The Southern African Institute of Mining and Metallurgy
Reserve Estimation and Reporting Africa '07

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THE PRESENT AND FUTURE OF INTERNATIONAL RESOURCE AND RESERVE REPORTING

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Abstract

Awareness of the importance of, and issues surrounding, public and other reporting of Mineral Resources and Mineral Reserves has increased rapidly in recent years, in part because of press commentaries on Bre-X and others, but also because of increased exposure of our industry resulting from the rapid rise in commodity prices, an explosion in mining company listings and the emergence of new mineral 'superpowers' such as China and Russia.

Establishing standard reporting practices that recognise the globalisation of the industry but which continue to reflect national priorities and interests, and accommodate systems that have their roots in different political environments, is a significant challenge.

Prior to 1999, only one reporting standard held sway in the mining industry, the Australasian JORC Code[1], published in 1989 with subsequent updates. In 1999 publication of a revised JORC Code triggered the development of a spate of similar national reporting standards around the world: in USA (1999 and 2005 draft), South Africa (2000 and 2007) (SAMREC Code 2007[2]), UK/Ireland and Western Europe (2001 and 2007 in preparation), Peru (2003), Canada (2000 and 2005), Australasia (updated 2004) (JORC Code 2004) and Chile 2004.

It is not by accident that these reporting standards are remarkably similar, thanks to the efforts of a small group of volunteers representing each of the major national reporting organisations, and now forming the membership of the Committee for Mineral Reserves International Reporting Standards (CRIRSCO). In July 2006 CRIRSCO published a generic International Reporting Template (CRIRSCO 2006), reflecting best practice national reporting standards but stripped of national regulatory requirements.

This paper discusses the list of issues currently being addressed by CRIRSCO on behalf of the international mining industry and looks to the future of resource and reserve reporting. Is a World Reporting Code possible? Can reserves be defined as assets to be

[1] The terms Code and Guideline are often used interchangeably when referring to resource and reserve reporting. In practice, a Code is generally legally binding whereas a Guideline is not and this is reflected in the format of most national reporting documents. When referred to as a Code, a national document will generally be linked to the reporting regulations of the country involved. When termed a Guideline, no such legal connection exists. For simplicity, unless referring to a specific document, this paper refers to 'reporting standards' to cover both Codes and Guidelines.

[2] At the time of writing, the 2007 SAMREC Code had been completed but not published.

valued and carried on balance sheets? Are resources and reserves in the solid minerals and petroleum industries really all that different? Can Russia, China and other emerging mining nations with their own, government oriented, reporting systems be aligned with 'Western' systems? And what role can South Africa and her neighbours play in providing answers to these questions?

Background

Let us first explain what CRIRSCO is. With only a brief apology for the cumbersome acronym (all attempts to construct a more pithy alternative having failed), the Committee for Mineral Reserves International Reporting Standards was formerly the Mineral Definitions Working Group of the Council of Mining and Metallurgical Institutions (CMMI), an organisation representing professional bodies in all of the major mining and mining investment countries, for example the Institute of Mining and Metallurgy (IMM) and its equivalent in South Africa, the SAIMM.

When the CMMI disbanded in 2002, CRIRSCO continued as an 'orphan' committee with continued support from those same professional bodies, and increasingly, from other sources such as mining companies and regulatory bodies. In early 2007, the Committee appears to have found a home in the International Council for Mining and Metals where, subject to ratification by the ICMM Council, it will reside as a Task Force. The ICMM is an influential industry body representing all of the major mining companies and many juniors through its Association members such as the Minerals Council of Australia, the Chamber of Mines of South Africa and the Prospectors and Developers Association of Canada.

National Reporting Organisations (NROs), such as SAMREC in South Africa, now provide the members of CRIRSCO, normally two per NRO, who work in a voluntary capacity on a wide range of issues affecting international mineral resource and reserve reporting. Stephenson and Weatherstone (2006) provide more historical background. This paper is intended to outline the current state of affairs in international reporting but more importantly to express a view on future trends; where the industry needs to both defend itself against aggressive or inappropriate regulation, or take advantage of its ability to influence reporting trends through direct engagement with stakeholders.

While the author is currently Chairman of CRIRSCO, many of the views expressed are his own and should not be construed as official CRIRSCO policy.

Where are we today

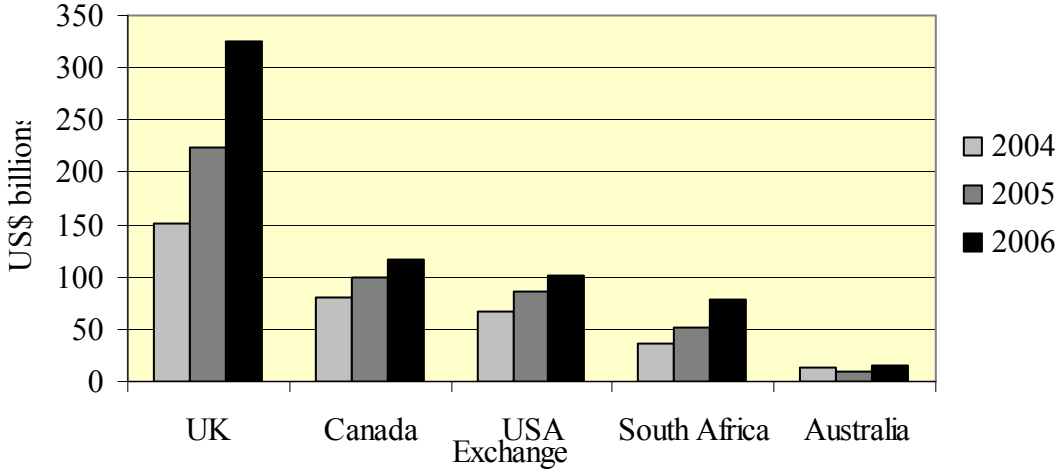
The first thing to say about the state of international mineral reserves and resources reporting today is that it is vastly healthier than it was ten years ago. Without the benefit of the big picture view we tend to focus on the negatives, and headline grabbing issues such as Bre-X remind us all that a single negative press comment can often undo the many positives that have come about since minerals reporting became truly international. When something goes right, it tends to go unnoticed. When something goes wrong, investors lose money, companies suffer reputational damage and everyone takes an interest. This should not distract us from the real progress that has been made in the last decade, and the many improvements that are still envisaged.

It is important to recognise that we now have a healthy international community of national reporting organisations as illustrated by the exponential increase in the number of reporting standards being issued since 1999. At that time, only the Australasian JORC Code was recognised in any way as an international 'standard' in mineral resource and ore reserve reporting, even though it was specifically linked to the Australian Stock Exchange for its regulatory controls.

Since 1999, many new national reporting standards have been released; in USA (1999, 2005 draft), South Africa (2000 and 2007), UK/Ireland and Western Europe (2001, 2007 in preparation), Peru (2003), Canada (2000 and 2005), Australasia (JORC updated 2004) and Chile (2004). A new standard is also under development in the Philippines. Sometimes described as 'JORC clones' these new reporting standards all pay tribute to JORC as their source. However, importantly, each national standard has to respond to the regulatory requirement of its host country if it is to have any legal force. Thus in Canada, for example the Canadian Institute of Mining, Metallurgy and Petroleum (CIM) reporting standards are incorporated by reference in the Canadian Securities Administrators' National Instrument NI43-101: Standards of Disclosure for Mineral Projects. Similar linkages occur in Australia, South Africa (Section 12 "Mineral Companies" of the JSE Listing Rules), Chile and Peru.

To some extent each national reporting standard also reflects the different needs of its local community for reporting. In the UK and Western Europe for example, where there is a significant quarrying industry, the national reporting standard puts more emphasis on 'stone, aggregate and industrial minerals'. In Australia the industry is more metal-centric and this is reflected in the terminology used; metallurgical process and metallurgical recovery, for example. Similarly, London is the biggest mining market in the world as illustrated in Figure 1, making it very important that the next version of the PERC[3] Reporting Code reflects a link to the London Stock Exchange.

Figure 1 Mining Capitalisation by Exchange 2004-06



Internationally, reporting standards are fundamentally aligned through the definitions of resources and reserves first agreed in the CMMI (now CRIRSCO) Denver Accord of 1997. The definitions are deliberately broad, in line with the principle that they must cover all possible scenarios involving the variety of commodities and mining situations

[3] Pan European Reporting Committee: the NRO for UK, Ireland and Western Europe

that occur in the industry. Of course the definitions are not perfect, but it is inconceivable that they ever could be made perfect; our industry is too diverse for that, as are the people who work in it and the many other stakeholders looking on from outside.

The important thing is that the definitions are accepted and are entrenched with only minor variations in all of the main reporting standards. They have also been accepted by the United Nations Economic Commission for Europe (UNECE) for its Framework Classification (UNFC), thereby bringing in a large constituency of government organisations, many of which are in emerging economies. If the definitions can be improved, and there is no reason why that should not happen, it is comforting to note that it is highly likely that this would only be done by international consensus.

A further international governance step is the continued growth of reciprocal agreements between and among countries whereby the professionals (Competent or Qualified Persons[4]) of one country can report to regulators in another. This recognises the globalisation of the mining industry and the common need for professionals to cross borders to carry out their work. These systems may operate in slightly different ways. Australia has its 'Recognised Overseas Professional Organisations' or ROPOs whereas Canada's Securities Commissions operate a Recognized Foreign Association system. In South Africa the SAMREC/SAMVAL Committee provides recognition of appropriately qualified overseas bodies on application. However the intent is the same, to allow suitably qualified personnel to carry out the important work of estimating and reporting resources and reserves internationally and without unreasonable constraints.

The following table illustrates just how closely aligned the national reporting standards are across a range of measures.

Criteria	Australia	Canada	South Africa	UK/W Europe	Chile	Peru	USA-SME	USA-SEC	UNFC
Adoption of CRIRSCO-type standard	√	√	√	√	√	√	√	X	X
Reporting standard recognised by national regulator	√	√	√	√	√	√	X	√	X
Competent Person Requirement	√	√	√	√	√	√	√	X	X
Reporting of Mineral Resources allowed	√	√	√	√	√	√	√	X*	√
Inferred Resources allowed in economic studies	√	X*	√	√	√	√	√	X	√
Level of study required for Mineral Reserves	1	2	3	2	2	1	1	3	3**
Commodity price process specified by regulator	X	X	X	X	X	X	X	√	X
ROPO type reciprocal system	√	√	√	√	X	X	X	X	X

Level of study: 1 = appropriate assessments and studies as determined by Competent Person
2 = Pre-feasibility study – expected (UK/W Europe) or required (Canada/Chile)

[4] Competent and Qualified Person are directly equivalent terms used in different jurisdictions. For simplicity the term Competent Person will be used in the remainder of the paper.

3 = Feasibility study for new projects
3** = Feasibility study for Proved Reserves, pre-feasibility study for Probable Reserves
ROPO = Recognised Overseas Professional Organisation
X* = Allowed in certain restricted circumstances

While there are some notable exceptions, for example the Securities Exchange Commission (SEC) in the USA, there is a high degree of international compatibility in most national reporting standards. Elements in broad agreement include the requirement for a Competent Person to prepare documentation on which public resource and reserve statements are based (and to approve the form and context of the public statements) and the acceptance that mineral resources can be publicly reported. Although the level of study requirements for conversion of mineral resources to mineral reserves are still a bit ambiguous, there is an emerging consensus that a properly scoped and executed Pre-feasibility study should be adequate for initial reserve declarations. The ROPO type of system, with national variants, is also gradually developing, as is recognition of national reporting standards by national regulators.

In July 2006, CRIRSCO released the International Reporting Template, intended as a form of generic 'code' although the term code is deliberately avoided. The Template serves as a guide to national reporting bodies that do not have a reporting standard or who want to revise their historic standard to an internationally acceptable form. As has also been proved in the last two years, there is a need for a generic international reporting standard when reporting issues are discussed with international bodies, such as the United Nations and the International Accounting Standards Board (IASB), of which more will be discussed later.

So this is the environment in which CRIRSCO finds itself. The awareness of reporting standards has never been greater, public reporting of resources and reserves has, in general, never been better, and the extent to which international discussions take place before any significant changes to national reporting standards are made is a credit to the countries involved. So why can we not relax, take the foot off the pedal and coast for a while?

What lies ahead?

Broader representation

The fact that CRIRSCO is to become part of a major industry organisation, the ICMM, shows that its role is evolving in response to industry needs. While the professional bodies that provided its roots are still there and augmented by new additions, there are numerous other bodies now represented in the various NROs including direct industry, industry association and stock exchange participants. The SAMREC organisation in South Africa is an illustration of how support for the NROs is broadening and this representation feeds its way through to CRIRSCO. This trend needs to continue so that all stakeholders in the industry are represented; not just a limited band of committed individuals and organisations.

New participating countries

The recent growth in the industry precipitated by increased commodity prices, the emergence of China and Russia in particular as major forces in both the extraction and

consumption of minerals and the explosion of new mining company listings on Western stock markets has increased awareness of the industry as never before. The supply of minerals is now newsworthy, whereas in the past it was often taken for granted. The mining industry can no longer operate as a 'closed shop' when it comes to the dissemination of information about its affairs. Quite simply, a lot more people are interested in what we do.

In the Chinese and Russian examples, there is a need for clarity in the business relationships that are developing with the West. Western companies want to explore and develop in Russia and China; Russian and Chinese companies want to list on Western stock exchanges and raise capital from western banks and equity markets. This two-way relationship relies on clear rules and guidelines that transcend the inevitable language barriers.

Financiers for Chinese and Russian projects need the security provided by recognisable resource and reserve statements, while Western companies need to recognise and value assets in China and Russia on the same basis as they would do elsewhere. In short we need a common resource and reserve 'language'. In response to this need CRIRSCO has established a working group with each country with the initial objective of achieving a mutual understanding of how the respective systems are intended to work, and developing 'linking' documentation that can assist in correlating the systems in both directions.

A key to what is hoped will eventually lead to China, Russia and other countries eventually joining CRIRSCO is the acceptance of the Competent Person concept and establishing the necessary governance systems that reassure investors and other users of resource and reserve information that internationally accepted best practice procedures have been followed.

These efforts will continue and increase in the next few years as other countries follow the lead of China and Russia.

Increased regulatory involvement and corporate governance

From the regulators, there is increasing external pressure for more comprehensive reporting and 'corporate governance'; a term unheard of in reserves circles five years ago. Reporting is no longer the minimalist recording of numbers; tonnes, grades and recoveries, for the disinterested shareholder, it is a comprehensive statement of corporate assets, to be used by analysts, stockbrokers and accountants as a measure of the health and future prospects of the company concerned.

With increased corporate governance comes increased audit activity. The trail from the drill rig to the investor must be transparent and well documented, with appropriate controls at every stage of the way. This increases the responsibilities of Competent Persons to provide high quality estimates and documentation, and requires their senior managers to be aware of the processes involved so that governance objectives are met.

As many companies have found, corporate governance is a two-edged sword. Excessive bureaucracy and regulation are time consuming, expensive and bad for business. On the other hand there is no doubt that regulations such as Sarbanes-Oxley

have resulted in significantly improved estimation and reporting practices. The trick in future will be to manage the negative consequences while building on and promoting the positive benefits.

International financial reporting standards

CRIRSCO has, at the invitation of the IASB, been participating in the activities of the IASB Extractive Activities Research Project designed to investigate the need for and practicalities of an International Financial Reporting Standard for the extractive industries, which include petroleum (oil and gas) as well as solid minerals.

Such a standard would place far greater emphasis than is currently the case on resources and reserves as assets, potentially valued and carried on balance sheets. This in turn focuses a spotlight on what our definitions actually mean in accounting terms, and in particular how certain are we of delivering a particular product, even from Proved Reserves?

Working with the Oil and Gas Reserves Committee of the Society of Petroleum Engineers (SPE), CRIRSCO's approach has been to leave the respective definitions intact, but aim to provide 'convergence' of terminology where possible and modify the accompanying guidelines where appropriate to accommodate financial reporting requirements. Many questions remain to be resolved; for example when does a body of mineralisation first become an asset as defined in accounting terms? What rules should be applied for depreciating assets over the life of a mineral reserve? And perhaps most fundamentally, what reliance can be placed on numbers that are derived from estimates. What exactly do we mean by low, reasonable and high levels of confidence?

Links to the oil and gas industry

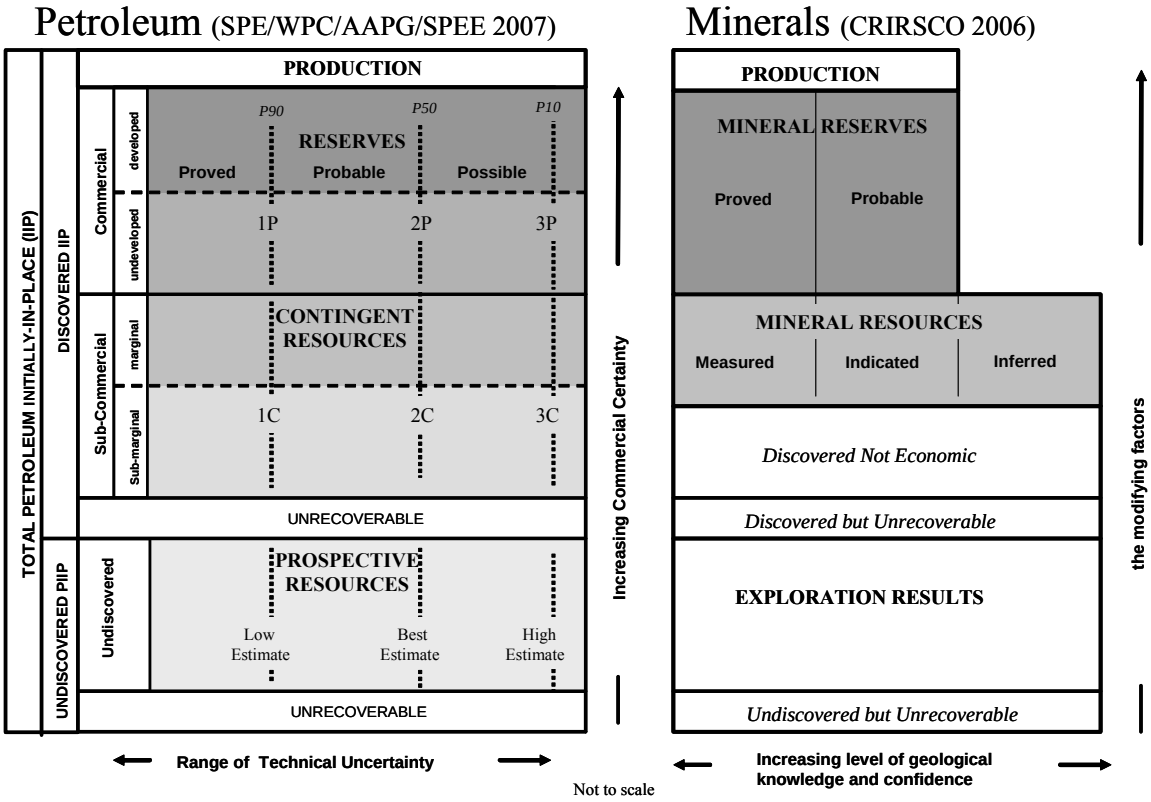
CRIRSCO's work with the SPE, which started in 2006 at the request of the IASB and with the active encouragement of the United Nations Economic Commission for Europe (UNECE), has proved valuable in asking questions of some of our most fundamental concepts. Outside the two industries, there is a perception that oil and gas and solid minerals are all the same; depleting commodities being removed from the ground. This leads to the reasonable question of why the reserves and resources definitions are not the same.

In fact the SPE (2007) and CRIRSCO systems have common roots going back 35 years to the McKelvey Box (McKelvey, 1973, 1976) and this can still be seen in two-dimensional representations of the two systems (Figure 2).

Not surprisingly, with little contact in the intervening years, significant differences in the application of the two systems have arisen, although in the author's view the systems themselves are not grossly different. The SPE system, for example is not designed solely for public reporting but as a tool for companies to track all petroleum occurrences they may have available to them now, or that remain to be discovered. Nevertheless the fundamental similarities between the two businesses are undisputed, and this could lead in the future to more convergence in the two systems, with CRIRSCO for example, extending its definitions into the 'discovered uneconomic' or even 'undiscovered' mineralisation. While this is uncharted territory for CRIRSCO it

would have the advantage of aligning its system more closely with those of the SPE and UNECE, while recognising that many mining companies already maintain inventories of such material for internal planning purposes.

Figure 2 A comparison of Petroleum and Minerals Classifications



The situation in the USA

In 2004, an Industry Working Group was formed under the auspices of the Society for Mining, Metallurgy and Exploration (SME) to formulate a response to the many fundamental reporting issues that the industry has with the Securities and Exchange Commission (SEC). These include the SEC's refusal to allow the term "resources" to be used in reports, its insistence on final feasibility studies being completed before new greenfields reserves can be declared, and perhaps most importantly, its insistence on historical (currently three year trailing average) rather than forward looking commodity prices in reserve estimation. Most of these issues conflict with typical business practices, both inside and outside the USA.

The Industry Working Group presented its conclusions to the SEC in April 2005 and invited a response, which unfortunately has not yet been forthcoming. Recently the SME took the decision to publish its revised Guide later this year as what it hopes will become accepted best practice in the USA. In turn it can be expected that the new proposals incorporated in the Guide, which are intended to go a long way towards resolving the SEC's concerns, will become the topic of international discussion with, potentially, their eventual incorporation into other national reporting standards and the CRIRSCO Template.

This is a good illustration of the way that national reporting standards now 'feed off each other' with progressive and incremental improvements made with full international

knowledge and discussion. The CRIRSCO Template then reflects this international consensus.

Africa's role

Any international effort of this type requires as broad a representation as possible to lend it credibility. South Africa has been an integral part of the international resource and reserves reporting initiative as a founding member of the original CMMI Mineral Definitions Working Group that first met in Sun City in 1994 and a participant in the 1997 Denver Accord. The current SAMREC has demonstrated that it is a healthy organisation representing a broad constituency of Southern African interests and as a result is an important contributor to CRIRSCO.

No less important is Southern Africa's historic and expanding mining industry, with activities in countries such as Zambia and Tanzania becoming more and more important. Establishing reporting systems in this part of the world, whether targeting listings on the Johannesburg Stock Exchange or elsewhere, is an important building block in the international systems that have been referred to in this paper.

The publication of SAMREC 2007, in parallel with the mineral property valuation equivalent SAMVAL, is a significant step forward as it clearly links resource and reserve reporting and valuation processes using consistent terminology and concepts that are applicable internationally. As a result of the extensive consultation processes that went into SAMREC 2007, several issues were highlighted which, although they did not cause radical changes in the latest version of the Code, are worthy of further consideration and will influence the international debate for future reporting standards.

Finally

While all of the above indicates a healthy reporting environment at present, there is no doubt that this has only been achieved and can only be sustained by continuous effort by the mining industry.

Are we heading for a World Reporting Code? Probably not! Apart from likely legal barriers, the higher profile of the document would likely lead to a focus on the differences between national reporting standards rather than the similarities as at present.

Can reserves be valued as assets on corporate balance sheets? Probably yes, as logic would suggest that there are no greater assets to a mining company than its resources and reserves. Whether and how they should be valued is another debate that has to take place between the industry and its regulators.

The success of the work carried out with our petroleum industry colleagues has shown that some convergence is possible. However, with both industries pointing to successful independent development of their definitions and classifications, and more importantly the understanding of these within the respective industries, a full merger is unlikely.

Can and should China, Russia and others be brought into the international system? Absolutely, although this will require compromises on both sides and an agreement that it is the stakeholders of the industry that are the customers of the process.

Southern Africa's future role in determining these issues will be as significant and important as it has been since the international reporting initiative was started in 1994.

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