred by the reporting company, the terms 'Coal Resource(s)' and 'Coal Reserve(s)' and the appropriate subdivisions may be substituted.

44. 'Marketable Coal Reserves', representing beneficiated or otherwise enhanced coal product where modifications due to processing have been considered in addition to mining factors such as dilution, may be publicly reported in conjunction with, but not instead of, reports of Coal Reserves. The basis of the predicted yield to achieve Marketable Coal Reserves should be stated.

Reporting of Diamond and Other Gemstone Exploration Results, Mineral Resources and Mineral Reserves .

45. Clauses 45 to 48 of the KAZRC address matters that relate specifically to the Public Reporting of Exploration Results, Mineral Resources and Mineral Reserves for diamonds and other gemstones. Unless otherwise stated, Clauses 1 to 41 of the KAZRC (including Figure 1) apply. Table 1, as part of the guidelines, should be considered persuasive when reporting Exploration Results, Mineral Resources and Mineral Reserves for diamonds and other 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'. The term 'quality' should not be substituted for 'grade,' since in diamond deposits these have distinctly separate meanings.

A number of characteristics of diamond deposits are different from those of, for example, typical metalliferous and coal deposits and 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.

46. Reports of diamonds recovered from sampling programs 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 economic extraction, some appreciation of the likely stone size distribution and price is necessary, however preliminary. To determine an Inferred 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, would be employed to provide larger sample parcels.

In order to progress to an Indicated Resource, and from there to a Probable 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 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.

47. Where Diamond Resource or Diamond 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 size sieve for micro-diamonds reported.

48. 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 per carat. Where the valuation is used in the estimation of Diamond Resources or Diamond 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.
Table 1 provides in summary form, a list of the main criteria which should be considered when preparing reports on Exploration Results, Mineral Resources and Mineral Reserves for diamonds and other gemstones.

Reporting of Exploration Results, Mineral Resources and Mineral Reserves for Industrial Minerals, Cement Feed Materials and Construction Raw Materials

49. Clauses 49 to 50 of the KAZRC address matters that relate to the Public Reporting of industrial minerals, cement feed materials and construction raw materials of all forms that are generally sold on the basis of their product specifications and market acceptance.

Unless otherwise stated, Clauses 1 to 41 of the KAZRC (including Figure 1) apply. Table 1, as part

of the guidelines, should be considered when reporting Exploration Results, Mineral Resources and Mineral Reserves for Industrial Minerals, Cement Feed Materials and Construction Raw Materials, except from guidelines that may be inappropriate when Mineral Resources and Reserves estimates are presented on an aggregated basis as described in Clause 50.

When reporting information and estimates for industrial minerals, cement feed materials and construction raw materials, all of the key principles and purpose of the KAZRC 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.
Some industrial mineral, 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 industrial minerals, cement feed materials and construction raw materials are the same as those for other deposit types covered by the KAZRC. 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 industrial minerals, 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 KAZRC.

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.

Other industry guidelines on the estimation and reporting of industrial minerals, cement feed materials and construction raw materials Resources and Reserves may be useful but will under no circumstances override the provisions and intention of the KAZRC 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 to industrial minerals,

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 non - strategic and non - government owned minerals.

50. Mineral Reserves and Resources of industrial minerals, 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.

In certain cases commercial sensitivity may prevent the publication of detailed information associated with Mineral Resources and Reserves for industrial minerals, cement feed materials and construction raw materials and in such cases this should be clearly justified in the report (either prepared for an individual site or on an aggregated basis).

Reporting of Unconventional Energy Resources.

51. Where the "Unconventional Energy" resource is a solid mineral, then the KAZRC can be applied for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves.

Reporting on Metal Equivalents.

52. The reporting of Exploration Results, Mineral Resources or Mineral Reserves for polymetallic deposits in terms of metal equivalents (a single equivalent grade of one major metal) must show details of all material factors contributing to the net value derived from each constituent.

The following minimum information must accompany any Public Report that includes reference to metal equivalents, in order to confirm to the principles of Transparency, Materiality and Competence, as set out in Clause 3:

- Individual grades for all metals included in the metal equivalent calculation,
- Assumed commodity prices for all metals,
- Assumed metallurgical recoveries for all metals and discussion of the basis on which the assumed recoveries are derived,

- A clear statement that it is the Company's opinion that all the elements included in the metal equivalent calculation have a reasonable potential to be recovered and sold, and
- The calculation formula used.

In most circumstances, the metal chosen for reporting on the equivalent basis should be the one that contributes most to the metal value. If this is not the case, a clear explanation of the reason for choosing another metal must be included in the report.

Estimates of metallurgical recoveries for each metal must be used to calculate meaningful metal equivalents.

Reporting on the basis of metal equivalents is not appropriate if metallurgical recovery information is not available or able to be estimated with reasonable confidence.

For many projects at the Exploration Results stage, metallurgical recovery information may not be available or able to be estimated with reasonable confidence. In such cases reporting of metal equivalents may be misleading.

TABLE 1

CHECK LIST OF ASSESSMENT AND REPORTING CRITERIA

Table 1 is a checklist and guideline that those preparing reports on Mineral Exploration Results, Mineral Resources and Mineral Reserves should use as a reference. The checklist is not prescriptive and, as always, relevance and materiality are overriding principles that determine what information should be publicly reported. It is, however, important to report any matters that might materially affect a reader's understanding or interpretation of the results or estimates being reported. This is particularly important where inadequate or uncertain data affect the reliability of, or confidence in, a statement of Exploration Results or an estimate of Mineral Resources and/or Mineral Reserves.

It is the responsibility of the Competent Person to consider all the criteria listed below and which additional criteria should apply to the study of a particular project or operation. The relative importance of the criteria will vary with the particular project and the legal and economic conditions pertaining at the time of determination.

A Public Report may omit information on any given item of the check list if this information was given in a previous Public Report and did not essentially change since that time. In such cases, a reference to the corresponding item of the previous Report should be attached.

A Public Report on developing mineral projects and on-going operations may contain a brief summary on most of the check list items provided that the summary includes all required information for understanding the project at its current stage

The order and grouping of criteria in Table 1 reflects the normal systematic approach to exploration and evaluation. Criteria in the first group 'Sampling Techniques and Data' apply to all succeeding groups. In the remainder of the checklist, criteria listed in preceding groups would often apply to succeeding groups and should be considered when estimating and reporting.

Criteria	**Explanation**
Sampling Techniques and Data ***(criteria in this group apply to all succeeding groups)***	
Sampling techniques	*- Nature and quality of sampling (e.g. cut channels, random chips etc.) and measures taken to ensure sample representivity.*
Drilling techniques	*- Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).*

Drill sample recovery	*- Whether core and chip sample recoveries have been properly recorded and results assessed.* *- Measures taken to maximise sample recovery and ensure representative nature of the samples.* *- Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*
Logging	*- Whether core and chip samples have been logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* *- Whether logging is qualitative or quantitative in nature. Core (or trench, channel etc.) photography.*
Sub-sampling techniques and sample preparation	*- If core, whether cut or sawn and whether quarter, half or all core taken.* *- If non-core, whether riffled, tube sampled, rotary split etc. and whether sampled wet or dry.* *- For all sample types, the nature, quality and appropriateness of the sample preparation technique.* *- Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* *- Measures taken to ensure that the sampling is representative of the in situ material collected.* *- Whether sample sizes are appropriate to the grain size of the material being sampled.* *- A statement as to the security measures taken to ensure sample integrity is recommended.*
Quality of assay data and laboratory tests	*- The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* *- Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.*
Verification of sampling and assaying	*- The verification of significant intersections by either independent or alternative company personnel.* *- The use of twinned hole deflections or duplicate samples*
Location of data points	*- Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* *- Quality and adequacy of topographic control. Locality plans*
Data spacing and distribution	- Data spacing for reporting of Exploration Results. *- Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Mineral Reserve estimation procedure(s) and classifications applied.* - Whether sample compositing has been applied.
Reporting Archives	*- Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) for preparing the report*
Orientation of data in	*- Whether the orientation of sampling achieves unbiased sampling of*

relation to geological structure	*possible structures and the extent to which this is known, considering the deposit type.* *- If the relationship between the drilling orientation and the orientation of key mineralized structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*
Reporting of Exploration Results ***(criteria listed in the preceding group apply also to this group)***	
Mineral rights and land ownership.	*- Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* *- The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.* *- Location plans of mineral rights and titles. It is not expected that the description of mineral title in a technical report should be a legal opinion but should be a brief and clear description of such title as understood by the author.*
Exploration done by other parties	- Acknowledgment and appraisal of exploration by other parties.
Geology	- Deposit type, geological setting and style of mineralisation. *- Reliable geological maps and cross sections should exist to support interpretations.*
Data aggregation methods	*- In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually material and should be stated.* *- Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* *- The assumptions used for any reporting of metal equivalent values should be clearly stated.*
Relationship between mineralisation widths and intercept lengths	*- These relationships are particularly important in the reporting of Exploration Results.* *- If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *- If it is not known and only the down-hole lengths are reported, there should be a clear statement to this effect (e.g. 'down-hole length, true width not known').*
Diagrams	*- Where possible, maps and sections (with scales) and tabulations of intercepts should be included for any material discovery being reported if such diagrams significantly clarify the report.*
Balanced reporting	*- Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*
Other substantive	*- Other exploration data, if meaningful and material, should be reported*

exploration data	*including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples - size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*
Further work	*- The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).*
Estimation and Reporting of Mineral Resources ***(criteria listed in the first group, and where relevant in the second group, apply also to this group)***	
Database integrity	*- Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.* - Data verification and/or validation procedures used.
Geological interpretation	*- Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* - Nature of the data used and of any assumptions made. - The effect, if any, of alternative interpretations on Mineral Resource estimation. - The use of geology in guiding and controlling Mineral Resource estimation. - The factors affecting continuity both of grade and geology.
Dimensions	*- The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*
Estimation and modelling techniques	*- The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters, maximum distance of extrapolation from data points.* *- The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* *- The assumptions made regarding recovery of by-products.* *- Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).* *- In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* *- Any assumptions behind modelling of selective mining units (e.g. non-linear kriging).* - Any assumptions about correlation between variables. *- The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.* *- Detailed description of the method used and the assumptions made to estimate tonnages and grades (section, polygon, inverse distance, geostatistical, or other method).*

	- Description of how the geological interpretation was used to control the resource estimates. *- Discussion of basis for using or not using grade cutting or capping. If a computer method was chosen, description of programmes and parameters used.* *- Geostatistical methods are extremely varied and should be described in detail. The method chosen should be justified. The geostatistical parameters, including the variograms, and their compatibility with the geological interpretation should be discussed. Experience gained in applying geostatistics to similar deposits should be taken into account.*
Moisture	*- Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*
Cut-off parameters	*- The basis of the adopted cut-off grade(s) or quality parameters applied, including the basis, if appropriate, of equivalent metal formulae.*
Mining factors or assumptions	*- Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It may not always be possible to make assumptions regarding mining methods and parameters when estimating Mineral Resources. Where no assumptions have been made, this should be reported.* *- In order to demonstrate realistic prospects for eventual economic extraction, basic assumptions are necessary. Examples include access issues (shafts, declines etc.), geotechnical parameters (pit slopes, stope dimensions etc.), infrastructure requirements and estimated mining costs. All assumptions should be clearly stated.*
Metallurgical factors or assumptions	*- The metallurgical process proposed and the appropriateness of that process to the type of mineralisation. It may not always be possible to make assumptions regarding metallurgical treatment processes and parameters when reporting Mineral Resources. Where no assumptions have been made, this should be reported.* *- In order to demonstrate realistic prospects for eventual economic extraction, basic assumptions are necessary. Examples include the extent of metallurgical test work, recovery factors, allowances for by-product credits or deleterious elements, infrastructure requirements and estimated processing costs. All assumptions should be clearly stated.*
Bulk density	*- Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.*
Classification	*- The basis for the classification of the Mineral Resources into varying confidence categories.* *- Whether appropriate account has been taken of all relevant factors. i.e. relative confidence in tonnage/grade computations, confidence in continuity of geology and metal values, quality, quantity and distribution of the data.* *- Whether the result appropriately reflects the Competent Person(s)' view of the deposit.*
Audits or reviews	- The results of any audits or reviews of Mineral Resource estimates.

Discussion of relative accuracy /confidence	*- Where appropriate a statement of the relative accuracy and/or confidence in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.* *- The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages or volumes, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* *- These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*
Estimation and Reporting of Mineral Reserves ***(criteria listed in the first group, and where relevant in other preceding groups, apply also to this group)***	
Mineral Resource estimate for conversion to Mineral Reserves	*- Description of the Mineral Resource estimate used as a basis for the conversion to a Mineral Reserve.* *- Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Mineral Reserves.*
Study status	*- The type and level of study undertaken to enable Mineral Resources to be converted to Mineral Reserves.* *- The KAZRC does not require that a final FS has been undertaken to convert Mineral Resources to Mineral Reserves, but it does require that studies to at least Pre-Feasibility level will have determined a mine plan that is technically achievable and economically viable, and that all Modifying Factors have been considered.*
Cut-off parameters	*- The basis of the cut-off grade(s) or quality parameters applied, including the basis, if appropriate, of equivalent metal formulae. The cut-off parameter may be economic value per block rather than grade.*
Mining factors or assumptions	*- The method and assumptions used to convert the Mineral Resource to a Mineral Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).* *- The choice of, the nature and the appropriateness of the selected mining method(s), the size of the selected mining unit (length, width, height) and other mining parameters including associated design issues such as pre-strip, access, etc.* *- The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling.* *- The major assumptions made and Mineral Resource model used for pit optimisation (if appropriate).* *- The mining dilution factors, mining recovery factors, and minimum mining widths used.* - The infrastructure requirements of the selected mining methods. *Where available, the historic reliability of the performance parameters.*
Metallurgical factors	*- The metallurgical process proposed and the appropriateness of that*

or assumptions	*process to the style of mineralisation.* *- Whether the metallurgical process is well-tested technology or novel in nature.* *- The nature, amount and representativeness of metallurgical test work undertaken and the metallurgical recovery factors applied.* - Any assumptions or allowances made for deleterious elements. *- The existence of any bulk sample or pilot scale test work and the degree to which such samples are representative of the ore body as a whole.* *- The tonnages and grades reported for Mineral Reserves should state clearly whether these are in respect of material to the plant or after recovery. Comment on existing plant and equipment, including an indication of replacement and salvage value.*
Cost and revenue factors	*- The derivation of, or assumptions made, regarding projected capital and operating costs.* *- The assumptions made regarding revenue including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, etc.* *- The allowances made for royalties payable, both Government and private.* *- Basic cash flow inputs for a stated period.*
Market assessment	*- The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.* *- A customer and competitor analysis along with the identification of likely market windows for the product.* - Price and volume forecasts and the basis for these forecasts. *- For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.*
Other	*- The effect, if any, of natural risk, infrastructure, environmental, legal, marketing, social or governmental factors on the likely viability of a project and/or on the estimation and classification of the Mineral Reserves.* *- The status of titles and approvals critical to the viability of the project, such as mining leases, discharge permits, government and statutory approvals.* *- Environmental descriptions of anticipated liabilities. Location plans of mineral rights and titles.*
Classification	*- The basis for the classification of the Mineral Reserves into varying confidence categories.* *- Whether the result appropriately reflects the Competent Person(s)' view of the deposit.* *- The proportion of Probable Mineral Reserves which have been derived from Measured Mineral Resources (if any).*
Audits or reviews	- The results of any audits or reviews of Mineral Reserve estimates.
Discussion of relative accuracy/ confidence	*- Where appropriate a statement of the relative accuracy and/or confidence in the Mineral Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the*

	relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate. *- The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages or volumes, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* *- These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*
Estimation and Reporting of Diamonds and Other Gemstones ***(criteria listed in other relevant groups also apply to this group; additional guidelines are available in the 'Guidelines for the Reporting of Diamond Exploration Results' issued by the Diamond Exploration Best Practices Committee established by the Canadian Institute of Mining, Metallurgy and Petroleum.)***	
Indicator minerals	*- Reports of indicator minerals, such as chemically/physically distinctive garnet, ilmenite, chrome spinel and chrome diopside, should be prepared by a suitably qualified laboratory.*
Source of diamonds	*- Details of the form, shape, size and colour of the diamonds and the nature of the source of diamonds (primary or secondary) including the rock type and geological environment.*
Sample collection	*- Type of sample, whether outcrop, boulders, drill core, reverse circulation drill cuttings, gravel, stream sediment or soil, and purpose, e.g. large diameter drilling to establish stones per unit of volume or bulk samples to establish stone size distribution.* - Sample size, distribution and representivity.
Sample treatment	*- Type of facility, treatment rate, and accreditation.* *- Sample size reduction. Bottom screen size, top screen size and re-crush.* *- Processes (dense media separation, grease, X-ray, hand-sorting etc.).* *- Process efficiency, tailings auditing and granulometry.* *- Laboratory used, type of process for micro diamonds and accreditation.*
Carat	*- One fifth (0.2) of a gram (often defined as a metric carat or MC).*
Sample grade	*- Sample grade in this section of Table 1 is used in the context of carats per units of mass, area or volume.* *- The sample grade above the specified lower cut-off sieve size should be reported as carats per dry metric tonne and/or carats per 100 dry metric tonnes. For alluvial deposits, sample grades quoted in carats per square metre or carats per cubic metre are acceptable if accompanied by a volume to weight basis for calculation.* *- In addition to general requirements to assess volume and density there is a need to relate stone frequency (stones per cubic metre or tonne) to*

	stone size (carats per stone) to derive sample grade (carats per tonne).
Reporting of Exploration Results	*- Complete set of sieve data using a standard progression of sieve sizes per facies. Bulk sampling results, global sample grade per facies. Spatial structure analysis and grade distribution. Stone size and number distribution. Sample head feed and tailings particle granulometry.* - Sample density determination. - Percent concentrate and undersize per sample. *- Sample grade with change in bottom cut-off screen size.* *- Adjustments made to size distribution for sample plant performance and performance on a commercial scale.* *- If appropriate or employed, geostatistical techniques applied to model stone size, distribution or frequency from size distribution of exploration diamond samples.* *- The weight of diamonds may only be omitted from the report when the diamonds are considered too small to be of commercial significance. This lower cut-off size should be stated.*
Grade estimation for reporting Mineral Resources and Ore Reserves	*- Description of the sample type and the spatial arrangement of drilling or sampling designed for grade estimation.* *- The sample crushing size and its relationship to that achievable in a commercial treatment plant.* *- Total number of diamonds greater than the specified and reported lower cut-off sieve size.* *- Total weight of diamonds greater than the specified and reported lower cut-off sieve size.* *- The sample grade above the specified lower cut-off sieve size.*
Value estimation	*- Valuations should not be reported for samples of diamonds processed using total liberation method, which is commonly used for processing exploration samples.* *- To the extent that such information is not deemed commercially sensitive, Public Reports should include:* • Diamonds quantities by appropriate screen size per facies or depth. • Details of parcel valued. • *Number of stones, carats, lower size cut-off per facies or depth.* • *The average $/carat and $/tonne value at the selected bottom cut-off should be reported in US Dollars. The value per carat is of critical importance in demonstrating project value.* • *The basis for the price (e.g. dealer buying price, dealer selling price etc.).* • An assessment of diamond breakage. • Minimum parcel size for representative valuation.
Security and integrity	*- Accredited process audit.* *- Whether samples were sealed after excavation.* *- Valuer location, escort, delivery, cleaning losses, reconciliation with recorded sample carats and number of stones.* *- Core samples washed prior to treatment for micro diamonds.* *- Audit samples treated at alternative facility.* *- Results of tailings checks.*

	- Recovery of tracer monitors used in sampling and treatment. *- Geophysical (logged) density and particle density.* *- Cross validation of sample weights, wet and dry, with hole volume and density, moisture factor.*
Classification	*- In addition to general requirements to assess volume and density there is a need to relate stone frequency (stones per cubic metre or tonne) to stone size (carats per stone) to derive grade (carats per tonne). The elements of uncertainty in these estimates should be considered, and classification developed accordingly.*
Estimation and Reporting of Uranium for In-Situ Leaching ***(criteria listed in other corresponding groups apply also to this group)***	
Principal ore-forming marker (identifier)	*Principal ore-forming marker to be obligatory considered in a Public Report is pinch outline of bed oxidation zone or ground oxidation zone*
Characteristics of estimation blocks	*Ore body portions, distinguished as estimation blocks, must be characterized by:* - *equal degree of exploration and knowledge of parameters, defining uranium Reserves tonnage and productivity;* - *uniformity of geological structure and approximately similar degree of variation of thickness, internal structure of ore bodies, material composition, basic quality parameters and metallurgical properties of the ore;* - *continuity of ore bodies mode of occurrence, some confinement of a block to a single structural unit (limb, hinge of fold, tectonic block, restricted by faults, similarity of filtration factor in ore intersections, presence or absence of local aquiclude (impermeable horizon) in block roof and/or bottom, etc.);* - *similarity of mining (geotechnical) conditions.*
Geophysical surveys	*Well logging is used at all stages of most of uranium deposit exploration, from prospecting to detailed and in-mine exploration and commercial development; reasonable set of the logging methods is determined based on specific geological conditions and modern capabilities of geophysical methods.* *In all drill holes (wells), gamma-ray logging is necessarily conducted. Expediency and conditions of applying other logging methods are defined by problems arising in the course of deposit exploration and specified for each case.* *At deposits in permeable rocks, for mapping permeable and impermeable horizons for delineation of shale interlayers in*

	permeable ore intervals, electric logging (by methods of apparent resistivity and SP logging) should apply. *In surveys in production, observation, monitoring and other wells in sites of trial ISL, in addition to gamma-ray logging, methods for direct determination of uranium grade can apply, for instance, neutron activation logging, temperature logging, induction (PI) logging.* *Special requirements apply to a deposit radiological survey (radiological zones, morphological features of ore body, ore blocks, metallurgical and lithological ore types, etc.).* *Based on core sampling data, with the sample assay for uranium and radium, types of radium haloes (residual, diffusion, migration) and features of their spatial spread within ore bodies must be investigated. Based on the investigations results, also zoning of deposits by radioactive equilibrium factor is carried out in areas, within which averaged values of the index can be taken for gamma-ray logging interpretation.*
Geotechnological (geological and mining) factors and assumptions	*Basic factors which must be reported on the uranium deposits mined by ISL method are as follows:* – *permeability and water content of ore-hosting rocks, filtration factor,* – *mineralogical ore composition, enabling breaking down by the solutions applied,* – *mineralogical composition of ore-hosting rocks,* – *productivity of horizon, ore body,* – *relationship between stratum differential permeability and uranium mineralisation distribution,* – *mineralisation thickness,* – *mineralisation depth,* – *uranium recovery factor,* – *subsurface (formation) water temperature* – *ore and hosting rock carbonate content at most 2% (of CO_2),* – *ore and hosting rock clay content at most 30%,* – *ore and hosting rock organic matter content at most 3%,* – *presence or absence of harmful impurities, for instance, chlorine, SO_4, Mo, V.*

APPENDIX 1. KEY TERMS AND EQUIVALENTS

Throughout the KAZRC, most of words are used in a general sense when a more specific meaning might be attached to them by particular commodity groups within the industry. In order to avoid unnecessary duplication, the key terms are listed below together with other terms that may be regarded as synonymous for the purposes of this document.

Key Term	**Synonyms and similar terms**	**Intended generalised meaning**
1	2	3
Mining	Quarrying	All activities related to extraction of metals, minerals and gemstones from the earth whether surface or underground, and by any method (e.g. quarries, open cast, open cut, solution mining, dredging etc.), as well as special mining activity types (in-situ leaching and melting, hydraulic mining, etc.).
Tonnage	Quantity, volume	An expression of the amount of material of interest irrespective of the units of measurement (which should be stated when figures are reported).
Grade	Quality, assay, analysis	Any physical or chemical measurement of the characteristics of the material of interest in samples or product. Note that the term quality has special meaning for diamonds and other gemstones.
Metallurgy	Processing, beneficiation, preparation, concentration	Physical and/or chemical separation of constituents of interest from a larger mass of material. Methods employed to prepare a final marketable product from material as mined. Examples include screening, flotation, magnetic separation, leaching, washing, roasting etc.
Recovery	Yield	The percentage of material of initial interest that is extracted during mining and/or processing. A measure of mining or processing efficiency.
Mineralisation	Mineral deposit, mineralized zone, mineralized material	Any single mineral or combination of minerals occurring in a mass, or deposit, of economic interest. The term is intended to cover all forms in which mineralisation might occur, whether by

		class of deposit, mode of occurrence, genesis or composition.
Mineral Reserves	Ore Reserves	'Mineral' is preferred under the KAZRC but 'ore' is in common use and is generally acceptable. Other descriptors can be used to clarify the meaning e.g. coal reserves, diamond reserves etc.
Cut off grade	Product specifications	The lowest grade, or quality, of mineralized material that qualifies as economically mineable and available in a given deposit. May be defined on the basis of economic evaluation, or on physical or chemical attributes that define an acceptable product specification.
Diamond	Gemstones	Diamonds and other gemstones with the same characteristics.
Competent Person	Qualified Person (Canada), Qualified Competent Person (Chile)	Refer to Clause 10 of the KAZRC for the definition of a Competent Person.
PFS	PFS	A PFS is a comprehensive study of a range of options for the technical and economic viability of a mining 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 open pit mining, is established, and an effective mineral processing is determined. It includes a financial analysis based on reasonable assumptions of the Modifying Factors, and the evaluation of any other relevant factors which would be 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
FS	Feasibility Study	A FS is a comprehensive technical and economic study of the selected 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 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 for mineral production.

APPENDIX 2. RECOGNIZED PROFESSIONAL BODIES

1. Public Society “The Professional Society of Independent Experts in Subsoil Use of the Republic of K