

The VALMIN Code 2005

FINAL

20 April, 2005

**CODE FOR THE TECHNICAL ASSESSMENT
AND VALUATION
OF MINERAL AND PETROLEUM
ASSETS AND SECURITIES
FOR
INDEPENDENT EXPERT REPORTS
(THE VALMIN CODE)**

COMPLIANCE WITH AND SUPPORT FOR THE VALMIN CODE

The Australasian Institute of Mining and Metallurgy

The current statement is as follows:

“The VALMIN Code is binding on members of The AusIMM when preparing public independent expert reports required by Corporations Law concerning mineral and petroleum assets and securities.”

To be approved or modified by AusIMM.

Australian Institute of Geoscientists

The current statement is as follows:

“The Australian Institute of Geoscientists supports the issue of The Code and accepts it as a statement of industry and professional best practice. In accordance with Australian Stock Exchange policy and practice, the AIG expects compliance with the Code by members of AIG.”

To be approved or modified by AIG.

Australian Stock Exchange

The current statement is as follows:

“Australian Stock Exchange supports the issue of the Code and brings any serious breaches of it to the attention of The AusIMM.”

To be approved or modified by ASX.

Australian Securities & Investments Commission

“The Australian Securities & Investment Commission (ASIC) refers to the VALMIN Code when reviewing mining and exploration prospectuses and takeover documents. ASIC regards the Code as indicative of best practice, and expects that when specialist mining terms used in the Code are contained in such documents that they will have the same meaning as in the Code. Compliance with the Code does not relieve issuers and others involved in the preparation of prospectuses and takeover documents from their broader disclosure obligations under the Corporations Act.”

As advised by ASIC, 30/3/2005

Mineral Industry Consultants Association

To be advised by MICA.

Minerals Council of Australia

The current statement is as follows:

“The Mineral Council of Australia has endorsed the Code’s use by members of The AusIMM when preparing Independent Expert Reports.”

To be approved or modified by MCA.

Petroleum Exploration Society of Australia

To be advised by PESA.

Securities Institute of Australia

To be advised by SIA.

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THE VALMIN CODE

PURPOSE OF THE CODE

1. The purpose of the VALMIN Code is to provide a set of fundamental principles and supporting recommendations regarding good professional practice to assist those involved in the preparation of Independent Expert Reports^{D14} that are public and required for the assessment and/or valuation of Mineral^{D20} and Petroleum^{D26} Assets and Securities^{D31} so that the resulting Reports will be reliable, thorough, understandable and include all the Material^{D16} information required by investors and their advisers when making investment decisions.

PREPARATION OF THE CODE

2. The Code has been prepared by the VALMIN Committee, a joint committee of The Australasian Institute of Mining and Metallurgy (The AusIMM), the Australian Institute of Geoscientists (AIG) and the Mineral Industry Consultants Association (MICA), with the participation of Australian Securities and Investment Commission (ASIC), Australian Stock Exchange Limited (ASX), the Minerals Council of Australia (MCA), the Petroleum Exploration Society of Australia (PESA), the Securities Institute of Australia (SIA) and representatives from the Australian finance sector.

The VALMIN Committee has prepared two earlier versions of the Code, the first being issued on 17 February 1995 (applicable from 1 July, 1995) and the second on 22 November 1997 (applicable from 1 April, 1998).

DISCLAIMER

3. The VALMIN Code provides guidance on matters that may be subject to the Australian Corporations Act 2001^{D8}, the associated Corporations Regulations, other provisions of Australian law, the published policies and guidance of ASIC and the Listing Rules^{D4} of ASX or of other recognised stock exchanges.

The Code applies in any particular circumstance only if, and to the extent that it is not inconsistent with the law, ASIC policy and guidance or the requirements of the relevant recognised stock exchange.

The Code does not constitute legal advice and does not claim to consider all matters that may be relevant to the preparation of an Independent Expert Report or the assessment and/or valuation of Mineral and Petroleum Assets and Securities. It is the responsibility of valuation practitioners to determine their legal obligations for each assessment and/or valuation and for the preparation of an Independent Expert Report and to seek legal advice when necessary.

Note: Procedural and mandatory clauses and paragraphs are in normal typeface, except that the word “**must**” is in **bold**, discretionary clauses and paragraphs are in *italics* and those definitions incorporated in the text of the Code are in **bold**. **(This note to be at the bottom of EVERY page of the text of the Code – but not of the Definitions and Acronyms)**

TERMINOLOGY

4. The use of the word “**must**” in a paragraph of a clause denotes a mandatory VALMIN Code requirement that **must** be complied with unless, in particular circumstances, to do so would be in breach of the law or the requirements of the relevant stock exchange.

The use of the word “should” in a paragraph of a clause indicates that some discretion may be employed with its application, depending on the particular circumstances of a Report and providing that the Code’s fundamental principles are not transgressed.

Definitions of key terms are listed at the end of the Code. In order to assist users of the Code, some Definitions that are associated with the Code’s fundamental principles are also incorporated in the text of the Code, printed in **bold**.

An initial or significant mention in the VALMIN Code of a Definition or Acronym is indicated by superscript. For example, Valuation^{D40} means that this term is defined in Definition number D40.

A word having a capital first letter generally indicates that it is a defined term.

The singular includes the plural and vice versa.

FUNDAMENTAL PRINCIPLES

5. The fundamental principles that this Code requires to be applied to the preparation of Public Independent Expert Reports are Materiality, Competence, Independence and Transparency as are described in detail in Clauses 15 to 31 and Definitions D16, D7, D13 and D38 respectively.

OBLIGATIONS OF VALUATION PRACTITIONERS

6. Effective as from ??/??/2005, The AusIMM, AIG and MICA expects mandatory application of this version of the VALMIN Code by their members when involved in the preparation of Public^{D28} Independent Expert Reports^{D14} required by legislation such as the Corporations Act^{D8} or by the Listing Rules of the ASX or of other recognised Stock Exchanges. The Code applies to Securities where the Technical Assessment^{D34} or the Valuation of underlying Mineral or Petroleum Assets is involved.
7. For those who are not members of Professional Associations^{D27} having an enforceable code of ethics, the VALMIN Code is recommended practice and should be adhered to when assessing and valuing Mineral or Petroleum assets and Securities, regardless of where or for whom Technical Assessments and/or Valuations of Mineral or Petroleum Assets are prepared or the location of the assets under consideration.
8. *The Code is not binding for Technical Assessments and Valuations for capital raisings for unlisted companies where the Corporations Act does not require the issue of a disclosure document. In such cases, project proponents should conform*

with the principles of the VALMIN Code or clearly indicate the extent to which the assessment or valuation does not.

9. Any departures from the VALMIN Code **must not** be such as to affect Materially the Expert's or a Specialist's Technical Assessment or Valuation and **must** be disclosed and justified in the Report.
10. Members of The AusIMM, AIG and MICA should understand that a complaint against them regarding a violation of the VALMIN Code may be investigated by the ethics committee of their Professional Association^{D27} and that, if substantiated, the results may be published in the relevant journal.

PURPOSES OF REPORTS

11. An "Independent Expert Report"^{D14} (Report) is a report as may be required by the Corporations Act or the Listing Rules of ASX or other recognised stock exchanges and for any other purpose that may involve the Technical Assessment and/or Valuation of Mineral or Petroleum Assets and/or Securities. It must be prepared by an Expert^{D10} who is Independent. The assistance of Specialists^{D10} who are also Independent may be necessary, depending on whether or not the Expert has expertise in all aspects of the Technical Assessment^{D34} and/or Valuation^{D40}, and on the magnitude of the task.

APPLICABILITY OF THE CODE

12. The VALMIN Code applies to the Technical Assessment and/or Valuation of Mineral and Petroleum Assets and Securities for any Independent Expert Report intended for public release and issued for a purpose regulated by the Corporations Act, Corporations Regulations, other provisions of Australian law, ASIC policy or by the Listing Rules of ASX and other recognised stock exchanges. These purposes include:
 - (a) Disclosure Documents^{D9}, such as a prospectus;
 - (b) compensation for compulsory acquisitions;
 - (c) protection of the rights of shareholders in transactions between associated parties;
 - (d) valuations involving acquisitions agreed to by shareholders;
 - (e) capital reductions;
 - (f) the valuation of a vendor's consideration in a public float;
 - (g) fairness and reasonableness reports relating to the acquisition or disposal of assets.

Other purposes for which the VALMIN Code, in whole or in part, should be followed are Technical Assessments and Valuations involved with:

- (h) the justification for raising debt or equity finance from an outside party, when not excluded by the provisions of Clause 8;*
- (i) facilitating negotiations between partners;*
- (j) the assessment of Government charges and taxes;*

- (k) estate settlements;*
- (l) internal corporate reports for directors;*
- (m) reports and expert witness statements provided for the purposes of litigation;*
- (n) stamp duty assessments on the transfer of Tenements;*
- (o) stamp duty valuations.*
- (p) assistance to receivers or managers engaged in the disposal of assets.*
- (q) reports for receivers and administrators.*
- (r) valuations for tax assessments.*
- (s) accounting and financial reporting.*

- 13** The VALMIN Code has been prepared to apply primarily to Technical Assessments and Valuations prepared in accordance with Australian law, circumstances, practices and terminology. Its fundamental principles and general approach to valuation have subsequently been widely accepted and have provided a basis for the preparation of mineral asset valuation codes tailored to suit the laws, circumstances and practices of South Africa, Canada and the United States of America.

In addition to such “country specific codes”, a set of standards and guidelines for the valuation of “mineral (but not petroleum) properties, projects and assets” to be a supplement to the International Valuation Standards, is being prepared by the International Valuations Standards Committee.

The VALMIN Code is considered to be compatible with these codes in terms of fundamental principles and general approach to the technical assessment and valuation of mineral and petroleum assets. Nevertheless, Experts and Specialists preparing technical assessments and valuations likely to be applied to assets and securities in countries other than Australia should be aware of and take note of the content of relevant codes, other than VALMIN.

TYPES OF REPORTS

- 14.** **Technical Assessment Reports^{D35}** involve the Technical Assessment of elements such as geology, mining or petroleum engineering, metallurgy, environmental impacts, capital and operating costs and actual and/or projected production, that may contribute to the actual and/or potential economic output from Mineral or Petroleum Assets^{D20D26} as may be required to assess the economic benefit of those assets and then to determine their Technical Value.

Valuation Reports^{D42} express an opinion as to the Value of a Mineral or Petroleum Asset or of a Mineral or Petroleum Security and its underlying Assets.

Fairness and Reasonableness Reports^{D11} evaluate the fairness and reasonableness of a transaction examined in a Report and express an opinion on whether the transaction involved is fair and/or reasonable.

MATERIALITY

15. Materiality is the overriding principle in determining whether or not information and data should be used in an Independent Expert Report. The term applies to both the nature of the items assessed in a Report and to their influence on the quantum of a Valuation.
16. **Material/Materiality^{D16} means that:**
 (a) the contents and conclusions of a Report;
 (b) any contributing assessment, calculation or the like; and
 (c) data and information
are of such importance that their inclusion or omission from a Technical Assessment or Valuation may result in a reader of the Report reaching a different conclusion than would otherwise be the case.
17. The Expert or Specialists^{D10} **must** state the sources of all Material information and data used in preparing a Report. Subject to any confidentiality or regulatory requirements and the need to obtain consents, adequate references to the relevant published and unpublished reports and records used **must** be provided

It may also be necessary to cite reports, data and records that were either available or known and were possibly Material but which were not used, and the reasons why they were not used.

COMPETENCE

18. **“Competence/Competent”^{D7} means having relevant education, qualifications, experience, professional expertise and holding appropriate licences (where required) so as to have a reputation that gives authority to statements made in relation to particular matters.**
19. The Assessment and/or Valuation of Mineral or Petroleum Assets and Securities requires a high level of Competence in the relevant technical and commercial disciplines. For example, Competence in geoscience, engineering, metallurgy, environmental assessment, finance, the law and commerce may all be required, depending on the nature of the Report involved. Therefore, a Competent Expert or Competent Specialists **must** be involved in the preparation of such Reports.
20. Experts and Specialists **must** be able to demonstrate to the Commissioning Entity^{D6} and those entitled to receive a Report that they are sufficiently Competent to prepare and/or contribute to the Report.
21. In order to ensure that a Report on Mineral or Petroleum Assets is competently prepared and authoritative, the Expert^{D10} **must** take overall professional responsibility for its preparation and contents. In many circumstances, it is unlikely that the Expert will be personally Competent in all areas required by the Report, in which case it is the Expert’s responsibility to ensure that Specialists^{D10} are engaged to prepare and be responsible for appropriate inputs to the Report.

See also Clause 37.

22. Only in exceptional circumstances, which must be described in the Report, may an Expert or Specialist who is not a Competent geologist with appropriate exploration experience carry out a Technical Assessment of Exploration Areas or Advanced Exploration Areas. The Valuation of such areas **must** not be undertaken without the involvement of such a geologist who **must** give written consent to the form and context in which such a Technical Assessment is used in deriving the Valuation. This consent **must** be included in the Report.
23. Either the Expert or Specialists who participate in the valuation of Mineral or Petroleum Securities (as opposed to the valuation of their related assets) or who provide a Vendor Consideration Opinion **must** hold appropriate licenses such as, for example, an Australian Financial Services Licence for those who value Australian securities

INDEPENDENCE

24. A Report will be an Independent Expert Report^{D14} only when the Expert and any contributing Specialists are Independent of the Commissioning Entity and are perceived and acknowledged to be so by the Commissioning Entity.

‘Independent’ and ‘Independence’ means that the Expert and/or Specialists must be able to satisfy any relevant legal tests of Independence and must be, and be perceived to be, willing and able to undertake an impartial assessment or valuation and to prepare an Independent Expert Report that is free of bias. To this end, the Expert and/or Specialists and their immediate families may not have a significant pecuniary or beneficial interest in all the relevant parties involved in the proposed transaction including:

- (a) the Commissioning Entity;**
 - (b) the owners or promoters (or parties associated with them) of any of the Mineral or Petroleum Assets or Securities that are the subjects of the Technical Assessment/Valuation to be prepared; or**
 - (c) the offerer and target companies in the case of takeover situations ,or in**
 - (d) any of the Mineral or Petroleum Assets or Securities that are the subjects of the Technical Assessment/Valuation; or**
 - (e) the outcome of the Technical Assessment/Valuation.**
25. In order to support a declaration of Independence or to enable interested parties (such as the Professional Associations of which the Expert or Specialists may be members) to assess whether or not they may be deemed to be independent, Experts and Specialists **must** disclose any interest that could be seen as being capable of compromising their Independence.

Such disclosures **must** be made as early as possible to the Commissioning Entity; must be included in the Report; and will not absolve an Expert or Specialist from the requirement to be Independent.

An Expert or Specialists having been previously engaged by the Commissioning Entity or an associated party to undertake a consulting or Valuation assignment, should not necessarily be considered as impairing their Independence, but should be assessed taking into account the facts of the matter.

Experts and Specialists should declare any of their previously undertaken Technical Assessments and Valuations relating to the Mineral or Petroleum Assets being assessed or valued.

26. *The basis of the considerations payable by the Commissioning Entity to an Expert or Specialists for the preparation of a Report should be disclosed in the Report.*

Fees, or the provision of further work to the Expert or Specialists **must** not be dependent on:

- (a) the outcome of the Technical Assessment/Valuation, or
 - (b) the success or failure of the transaction for which the Independent Expert Report was required.
27. The Expert and Specialists **must** maintain complete Independence from the Commissioning Entity and should avoid any situations that may be interpreted as compromising their Independence.

TRANSPARENCY

28. **“Transparency/Transparent”^{D38} literally means “easily seen through, clear and unmistakable, free from affectation and disguise.” For the purposes of the VALMIN Code, these qualities must apply to the data and information used as the basis of a Valuation or a Technical Assessment, including the assessment of resources/reserves, mining, processing and marketing issues, the valuation approach adopted and the methodology or methodologies used, all of which must be clearly set out in the Report.**

29. A Report will demonstrate its Transparency if it conforms with the content requirements set out in Clause 50 and if another Competent Expert or Specialist could value the Mineral or Petroleum Assets or Securities concerned at approximately the same level and/or make similar Technical Assessments if they

- (a) had access to the same information and data and
- (b) used the valuation approach adopted and the valuation methodology or methodologies as set out in the Report.

30. *A Value or Technical Assessment should not be provided unless a suitably objective Reasonableness Test^{D29} has been applied, based on facts and not on unsubstantiated opinion.*

31. The valuation process **must** be as transparent, objective and rigorous as the data and other Material information available to the Expert and Specialists will allow. The outcome of any Valuation will depend on the interaction of a number of key assumptions that the Expert and Specialists will need to make, all of which **must** be reasonable and disclosed in the Report.

All assumptions made regarding Material technical and commercial parameters, the risks associated with those assumptions and the valuation methods used **must** be set out clearly in the Report.

VALUATION METHODOLOGY

32. Decisions as to the valuation methodology or methodologies to be used are solely the responsibility of the Expert or Specialist and **must not** be influenced by the Commissioning Entity.

The Expert and Specialist **must** make use of valuation methods suitable for the Mineral or Petroleum Assets or Securities under consideration. Selection of an appropriate valuation method will depend on such factors as:

- (a) the nature of the Valuation;
- (b) the development status of the Mineral or Petroleum Assets and
- (c) the extent and reliability of available information.

The Expert or Specialist should disclose and discuss in the Report the selected valuation method(s) used having regard to each of these factors so that another Expert could understand the procedure used and, within reasonable bounds, arrive at a similar Valuation.

It may also be desirable to discuss why a particular valuation method has not been used.

If more than one valuation method is used and, in consequence, different Valuations result, the Expert or Specialist should comment on how the valuations compare and on the reason(s) for selecting the Value adopted.

(Valuation methodologies in common use are described in papers in the public domain. For example, the MICA website, www.mica.org.au and other such websites are sources of information on valuation methodologies.)

THE COMMISSIONING ENTITY

33. **“A Commissioning Entity”^{D6} is the organisation, company or person that commissions a Report.**
34. *The Commissioning Entity should make reasonable enquiries in order to establish that the Expert and/or Specialists are Competent in the field(s) in which they are to work and are experienced in the type of Mineral or Petroleum Assets or Securities to be assessed or Valued.*
35. *Some of the information that a Commissioning Entity holds concerning the subject matter of a Report may be regarded as confidential and therefore not appear in a public version of a Report, even though it may be taken into account in the Technical Assessment and/or Valuation.*

The Expert **must** request the Commissioning Entity to inform the Expert as to whether any information is confidential and the Expert **must** then so inform the Specialists.

The Expert and Specialist(s) **must** be satisfied that all relevant confidential information has been made available to them by the Commissioning Entity.

The Expert or Specialist(s) **must** indicate in the Report the extent to which the Technical Assessment or Valuation is attributable to information regarded by the Commissioning Entity to be confidential and has been used by the Expert or Specialist, but is not disclosed in the Report.

36. *The Commissioning Entity should present to the Expert and Specialists the results of any Public Independent Expert Reports it has commissioned with respect to the valuation of the assets or securities in question that could reasonably be considered to be Material.*

EXPERT AND SPECIALISTS

37. An Expert^{D10} **must** take overall responsibility for the physical preparation and contents of a Report.

An Expert may be either:

- (a) an Independent individual who prepares and accepts responsibility for a Report, or
- (b) a Representative Expert who is the nominated representative of a legally constituted body. He or she supervises the preparation of a Report and accepts responsibility for it on behalf of that body.

An “Independent individual” Expert must:

- (a) be Competent in and have had at least ten years of relevant and recent General Mining or Petroleum Experience^{D12} as may be appropriate;
- (b) have had at least five years of relevant and recent experience in the assessment and/or valuation of Mineral or Petroleum Assets or Securities, as may be appropriate;
- (c) hold appropriate licences;
- (d) be a member of an appropriate Professional Association having an enforceable code of ethics.

A “Representative Expert” should preferably have the same length of experience and degree of Competence as is required of an Independent individual Expert. If this is not the case, he or she must engage a “Senior Specialist” who:

- (a) is Competent and has had at least ten years of relevant and recent experience in the Mining or Petroleum Industries, as may be appropriate.
- (b) has had at least five years of relevant and recent experience in the the assessment and/or valuation of Mineral or Petroleum Assets, as may be appropriate.
- (c) holds the appropriate licences.
- (d) is a member of an appropriate professional association having an enforceable code of ethics.

“Specialists” are persons who may be retained by the Expert to prepare sections of Reports concerning matters about which the Expert is not personally Competent. Specialists must accept responsibility for the sections of the reports they prepare.

Specialists must be Independent and Competent in relevant technical, commercial or legal fields associated with the Mining or Petroleum Industries and have at least five years of relevant and recent experience in the fields on which they are to report.

Except in special circumstances that must be explained in the Report, the Expert and Senior Specialist must be members of appropriate relevant recognised Professional Associations having enforceable codes of ethics such as The AusIMM, AIG or MICA or their equivalents in countries other than Australia.

Experts and Senior Specialists **must** be familiar with the VALMIN and JORC Codes, the requirements of the Corporations Act, the public policies of ASIC, ASX and /or other recognised stock exchanges and court decisions that may be relevant to the Valuation being prepared.

- 38.** *An Expert should declare to the Commissioning Entity and Specialists should declare to the Expert the name of the Professional Association to which they belong and provide a signed declaration that they are subject to its code of ethics. These declarations should be retained by the Expert for inspection if required for a period of seven years.*
- 39.** *Experts and Specialists should obtain from the Commissioning Entity an indemnity under which they will be compensated for any liability:*
- (a) resulting from their reliance on information provided by the Commissioning Entity which is Materially inaccurate or incomplete. (Such an indemnity does not absolve Experts and Specialists from critically examining the information provided); or*
 - (b) relating to any consequential extension of workload through queries, questions or public hearings arising from the Report.*

A Report should disclose the nature and Material details of any such indemnity.

- 40.** *An Expert or Specialist should make written enquiries of the directors and/or management of the Commissioning Entity about prior relevant technical, valuation or similar assessment reports, particularly if it is considered that the material has not been sufficiently disclosed by the Commissioning Entity.*

The Expert and/or Specialist(s) should interview relevant personnel and review the Commissioning Entity’s database, responses to enquiries, reports, and all other information and data relevant to the Report.

- 41.** An Expert **must** not undertake or sign off on a Report unless the Commissioning Entity has confirmed in writing that:

- (a) full, accurate and true disclosure of all Material information will be made to the Expert;
- (b) all necessary access to the Commissioning Entity's personnel and records will be assured; and
- (c) the Independence of the Expert and Specialist(s) will be respected.

COMMISSIONING A REPORT

42. *The Expert and/or Specialists **must** enter into a written agreement with the Commissioning Entity, which may be by an exchange of letters, specifying the terms governing the preparation of a Report.*
43. *The written agreement should cover such matters as:*
- (a) *the scope and purpose of the Report;*
 - (b) *names, qualifications and relevant experience of the Expert and Specialists;*
 - (c) *an acknowledgement of the Independence and Competence of the Expert and Specialists;*
 - (d) *the Valuation Date^{D41} as agreed by the Commissioning Entity and the Expert;*
 - (e) *name(s) or title(s) of the subjects of the Report and of the Mineral or Petroleum Assets or Securities to be assessed or Valued;*
 - (f) *the basis for the cost of the Report which should be commensurate with the nature and complexity of the Valuation and **must** not be contingent upon the success or failure of any proposal or transaction assessed in the Report.*
 - (g) *the right of the Expert to refuse to provide an opinion or report where it is impossible or impractical to obtain sufficient accurate or reliable data or information;*
 - (h) *the Specialists to be engaged, the areas in which they are to contribute to the Report and their terms of engagement;*
 - (h) *the right and obligation of the Expert and Specialists to base findings on information within their own knowledge or acquired as a result of their own investigations, as well as on the information provided by the Commissioning Entity.*
 - (i) *advice on the extent to which the Expert and Specialist(s) are obliged to conform with the VALMIN Code*
 - (j) *a programme for the progress and completion of the Report including the dates for the completion of such significant intermediate activities as the provision of data and information by the Commissioning Entity; the review of data and information by the Expert and Specialist(s); and the issuing of a draft of the Report to the Commissioning Entity;*
 - (k) *notification that the Expert and Specialists may (and may be required to) keep records of discussions with the Commissioning Entity, a list of all documents to be referred to in the Report, copies of all Material source documents and of their due diligence notes;*
 - (l) *the liability indemnity referred to in Clause 39.*

INTENTION OF A REPORT

44. The intention of a Report is to gather, summarise and interpret the Material^{D16} information related to the Mineral or Petroleum Assets or Securities under consideration and to present clearly and accurately that information along with the opinions of the Expert^{D10} who is responsible for the Report and the Specialists^{D10} who contribute to it.

The outcome of a Valuation Report^{D42} will usually be the Fair Market Value^{D43} of a Mineral or Petroleum Asset or Security comprising a Technical Value^{D36} plus or minus, in some cases, a premium or discount to account for such factors as market, strategic considerations or special circumstances. However, some Assets, such as Exploration Areas may not have a Technical Value.

45. *The Expert should state in the Report its specific purpose (and that of any subsidiary reports), its terms of reference and if there are any limitations on its use for other purposes.*

DECLARATIONS

46. The Expert or Specialists **must** declare in a Report that it has been prepared in accordance with the VALMIN Code or, if it is not fully compliant, indicate those areas where it is not and explain why this is so.
47. A Report **must** state the names, qualifications, memberships of appropriate Professional Associations, relevant experience and, where applicable, appropriate licence details of the Expert and of each Specialist and **must** identify the nature and contribution of each of them to the Report.
48. *Where a Report is prepared within a corporation or firm, the name, the registered address and, if registered in Australia, the Australian Business Number (ABN), Australian Registered Body Number (ARBN) or Australian Company Number (ACN) and, where relevant, the Australian Financial Services Licence (AFSL) Number of the corporation or firm should be stated in it.*

The name of the Expert responsible for the Report **must** be included in it and he or she **must** personally sign the Report.

COST OF A REPORT

49. The cost of a Report will normally reflect the complexity of the Technical Assessment or Valuation, the amount of data available and the specific assessment or valuation difficulties encountered.

Time and cost constraints **must not** be permitted to compromise fundamental compliance with the requirements of the Code. Any restrictions so caused to the depth of analysis or the extent of detail required **must** be recorded in the Report.

CONTENT OF A REPORT

50. A Report is likely to be used by readers having different interests and depths of technical knowledge. For the sake of clarity, but recognising that the use of technical language is sometimes essential (in which case a glossary of terms may be helpful), the Report should be written in plain English and **must** contain all information which the Commissioning Entity and others likely to rely on the Report, including investors and their professional advisers, would reasonably require, and reasonably expect to find in the Report, for the purpose of making an informed decision about the subject of the Report. For example:
- (a) information regarding the sources of data used;
 - (b) a description of the relevant Mineral or Petroleum Assets, including their location, plant, equipment, infrastructure and ownership;
 - (c) an account of the Material history of the Mineral or Petroleum Assets.
 - (d) sufficient information to allow experienced investment analysts to understand how the Technical Assessment and/or Valuation was prepared, including details (summarised if appropriate) of any financial model used and of sensitivities to variation
 - (e) sufficient information about the valuation method(s) used so that another Expert can understand the procedures used and replicate the Valuation;
 - (f) a review of any other matters that are Material to the Report;
 - (g) a balanced, objective and concise statement of the Expert's review and conclusions so that an informed layman can have a clear understanding of the Mineral or Petroleum Assets or Securities concerned, their Value (if applicable) and of the attendant Risks;
 - (h) a concise summary setting out the key data and important assumptions made and the conclusions drawn by the Expert and/or Specialists, qualified if necessary according to the insufficient or inadequate information provisions of Clause 54.

DATA AND INFORMATION

51. *Detailed technical information and data should be included in the Report if their understanding is important to the Technical Assessment or Valuation. Explanations of unusual or new technical processes and activities that may be Material to the understanding of the Technical Assessment or Valuation should be included where commercial confidentiality considerations allow. The use is encouraged of tables, maps, graphical presentation and a glossary of terms and acronyms.*
52. Experts and Specialists **must** not rely uncritically on the data and other information provided, either by the Commissioning Entity or obtained otherwise. They **must** undertake suitable checks, enquiries, analyses and verification procedures to establish reasonable grounds for establishing the soundness of the contents and conclusions of the Report.
53. The data used **must not** have been rendered invalid due to the passage of time and consequent changes in such items as capital and operating cost structures, exploration techniques, geological interpretation and mining and metallurgical technologies.

54. Where it is impossible or impracticable to obtain sufficiently accurate or reliable data or information as the basis for a Technical Assessment or a Valuation, this **must** be stated in the Report by the Expert or Specialist. In these circumstances, the Expert or Specialist would be under no obligation to express an opinion and/or provide a valuation.

REFERRING TO EXISTING REPORTS

55. *The Expert or Specialists should ensure that summaries of existing reports that have been prepared by others are accurate and that any quotations from them are in the form and context intended by the original authors.*
56. A Report **must not** include a report or quotation that is the work of another person without his or her written (and not subsequently withdrawn) consent, unless such consent is either:
- (a) not required by law or
 - (b) the Report is within the public domain and not subject to copyright or
 - (c) the circumstances are such that, in the reasonable opinion of the Expert or Specialist, it would be impossible, impracticable or abnormally expensive to obtain.
57. The Expert or Specialist **must not** consent to reference being made to a Report prepared in accordance with the VALMIN Code in any document required under the Corporations Act or the Listing Rules of ASX or of another recognised stock exchange, unless the Report is included as part of that document, provided that, if making a reference only to a Report is permitted by law, on request the Commissioning Entity **must** provide:
- (a) a free of charge copy of the Report, or
 - (b) advise a readily accessible source of the Report such as an internet site available to the public where a dated version of the Report can be obtained or downloaded at no charge or a location where a copy of the Report may be viewed.

Such a Report **must** be current or be reasonably capable of being relied upon or be required for reference by those to whom it has been addressed and by their advisers.

NATURE OF VALUE

58. *In times of high commodity prices and/or buoyant share market conditions or in the cases of a forced sale or liquidation, the Fair Market Values^{D43} ascribed to Mineral or Petroleum Assets or Securities may be higher or lower than their Technical Values^{D36} and be more likely to change with time. A Report should take such factors into account, stating the results of the principal valuation method(s) used and disclosing the amount of, and reasons for, the difference between the Fair Market and Technical Values.*

As the Values of Mineral Assets and Securities are likely to fluctuate over time, the Expert or Specialist should ensure that the opinions expressed and the Valuation

provided is consistent with circumstances as at the Valuation Date^{D41}.

A Valuation Report **must** state the nature of the Value(s) determined and their Valuation Date(s)^{D41}.

59. *To the extent that it may affect the Valuation and if the available data permits, a range (high/low) of values should be determined and stated, reflecting any uncertainties in the data and the interaction of the various assumptions made. However, the range should not be so wide as to render the valuation meaningless.*

Similarly, the Report should include a sensitivity analysis showing the effects of changing the most significant assumptions.

In all cases, a preferred Value should be identified. If there are cogent reasons for not doing so, they should be stated in the Report.

60. Where the Expert or Specialist considers that a Mineral or Petroleum Asset (or a component of it) has no Value, or a Value that is immaterial to the total Valuation, or a negative Value, (that is, the Asset is a liability) this **must** be stated in the Report.
61. *In order to provide a common reference ground for comparing the valuations of different Assets, a separate value should be determined on a "100% pre-tax, all-equity, not already financed" basis*

ILLUSTRATIONS

62. *A Report should include appropriate photographs, plans, diagrams, graphs and maps, including one showing the geographical location of the subject of the Valuation in relation to a capital city or major town. If possible, this map should include a grid in Geocentric Datum of Australia (GDA) co-ordinates or its accepted equivalent in other countries or in latitudes and longitudes. Heights above sea level should be expressed with reference to Australian Height Datum (AHD) or its accepted equivalent in other countries.*

Maps in a Report should:

- (a) be based on a standard series map of a suitable scale, if one is available.*
- (b) show a bar scale and a direction arrow pointing north, designated as either magnetic, true or grid north. If grid north is shown, it should be in relation to either true or magnetic north.*
- (c) be readable and prepared so that no data is lost or obscured if the document is reproduced in black and white instead of in its original colour or if it has been reduced in size for printing*
- (d) be dated, carry the name of the persons or companies taking responsibility for their content and indicate the reports to which they apply. (This requirement also applies to plans and diagrams.)*
- (e) if showing exploration results, be of such a scale as to assist in the assessment of sampling and other exploration procedures.*

Graphs in a Report should include a graduated scale that is sufficiently detailed for intermediate readings to be taken with adequate accuracy.

ADMINISTRATION

63. *A draft copy of a Report should be given to The Commissioning Entity so that it can advise the Expert and Specialists as to any Material information not taken into account, the accuracy of the facts, any comments it may have on the assumptions made and those parts of the Report that it regards as being confidential.*
64. *The Expert and Specialists should keep contemporaneous records of discussions with the Commissioning Entity, a list of all documents referred to in the Report and copies of all Material source documents.*

SITE INSPECTIONS

65. *Where inspection of a Material Mineral or Petroleum Asset or Tenement^{D37} is likely to reveal information or data that is Material to a Report, the Expert, or, where relevant, the Specialist(s) **must** inspect it, providing it is practicable to do so.*

*If an inspection is not made, the Expert or Specialist **must** be satisfied that there is sufficient current information available to allow an informed appraisal to be made without an inspection.*

*The decision whether or not to conduct such an inspection **must** be made by the Expert or a Specialist and not by the Commissioning Entity*

An inspection should be made after the latest significant activity with respect to the subject matter of the Report has taken place. It should include any workings or treatment facilities such as a mine or process plant and associated infrastructure.

Where a Material Mineral Asset or Tenement has not been inspected, the Expert or Specialist should state in the Report the reason(s) for non-inspection.

66. *Inspection of Petroleum Exploration Areas^{D26} would not normally be required, except where the Expert considers Material elements of the database are incomplete, or require verification, or where the design, physical condition or performance of existing facilities are considered to be Material to the Valuation.*

TENEMENTS

67. *The status of Tenements^{D37} is Material and requires disclosure. Determination of the status of Tenements is necessary and **must** be based on a recent independent inquiry, either by the Expert or a Specialist or on a recent report by either a solicitor or a tenement specialist who would qualify as being a 'Specialist' as described in Definition D10.*
68. *A Report should contain a list of all Tenements Material to the Report, prepared by or on behalf of the Expert or Specialist, unless that information is provided in an accompanying report.*

Subject to Materiality, relevance and whether or not the information is provided elsewhere in the Report, the tenement list or an accompanying discussion should deal with the following topics:

- (a) Tenement type, reference name and/or number and area;*
- (b) whether the title has been formally granted;*
- (c) any attached impediments to title such as post granting approvals and permission (Such impediments should be described);*
- (d) whether an application or approval is pending and whether the application is subject to challenges*
- (e) whether the Tenement document has been issued and if it is in the possession of the holder;*
- (f) expiry and renewal dates (These can be provided in an accompanying report);*
- (g) past Tenement expenditure, future expenditure commitments, rents and rates;*
- (h) all Material obligations to Government(s) or to any other person or entity;*
- (i) ownership, including details of co-venturers and their interests;*
- (j) details of any indirect interests such as overriding royalties;*
- (k) details of liabilities, liens and encumbrances, including those relating to reclamation and rehabilitation;*
- (l) in the case of a mining lease, whether or not the Tenement has been subject to a cadastral survey;*
- (m) Native Title considerations;*
- (n) any other Material information.*

- 69.** *A Report should also list by title and location any contiguous and geologically related Tenements that may have a Material bearing on the value of the Tenements under consideration.*
- 70.** *The attribution of Value to Tenements in excess of any Value separately assessed on the basis of existing operations, future developments and/or their associated resources/reserves should be justified in detail. This especially applies to exploration tenements under application at the time of the Valuation.*
- 71.** *A group of exploration Tenements having exploration potential may have a “strategic” advantage or disadvantage and therefore have a value different to the sum of the Values of the individual Tenements. Where the Value of the aggregate is assessed to be higher or lower than the sum of the individual Values, the Expert or Specialist should state both Values and explain the reason for the difference.*
- 72.** *Maps, plans or other graphic information should be sufficient to illustrate the geology and other pertinent features, including the location of the Tenements under consideration. In particular, a Tenement map should show local landmarks and Tenement boundaries, dimensions, and location relative to nearby properties that may have a significant bearing on the potential of the Tenement.
[See Clause 62 for general advice on map preparation.]*
- 73.** *Where the potential of an exploration Tenement is based on the results of geophysical or geochemical surveys, some form of graphical interpretation, maps or tables showing the results and interpretations of the surveys should be included*

in the Report.

MINERALISATION, RESOURCES AND RESERVES

- 74.** The Expert or Specialist **must** comment on the quality and reasonableness of the resource and/or reserve estimates that may be provided, either by the Commissioning Entity or by any other entity that may have an interest in the outcome of a valuation and on the extent to which they have been reported in accordance with the current version of the JORC Code.

Where resource and reserve estimates are not considered to conform with the JORC Code, for example, if they were prepared before the JORC Code became applicable or for resources/reserves located in countries where other or no resource/reserve codes may apply to the extent that it is impracticable to report in accordance with the JORC Code, the reasons for having to base a Technical Assessment and/or Valuation on non-conforming resource and/or reserve estimates **must** be indicated in the Report. An assessment of the quality of such estimates with respect to JORC Code requirements **must** also be provided.

- 75.** All Material petroleum occurrences, resources and reserves within the boundaries of the tenements under consideration **must** be reviewed and reported on in accordance with the “Petroleum Reserves Definitions” published in 1997 by the Society of Petroleum Engineers (SPE) and the World Petroleum Congress (WPC) and the “Petroleum Resources Classification and Definitions” published in 2000 by the SPE, the WPC and the American Association of Petroleum Geologists (AAPG), as may be amended from time to time.

- 76.** *Asset assessment data and information that should be reported on include:*

- (a) geophysical and geochemical data;*
- (b) drill hole location, spacing, diameter, assay intervals, collar location and elevation;*
- (c) downhole survey method and data;*
- (d) number of samples used to define assay intervals;*
- (e) drilling and sampling methods;*
- (f) drill-sample recovery percentages*
- (g) tonnage factors (specific gravities);*
- (h) quality of geological sampling and assay data;*
- (i) assay laboratories and the analytical techniques used;*
- (j) geotechnical and hydro-geological factors that may affect mining practices or the safety of tailings dams and other structures;*
- (k) minor constituents of the ore likely to influence the viable exploitation of the deposit because of metallurgical or environmental concerns;*
- (l) ore body geometry, depth of cover, thickness and orientation*
- (m) assumptions made regarding mining cut-off grades, dilution, recovery and tonnage/grade;*
- (n) ore tonnage/grade information, if possible for a range of cut-off grades;*
- (o) estimation methods and parameters and process plant recovery;*
- (p) marketability of product(s).*

- 77.** *Any assay results included in a Report should be set out in a form considered to*

be most suitable by the Expert or Specialist. This could involve reporting all results, with sample widths or size in the case of bulk samples, or stating the mean as well as the weighted average assay of each mineralised zone, indicating clearly the method used to calculate these figures. Should relatively high values be reported, their context should be discussed and any relevant supporting data provided.

Samples used for assaying should be reliably identified as having been taken from specific locations and as being uncontaminated. If an Expert or Specialist has not personally taken the samples, the Report should state the steps taken to confirm the authenticity of the samples, the adequacy of the sampling procedures used and the reliability of the relevant reports.

Wherever considered by the Expert or Specialist to be appropriate and Material to the Report and the mineralisation being investigated, any inadequacies in the quality of sampling and assaying should be discussed.

78. *Where comparisons are made with geological situations at known mineral or petroleum occurrences, all relevant factors should be presented. Where a causal relationship such as continuity of geological structures is claimed, the Expert or Specialist should clearly show how the claimed continuity is considered relevant to the Technical Assessment or Valuation of the Mineral or Petroleum Asset or Tenement under consideration. Where a comparison has been made and no causal relationship is claimed, this should be stated.*
79. *The absence of mineralisation on adjoining or nearby Tenements may be as important as its presence. Therefore, the Expert or Specialist should disclose and explain the presence or absence of known mineralisation or exploration results, where such disclosure is Material to an objective Valuation of a Mineral Asset.*
80. *Where mineralisation or an indication of petroleum on a nearby property is noted in the Report, maps and/or sections should indicate the relationship of its geology to that of any Tenement that is the subject of the Report.*
81. *Assessment criteria that should be reported with respect to Petroleum Assets where specifically relevant include:*
 - (a) *well spacing;*
 - (b) *seismic control;*
 - (c) *well tests;*
 - (d) *analyses;*
 - (e) *drilling and sampling methods;*
 - (f) *production information;*
 - (g) *product quality and its relevance to the valuation;*
 - (h) *reserve estimation methods and assumptions.*
82. *When showing the location of petroleum wells on maps, standard industry well symbols should be used to denote the well status and the nature of any hydrocarbon indications encountered.*

MINING AND ORE PROCESSING

83. *Existing and/or proposed mining and process plant practices should be reviewed to establish the technical and economic feasibility of the operation under consideration at its existing and/or proposed scales. Matters to be reviewed include:*

- (a) mining and ore treatment methods;*
- (b) grade control, mining loss and dilution;*
- (c) ground conditions;*
- (d) mineralogical and metallurgical factors likely to affect process recovery;*
- (e) flow sheet design;*
- (f) variability of the ore body's physical and chemical properties;*
- (g) metallurgical recoveries;*
- (h) labour sources, requirements and productivity;*
- (i) operating practices;*
- (j) equipment availability, utilisation and performance;*
- (k) the likely effects of hydrological and climatic factors on construction and operating costs*
- (l) the technologies employed or to be employed;*
- (m) recent mining and ore treatment trial data (for proposed operations);*
- (n) the anticipated time required to achieve design throughput capacity;*
- (o) marketability of products*

84. *A Report that deals with mining and ore treatment should include:*

- (a) tonnage and grade of ore or other material mined or treated in appropriate time increments, both achieved and forecast over at least the first or next five years of operation, depending on whether the asset is proposed or operating, or for its anticipated life;*
- (b) tonnage and grade of ore or other material mined and contained metal, both achieved and forecast, reconciled, where practicable, with the categories of Mineral Resources and Ore Reserves, as defined in the current version of the JORC Code^{D15};*
- (c) a description of plant, technology and operating practices, together with actual or forecast process plant recoveries from mill feed to marketable products;*
- (d) comprehensive reasons to support any recommendation to reopen any facilities that are either on care and maintenance or have been abandoned.*

85. *Relevant prior performance in terms of:*

- (a) tonnage or volumes mined and/or processed;*
- (b) mineral and/or concentrate grade or coal and industrial mineral quality measured against tonnage and grade of depleted reserves; and*
- (c) concentrate production and quality*
- (d) production costs;*

should be reconciled with proposed performance estimates.

86. *The Expert or Specialists should report any environmental, land access, planning controls, restrictive zoning, Native Title or other land rights and rehabilitation matters that may have an impact on a Technical Assessment or Valuation. It is particularly important to identify those factors that could lead to delays in project development, curtailment of operations, higher cost of debt/equity or significant compensation payments.*
87. *A Report should disclose any Material existing or potential, statutory, legal, technical, environmental, commercial or socio-political obstacles to future exploration, development or production. Security and sovereign risk issues should also be addressed.*
88. *The Expert or Specialist should review and report upon any special factors relating to employee relations and/or work practices which may have an impact on a Technical Assessment or the Valuation of the Mineral or Petroleum Assets under consideration.*

CAPITAL AND OPERATING COSTS

89. *To the extent that it may affect a Technical Assessment or Valuation, the Expert or Specialist should review and report upon actual and forecast capital and operating costs for the effective estimated productive life of the Mineral or Petroleum Assets being valued.*
90. *The basis for income tax and other taxes, royalties, cost escalation and exchange rates used **must** be stated in the Report.*
91. *Cost estimates should take into account likely changes with time in factors such as work practices and productivity and be sufficiently detailed to assess whether they are realistic and achievable.*

Estimates of capital costs are likely to include those of:

- (a) feasibility and associated studies;*
- (b) acquisition;*
- (c) construction;*
- (d) working capital;*
- (e) sustaining capital;*
- (f) eventual shutdown and site restoration;*
- (g) contingency allowance.*

Estimates of operating costs are likely to include those of:

- (a) workforce employment;*
- (b) consumables;*
- (c) power, water and other services;*
- (d) on and off-site administration;*
- (e) environmental protection and monitoring;*
- (f) transport of workforce;*
- (g) product marketing and transport;*

- (h) taxes, royalties and other governmental charges;
- (i) contingency allowance.

92. *The Expert or Specialists should report the adequacy of and obstacles to accessing appropriate services and infrastructure in order to establish whether they are available or can be made available, and at what likely cost. Such services and infrastructure include power, water supply, transport, communications, work force accommodation, housing, medical services and waste and tailings treatment and/or disposal facilities.*

The Report should also review any access and terrain conditions that may affect the logistics of exploration and development. In the case of Petroleum Assets, distances to existing or proposed oil or gas pipelines or road haulage routes should also be reported.

93. *A Report should outline the forecast capital and operating cost estimates that have been adopted, together with supporting data and date reference.*

Capital and operating cost estimates should be compared with those of similar operations elsewhere, where available and if relevant.

Both capital and operating costs should be set out under broad functional headings and, where appropriate, in terms of some suitable unit such as “per ounce of gold produced” or “per tonne of annual plant throughput”, not just as total capital and total annual operating costs

COMPLETION AND COMMISSIONING

94. *The Expert or Specialist should report upon the likelihood of delays in completion or commissioning of projects; major changes in operating practices; or possible difficulties with new or scaled up technologies, especially where such factors may have a significant effect on the technical or financial viability of the Mineral or Petroleum Assets under consideration.*

REVENUE

95. *A Report should assess the Asset’s revenue stream over an appropriate period and set out the basis for price-related assumptions relating to its product(s), such as those concerning:*
- (a) *forecast product prices, smelter treatment and refinery charges, having regard to long term historical experience, current and forecast market conditions and the likely quantity and quality of product;*
 - (b) *penalty components of the product;*
 - (c) *variation in product price;*
 - (d) *size, nature and location of markets;*
 - (e) *sales volumes;*
 - (f) *cost escalation;*
 - (g) *exchange rates;*
 - (h) *hedging or forward sales contracts.*

96. *A reconciliation of the proposed production volume and product quality with likely market opportunities and available resources and/or reserves should be incorporated in the Report.*

FINANCE

97. *Depending upon the scope of the Report, the Expert or Specialist should report upon liabilities, commitments and financial exposures such as:*

- (a) creditors;*
- (b) provisions for superannuation, annual and long service leave entitlements;*
- (c) expenditure and commitments on exploration Tenements;*
- (d) under-insurance;*
- (e) the cost of environmental rehabilitation, especially if a property is to be abandoned;*
- (f) security deposits;*
- (g) income and capital gains taxes;*
- (h) material agreements and contracts, including development plans, sales contracts, joint venture agreements, project permits, and environmental and access requirements.*
- (i) redundancy commitments*

98. *The Valuation may be affected by the nature of the financing arrangements for a project. The Expert or Specialist should therefore review any such commitments made and the form of financing (for example, gold loans and commodity price hedging).*

99. *Depending upon the terms of reference of the Report, for some Mineral or Petroleum Assets the Expert or Specialists may need to assume an appropriate standard financing structure such as an all equity basis. For Development Projects and Operating Mines or Producing Fields, debt that has been or will be drawn down should be taken into account in the Valuation.*

100. *The basis for and nature of any consideration or benefit payable to any vendor, promoter or provider of seed capital, and of any conditions involved, should be assessed and quantified in a Valuation.*

SHAREMARKET AND ECONOMIC CONDITIONS

101. *General share market and economic conditions may influence the value of Mineral or Petroleum Assets or Securities and, in particular, the assessment of premiums or discounts. Specific share market data may provide an indication of the Value of Mineral or Petroleum Assets and Securities.*

102. *When determining any premium or discount to be applied to a Technical Value^{D31}, the Expert or Specialist should state whether and how market and economic conditions have been taken into account.*

RISK

- 103.** *The report should include an evaluation of the Risks^{D30} likely to apply to the Assets under consideration, including an analysis of the uncertainties inherent in the assumptions made and the effects they may have on the Valuation.*

Risks and uncertainty can arise with respect to the availability and quality of data and other information concerning:

- (a) geology of mineral deposits and the dependant estimates of grade, resources and reserves;*
- (b) geological prospectivity and the possibility that further exploration may fail to demonstrate any economic mineralisation (in the case of projects without defined reserves);*
- (c) ore processing and the variability of metallurgical parameters such as recovery rates, process plant availability and the ability of new processes to be financed and to live up to expectations;*
- (d) construction, including unforeseen foundation conditions, weather and industrial disputes, all of which may affect both capital costs and completion date);*
- (e) production of marketable commodities in terms of quality and price;*
- (f) “country risk” involving social, political, environmental, cultural and security factors which cannot be controlled by project operators;*
- (g) oil-in-place and recovery factors for Petroleum Assets.*

As an indication of the risk profile of the subject of the valuation, the Value of an Asset should, if possible, be expressed numerically as a range, together with the most likely figure.

See also Clause 57.

When assessing risk profiles, reference should be made to Australian/New Zealand Standard AS/NZS 4360:1995 “Risk Management” for Assets located in these countries and to sources of risk management information such as the Minerals and Industry Risk Management Gateway (MIRMgate) at www.mirmgate.com.

DEFINITIONS and ACRONYMS

- D1. AAPG** means the American Association of Petroleum Geologists.
- Advanced Exploration Areas** - See D20, Mineral Assets.
- D2. AIG** means the Australian Institute of Geoscientists
- Asset** – See D20, Mineral Assets and D26, Petroleum Assets
- D3. ASIC** means Australian Securities and Investments Commission
- D4. ASX** means the Australian Stock Exchange Limited. ASX maintains an ‘official list’ of companies, the securities of which may be traded. Admission to the official list is gained by satisfying the ‘ASX Listing Rules’. These rules impose strict requirements that must be complied with by entities admitted to the official list as well as by entities seeking admission to ASX, some of which are relevant to the preparation of Independent Reports.
- (ASX and the New Zealand Stock Exchange have, since 1989 and 1992 respectively, incorporated the JORC Code into their Listing Rules according to which a public report must be prepared in accordance with the JORC Code if it includes a statement on exploration results, mineral resources or ore reserves.)
- D5. AusIMM** means The Australian Institute of Mining and Metallurgy.
- D6. A Commissioning Entity** is the organisation, company or person that commissions a Report.
- See also Clauses 33 to 36.
- D7. Competence/Competent** means having relevant education, qualifications, experience, professional expertise and holding appropriate licences (where required) so as to have a reputation that gives authority to statements made in relation to particular matters.
- See also Clauses 17 to 23.
- D8** The (Australian) **Corporations Act 2001**, (previously known as "Corporations Law" and now commonly referred to as "the Act") as may be amended from time to time, is the legislation that has the principal legal influence on the preparation of Expert Reports and hence on the themes of the VALMIN Code. The Corporations Act takes precedence over any other pronouncements, including those of ASIC, ASX or the VALMIN Code.
- Development Projects** - See D20 : Mineral Assets.
- D9. A Disclosure Document** for an offer of securities is, as defined in Section 9 of the Corporations Act, a prospectus, a profile statement or an offer information statement.

D10 Expert and Specialists

An “**Expert**” may be either:

- (a) an “**Independent individual**” who prepares and accepts responsibility for a Report, or
- (b) a “**Representative Expert**” who is the nominated representative of a legally constituted body. He or she supervises the preparation of a Report and accepts responsibility for it on behalf of that body.

An “**Independent individual Expert**” must:

- (a) be Competent in and have had at least ten years of relevant and recent General Mining or Petroleum Experience^{D12} in the Mining or Petroleum Industries, as may be appropriate;
- (b) have had at least five years of relevant and recent experience in the assessment and/or valuation of Mineral or Petroleum Assets or Securities, as may be appropriate;
- (c) hold appropriate licences;
- (d) be a member of an appropriate Professional Association having an enforceable code of ethics.

A “**Representative Expert**” should preferably have the same length of experience and degree of Competence as is required of an Independent individual Expert. If this is not the case, he or she must engage a “**Senior Specialist**” who:

- (a) is Competent and has had at least ten years of relevant and recent Experience in the Mining or Petroleum Industries, as may be appropriate.
- (b) has had at least five years of relevant and recent Experience in the assessment and/or Valuation of Mineral or Petroleum Assets and Securities, as may be appropriate.
- (c) holds the appropriate licences.
- (d) is a member of an appropriate Professional Association having an enforceable code of ethics.

Specialists are persons who may be retained by the Expert to prepare sections of Reports concerning matters about which the Expert is not personally Competent. Specialists must accept responsibility for the sections of the reports they prepare.

Specialists must be Independent and Competent in relevant technical, commercial or legal fields associated with the Mining or Petroleum Industries and have at least five years of relevant and recent experience in the fields on which they are to report.

Except in special circumstances (that must be explained in the Report), the Expert or the Senior Specialist must be members of appropriate recognised Professional Associations having enforceable codes of ethics such as The AusIMM, AIG or MICA or their equivalents in countries other than Australia.

See also Clause 37

Exploration Areas - See D20: Mineral Assets.

Fair Market Value - See D43: Value.

D11 A Fairness and Reasonableness Report evaluates the fairness and reasonableness of a transaction examined in a Report and expresses an opinion on whether the transaction involved is fair and/or reasonable.

D12 General Mining or Petroleum Industry Experience requires that Experts and Specialists have had significant personal experience and involvement in:

- (a) geology, when Reports apply to Exploration Areas or Advanced Exploration Areas, or
- (b) the technical discipline in which the Expert or Specialist is to be principally involved, together with sufficient knowledge of other relevant technical disciplines to enable them to supervise the work of other professionals when Reports apply to Pre-Development Projects, Development Projects, Operating Mines, Producing Fields or Petroleum Production Facilities.

D13 Independent and Independence means that the Expert and/or Specialists must be able to satisfy any relevant legal tests of Independence and must be, and be perceived to be, willing and able to undertake an impartial assessment or valuation and to prepare an Independent Expert Report that is free of bias. To this end, the Expert and/or Specialists and their immediate families may not have a significant pecuniary or beneficial interest in:

- (a) the Commissioning Entity; or
- (b) the owners or promoters (or parties associated with them) of any of the Mineral or Petroleum Assets or Securities that are the subjects of the Technical Assessment/Valuation to be prepared; or
- (c) any of the Mineral or Petroleum Assets or Securities that are the subjects of the Technical Assessment/Valuation; or
- (d) the outcome of the Technical Assessment/Valuation.

As at (date of release of this version of the Code,) ASIC Policy Statement 75, "Independent expert reports to shareholders", ASIC Practice Note 42 "Independence of experts' reports" and ASIC Practice Note 43 "Valuation reports and profit forecasts" are current and provide instructions and guidance concerning the Independence of Experts and the preparation of Reports and valuation statements required for purposes regulated by the Corporations Act. (As at the above date, ASIC is reviewing its policy on Experts and proposes to issue two new policy statements replacing its existing policies. These will cover Independence and quality and content.)

See also Clauses 24 to 27.

D14 An Independent Expert Report (Report) is a Public Report^{D25} that may be required by the Corporations Act, the Listing Rules of ASX or of other recognised stock exchanges or for any other purpose that may involve the Technical

Assessment and/or Valuation of Mineral or Petroleum Assets and/or Securities. It must be prepared by an Expert who is Independent. The assistance of Specialists who are also Independent may be necessary, depending on whether or not the Expert has expertise in all aspects of the Technical Assessment and/or Valuation, and on the magnitude of the task.

See also Clause 12.

D15 The **JORC Code** means the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, as may be amended from time to time. This code sets out minimum standards, recommendations and guidelines for the public reporting in Australasia of exploration results, mineral resources and ore reserves.

See D4 regarding the incorporation of the JORC Code in the Listing Rules of the ASX and the New Zealand Stock Exchange.

See also D21 –“Mineral Resources and Ore Reserves”.

Listing Rules – See D4 - “ASX”.

D16 **Material/Materiality** means that:

- (a) the contents and conclusions of a Report;
- (b) any contributing assessment, calculation or the like; and
- (c) data and information

are of such importance that their inclusion or omission from a Technical Assessment or Valuation may result in a reader of the Report reaching a different conclusion than would otherwise be the case.

The determination of what is Material depends on both qualitative and quantitative factors. Something may be Material in the qualitative sense because of its very nature, such as, for example, country risk.

In the case of quantitative issues, the Materiality of data can be assessed in terms of the extent to which the omission or inclusion of an item could lead to changes in total value of:

Less than five per cent	Item is generally not Material
Between five and ten per cent	Item may be Material
More than ten per cent	Item is definitely Material.

(This guidance is derived from the Australian Accounting Standards Board AAS5 Materiality “useful benchmarks”.)

D17 **MCA** means the Minerals Council of Australia.

D18 **MICA** means the Mineral Industry Consultants Association (of Australia).

D19 A **Mineral** is any naturally occurring material found in or on the Earth's crust that is useful to and/or has a value placed on it by humankind, excluding crude oil, natural gas, coal-based methane, tar sands and oil-shale which are classified as Petroleum as defined in D25.

D20 Mineral Assets means all property including but not limited to real property, intellectual property, mining and exploration tenements held or acquired in connection with the exploration of, the development of and the production from those tenements together with all plant, equipment and infrastructure owned or acquired for the development, extraction and processing of minerals in connection with those tenements. Most Mineral Assets can be classified as either:

Exploration Areas - properties where mineralisation may or may not have been identified, but where a Mineral or Petroleum Resource has not been identified.

Advanced Exploration Areas - properties where considerable exploration has been undertaken and specific targets have been identified that warrant further detailed evaluation, usually by drill testing, trenching or some other form of detailed geological sampling. A resource estimate may or may not have been made but sufficient work will have been undertaken on at least one prospect to provide both a good understanding of the type of mineralisation present and encouragement that further work will elevate one or more of the prospects to the resource category.

Pre-development Projects - properties where Mineral or Petroleum Resources have been identified and their extent estimated (possibly incompletely) but where a decision to proceed with development has not been made. Properties at the early assessment stage, properties for which a decision has been made not to proceed with development, properties on care and maintenance and properties held on retention titles are included in this category if Mineral or Petroleum Resources have been identified, even if no further Valuation, Technical Assessment, delineation or advanced exploration is being undertaken.

Development Projects - properties for which a decision has been made to proceed with construction and/or production, but which are not yet commissioned or are not yet operating at design levels.

Operating Mines - mineral properties, particularly mines and processing plants that have been commissioned and are in production.

D21 Mineral Resources and Ore Reserves are defined in the current version of the Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code). These terms must not be interpreted in any Material way without reference to the JORC Code (as may be amended from time to time) in its entirety. The principal items defined in the edition of the JORC Code effective as from December, 2004 are:

- (a) Exploration Results
- (b) Mineral Resource

- (c) Inferred Mineral Resource
- (d) Indicated Mineral Resource
- (e) Measured Mineral Resource
- (f) Ore Reserve
- (g) Probable Ore Reserve
- (h) Proved Ore Reserve

See also D15 – “JORC Code”.

D22 Mineral or Petroleum Securities means those Securities issued by a body corporate or an unincorporated body whose business includes exploration for, development of, or extraction and processing of Minerals or Petroleum.

D23 Mining/Petroleum Industry means the business of exploring for, extracting, processing and marketing Minerals or Petroleum.

Operating Mines - See D20: Mineral Assets.

D24 PESA means the Petroleum Exploration Society of Australia

D25 Petroleum means any naturally occurring hydrocarbon, whether in a gaseous or liquid state, including coal-based methane, tar sands and oil-shale.

D26 Petroleum Assets means all property including but not limited to real property, intellectual property, production and exploration tenements held or acquired in connection with the exploration, development of and production from those tenements together with all plant, equipment and infrastructure owned or acquired for the development, extraction and processing of petroleum in connection with those tenements. Most Petroleum Assets can be classified as:

Exploration Areas - See D20: Mineral Assets.

Advanced Exploration Areas - See D20: Mineral Assets.

Pre-Development Projects - See D20: Mineral Assets.

Producing Fields – oil/gas fields that have been developed and are in production.

Petroleum Production Facilities – all the plant and equipment required for the production of oil, gas, carbon-based methane, tar sands or oil shale from a field.

D27 Professional Association means a self-regulating body such as one of engineers or geoscientists or of both that:

- (a) has been given authority or recognition by statute;
 - (b) admits members primarily on the basis of their academic qualifications and professional experience;
 - (c) requires compliance with professional standards of expertise and behavior according to a code of ethics established by the association;
- and

(d) has enforceable disciplinary powers, including that of suspension or expulsion of a member, should its code of ethics be breached.

D28 Public Reports include, but are not limited to company annual and quarterly and other reports to ASX or other recognised stock exchanges or as may be required by law. By way of guidance:

- (a) If the report is likely to be sent to all, or substantially all the shareholders of a company, it will be a Public Report.
- (b) If the report is likely to be released to ASX or another recognized stock exchange, it will be a Public Report.
- (c) If the Commissioning Entity is not a listed company and the report is likely to be read by entities from which funds may be raised under the Corporations Act without the use of a disclosure document, it is unlikely to be a Public Report.

Report – See D37: Valuation Report.

D29 Reasonableness Test means an impartial assessment to determine if the overall valuation approach used is rational, realistic and logical in its treatment of the inputs to a Valuation to the extent that, having the same data and information about an Asset, another Expert or Specialist would make a similar Technical Assessment of and/or value it at approximately the same level. Such a test will serve to identify Technical Assessments or Valuations that may be out of line with industry standards and norms.

D30 Risk means the chance of an event occurring that will have an impact on objectives. A risk may be quantifiable in terms of the likelihood of loss, less than expected returns or an undesirable outcome. [See also D39: Uncertainty.]

D31 Securities means documents that are evidence of a loan or ownership, including, but not limited to:

- (a) debentures, stocks or bonds;
- (b) shares;
- (c) units in a trust;
- (d) loan securities, such as mortgages; and
- (e) any right to participate in, or any interest in:
 - the profits, assets or realisation of any financial or business undertaking or scheme;
 - a common enterprise in relation to which the holder of the right or interest is led to expect profits or
 - a contract, scheme or arrangement involving investment in a joint venture:
- (f) options.

Senior Specialist – See D10 : Experts and Specialists.

D32 SIA means “Securities Institute of Australia”.

D33 SPE means “Society of Petroleum Engineers”.

Specialist - See D10: Expert and Specialists.

D34 Technical Assessments means appraisals prepared by an Expert or Specialist, of the technical aspects of a Mineral or Petroleum Asset. They may involve the review of such matters as geology, resources, reserves, mining methods, metallurgical processes and recoveries, petroleum engineering, provision of infrastructure and environmental aspects.

D35 Technical Assessment Reports involve the Technical Assessment of those elements such as, mining or petroleum engineering, metallurgy, environmental impacts, capital and operating costs and actual and/or projected production that may contribute to the actual and/or potential economic output from Mineral or Petroleum Assets as may be required to assess the economic benefit of those Assets and then to determine their Technical Value^{D36}.

D36 Technical Value is an assessment of a Mineral or Petroleum Asset's future net economic benefit at the Valuation Date under a set of assumptions deemed most appropriate by an Expert or Specialist, excluding any premium or discount to account for such factors as market or strategic considerations.

D37 A Tenement is any form of title or right such as a licence, permit or lease granted by the responsible government in accordance with its mining or petroleum legislation that confers on the holder certain rights to explore for and/or extract minerals or petroleum that may be, or is known to be contained under the surface of the land. "Tenure" and "Title" have the same connotation as "Tenement". All references to Tenements should be qualified by denoting its type (eg "mining" licence, "petroleum" Tenement or "exploration" Tenement).

D38 Transparency/Transparent literally means "easily seen through, clear and unmistakable, free from affectation and disguise." For the purposes of the VALMIN Code, these qualities **must** apply to the data and information used as the basis of a Valuation or a Technical Assessment, including the assessment of resources/reserves, mining, processing and marketing issues, the valuation approach adopted and the methodology or methodologies used, all of which must be clearly set out in the Report.

See also Clause 29.

D39 Uncertainty means unpredictable conditions, events or outcomes that are not quantifiable.

See also D30: Risk.

D40 Valuation is the process of determining the monetary Value of a Mineral or Petroleum Asset or Security.

D41 Valuation Date means the reference date on which the monetary amount of a Valuation in "dollars of that day" terms is current. This date could be different from the dates of completion or signing of the Report or the cut-off date of available data.

D42 A **Valuation Report** expresses an opinion as to the Value of a Mineral or Petroleum Asset or of a Mineral or Petroleum Security and its underlying Assets.

See also Clause 14.

D43 **Value** is the **Fair Market Value** of a Mineral or Petroleum Asset or Security. It is the amount of money (or the cash equivalent of some other consideration) determined by the Expert in accordance with the provisions of the VALMIN Code for which the Mineral or Petroleum Asset or Security should change hands on the Valuation Date in an open and unrestricted market between a willing buyer and a willing seller in an “arm’s length” transaction, with each party acting knowledgeably, prudently and without compulsion.

Value is usually comprised of two components, the underlying or ‘Technical Value’ of the Mineral or Petroleum Asset or Security, as defined in D36, and a premium or discount relating to market, strategic or other considerations.

Value should be selected as the most likely figure from within a range after taking account of Risk and the possible variation in ore grade, metallurgical recovery, capital and operating costs, commodity prices, exchange rates and the like.

D44 **Vendor Consideration Opinion** means a report involving a Valuation and expresses an opinion on the fairness of the consideration paid or benefit given to a vendor, promoter or provider of seed capital.

D45 **WPC** means “World Petroleum Conference”.

END