

The Proposed 2016 SAMREC Code

Steven Rupprecht

University of Johannesburg, Johannesburg, South Africa

Corresponding author: stevenr@uj.ac.za

The South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves (the SAMREC Code or the Code) sets out minimum standards, recommendations and guidelines for public reporting of exploration results, mineral resources and mineral reserves in South Africa. The Code is being rewritten and updated, with work on-going since 2013. The revision is being undertaken to ensure the Code remains relevant, incorporates developments within the international mining industry and keeps abreast of technology. Some of the changes and their reasons are discussed.

INTRODUCTION

The South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves (the SAMREC Code or the Code) sets out minimum standards, recommendations and guidelines for public reporting of Exploration Results, Mineral Resources and Mineral Reserves in South Africa. The Code is being rewritten and updated, with work on-going since 2013. The proposed 2016 update is not significantly different from previous versions of the Code. The revision is being undertaken to ensure the Code remains relevant, incorporates developments within the international mining industry and keeps abreast of technology.

The Code sets out minimum standards, recommendations and guidelines for public reporting. However, reporting may be unclear, ambiguous, selective, obscure, distorted or unintelligible. Part of the purpose of the update is to provide better guidelines to Competent Persons (CPs) to ensure that the material information is being reported and that reporting is transparent in accordance with the guidelines of the Code. The information provided should, as required by the Code, be adequate to inform the “reader/investor or potential investor to make a reasonable and balanced assessment of the significance of the information”.

The Committee for Mineral Reserves International Reporting Standards (CRIRSCO) highlights the importance of the reporting Codes, as provided from a quote from their website (www.crirSCO.com):

The mining industry is a vital contributor to national and global economies. It is a truly international business that depends on the trust and confidence of investors and other stakeholders for its financial and operational well-being. Unlike many other industries, it is based on depleting mineral assets, the knowledge of which is important prior to the commencement of extraction. It is therefore essential that the industry communicates the risks associated with investment effectively and transparently in order to earn the level of trust necessary to underpin its activities.

The aim of the Code is to contribute to earning and maintaining the trust of investors and other interested parties by promoting high standards of reporting of mineral deposit estimates (Mineral Resources and Mineral Reserves) and of exploration progress, i.e., Exploration Results.

To date, the SAMREC Code has relied on a peer review process and is reliant on self-policing. This policy, based on the outcome of joint committee of the South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves (SAMREC) and the South African Mineral Asset Valuation Committee (SAMVAL) (the SAMREC/SAMVAL committee, SSC) workshop in August 2014 (Cawood, 2014), will remain unchanged. The effectiveness of this self-policing has been debated since the inception of the Code and, although it is sometimes seen as ineffective, the authors, members of the SAMREC working group and other professionals involved believe self-regulation is the preferred method of monitoring public reporting of exploration results, mineral resources and mineral reserves.

However, one must be mindful that, through the history of mining, there have always been incidents of fraud and corruption. In the 1960s, Australia was affected by the Poseidon nickel boom and bust (Stoker, 2009), which raised concern about unacceptable reporting practices. The BRE-X scandal in 1997 created much impetus in creating international Codes (Wikipedia, 2014), which provide investors, potential investors and other stakeholders with a sense of confidence in statements made by promoters and owners of mineral projects. In the South African context, several public reports have been found to be deficient, requiring intervention by the Readers Panel of the Johannesburg Stock Exchange (JSE) or have resulted in complaints being raised to the SSC or the JSE. Therefore, it is critical that the minerals industry maintains, and even improves, its reputation through compliant reporting.

BACKGROUND TO THE SAMREC CODE

The SAMREC Code was first issued in March 2000 and adopted by the JSE in their Listings Requirements later that same year. The Code has been adopted by the Southern African Institute of Mining and Metallurgy (SAIMM), the Geological Society of South Africa (GSSA), the South African Council for Natural Scientific Professions (SACNASP), the Engineering Council of South Africa (ECSA), then South African Geomatics Council (SAGC) (formerly PLATO, the South African Council for Professional and Technical Surveyors) and the Institute of Mine Surveyors of South Africa (IMSSA). The Code is binding on all members of these organisations (SAMREC, 2009).

As a result of the Poseidon nickel boom and bust, the Australasian Joint Ore Reserves Committee (JORC) was established in 1971. Between 1972 and 1989, several reports were issued by JORC which made recommendations on public reporting and Ore Reserve classification and gradually developed the principles now incorporated in the JORC Code. In February 1989, the first version of the JORC Code was released. The JORC Code was well accepted and became a template for other countries to develop their own reporting codes.

Preceding the issuing of the SAMREC Code, a committee of the Council of Mining and Metallurgical Institutions (CMMI) began working to create a set of standard international definitions for the reporting on Exploration Results, Mineral Resources and Mineral Reserves (1994). This evolved into the umbrella body CRIRSCO, now known as the Committee for Mineral Reserves International Reporting Standards. CRIRSCO has become a rigorously constituted committee. It is recognised by global organisations, such as the International Accounting Standards Board (IASB), the United Nations Economic Commission for Europe (UNECE) and the International Council on Mining and Metals (ICMM), as the key international organisation representing the mining industry on issues relating to the classification and reporting of mineral assets. Current members of CRIRSCO are Australia/New Zealand, Canada, Chile, Europe, Mongolia, Russia, South Africa and the United States of America, with the prospect of other regions and countries joining in future.

In recent years, CRIRSCO has worked towards aligning all the international reporting codes so that the codes used in the extractive industries are globally consistent. This consistency is based on

insisting that the fifteen core definitions are commonly applied to all the international Codes (CRIRSCO, 2013). The following are the core defined terms:

<i>Public Reports</i>	<i>Measured Resources</i>
<i>Competent Person</i>	<i>Mineral Reserve</i>
<i>Modifying Factors</i>	<i>Probable Reserve</i>
<i>Exploration Target</i>	<i>Proved Reserve</i>
<i>Exploration Results</i>	<i>Scoping Study</i>
<i>Mineral Resource</i>	<i>Pre-Feasibility Study</i>
<i>Indicated Resource</i>	<i>Feasibility Study</i>
<i>Inferred Resource</i>	

Consequently, the definitions in the SAMREC Code have to be either identical to, or not materially different from, the other international definitions.

SAMREC 2016 AND OTHER RELEVANT UPDATES

The process began in 2013 to review and update the SAMREC Code to ensure that it keeps current with recent developments and revisions made to other international Codes, notably the 2014 revision of the Canadian Institute of Mining, Metallurgy and Petroleum (CIM), the JORC (Australia & New Zealand) 2012 revision, the Pan-European Reserves and Resources Reporting Committee (PERC) 2013 revision and the Society for Mining, Metallurgy and Exploration (SME) (USA) 2014 issue. All aspects of the revision have been compared against these recent developments.

The SAMREC Code update is intended to improve the Code, eliminate possible contradictory reporting practices, develop a user-friendly Code, provide a more comprehensive and usable Table 1 (see below) and enhance the clarity of the Code.

One of the key proposed changes to the Code is the inclusion of a “if not - why not” requirement in specific instances. The proposal is that every aspect of the checklist (Table 1) must be answered by the Competent Person so as to adequately address all key elements of the reporting of Exploration Results, Mineral Resources and Mineral Reserves. Where aspects of this table are not included in the Public Report, the Competent Person is required to comment why they have not been addressed. An important motivator of this proposal is to ensure that selective reporting is not taking place and increasing the confidence in public reporting, as well as including all aspects that the reasonable investor would expect to find in a Public Report.

To ensure congruency between the SAMREC and SAMVAL Codes, regular interaction between the Working Groups has taken place.

The SAMVAL Code has also been reviewed over the past two years with changes being made to keep it in line with international best practice. One of the biggest issues being dealt with by the SAMVAL Working Group is the registration of Competent Valuers (CVs). It was proposed that registration would be necessary through a statutorily established regulatory body (SERB). In the August 2014, the SSC workshop concluded that statutory registration is ultimately necessary but, for the time being, will remain in its current form as “part statutory and part peer management” (Cawood, 2014). The SAMVAL Code is anticipated to be released at about the same time as the SAMREC Code in 2016.

In addition to revisions to the SAMREC and SAMVAL Codes is the amendment to the South African National Standard (SANS): South African Guide to the Systematic Evaluation of Coal Resources and Coal Reserves (SANS 10320:2004). Currently in a draft form, interaction between the SAMREC Working Group and the SANS 10320 rewriting was undertaken to ensure alignment between the SAMREC Code and the SANS 10320 standards.

A South African Code for the Reporting Oil and Gas (SAMOG) has also been developed. This is a global reporting standard, which is aligned to oil and gas reporting standards throughout the world and addresses the oil- and gas-related amendments to Section 12 of the JSE Listings Requirements, which include a separate section for Oil and Gas Companies.

INTENTION OF SAMREC 2016

The guiding principles of the Code are 'transparency', 'materiality' and 'competency'. However, a common distortion of the principles of the Code has resulted in "unclear ambiguous presentations and selected reasonable information" (Stoker, 2009). A high level review of Mineral Resource and Mineral Reserve Statements provided on the web by exploration and mining companies will testify to this statement. For the most part, the omissions made by companies are not material, yet public reports fail to adhere to the guiding principle of the SAMREC Code.

The intention of the updating the Code, as has been the intention of the previous Codes, is to:

- provide a basis for minimum requirements for the reporting of Exploration Results, Mineral Resources and Mineral Reserves;
- provide a comparative basis for project/mine comparison;
- develop trust in the reporting of Exploration Results, Mineral Resources and Mineral Reserves;
- provide assistance to Competent Persons when reporting Exploration Results, Mineral Resources and Mineral Reserves.

The ambit of solid minerals and mining is vast when one considers the many types of deposits, the various commodities in these deposits, the mining and other engineering requirements, as well as the location of the projects or mines, so it would be virtually impossible to provide detailed requirements for each and every one of these possible situations. In the subtext, the Code must not be over-prescriptive, but rather must provide guidance. The guiding principles are that all material information be presented in a transparent manner. All required information that one would reasonably expect should be presented in a clear and unambiguous manner and should be based on work undertaken by a Competent Person (Stoker, 2009). In this way, all interested and affected parties and, in particular, investors or potential investors and their advisors, will be able to trust the reporting of Exploration Results, Mineral Resources and Mineral Reserves by exploration and mining companies of their projects or mines. As the Competent Person is required to be able to defend himself in front of his peers, the Code should also provide assistance and guidance to the Competent Person(s).

The Code will remain a guideline for mining professionals and other interested and affected parties. Because there are situations not specifically dealt with in the Code, all views should be considered in drafting the revised Code. These include consideration of easier and short reporting, taking note of a view that reporting against Table 1 is onerous, as well as the notion that some information is considered sensitive and therefore should not be reported publically. However, to address the comprehensive nature of the industry, some rigour is required and therefore not all aspects/suggestions could be included.

SAMREC CODE REVISION

The process of revision began by identifying critical issues that were unclear or contradictory, by appointing sub-committees to address these issues. Working papers under consideration were:

- Exploration Results;

- Independence;
- Competence;
- Reporting of Inferred Mineral Resource;s
- CRIRSCO core definitions;
- Reporting standard and format for Mineral Resources and Mineral Reserves.

In the process, further considerations of the revision included:

- Reporting of saleable products as an aspect of Reserve declaration;
- Reviews of other reporting codes recent updates;
- Clarification of the legal aspects and permit requirements/approvals for Resource and Reserve declarations;
- Consideration for social and environmental aspects relating to projects and mines;
- Alignment and updating of the Coal Resource and Reserve reporting;
- Inclusion of technical studies and a matrix relating to the different levels of study (Table 2);
- Alignment and updating of Diamond (and other gemstones) Resource and Reserve reporting;
- Inclusion of reporting on industrial minerals;
- Inclusion of the use of metal equivalents;
- Reconstitution of Table 1;
- A table of contents and the addition of compliance statements.

In April 2013, the revision process of the SAMREC Code began with the intention of reviewing various working papers and updates from other CRIRSCO Codes and include all relevant changes. Since the amended 2009 Code was released, the CRIRSCO template was also updated (November 2013). The different aspects considered by the SAMREC Working Group in the review are discussed below.

Glossary of Terms and Updating of Definitions

Key changes included the updating of the glossary of terms to provide a minimal consistency with the CRIRSCO reporting template. For instance, the definition of a Recognised Overseas Professional Organisation (ROPO) was updated to Recognised Professional Organisation (RPO). Other terms, such items as *review*, *Competent Person's Report* and *audit* have been added to the glossary of terms. Clause 9 has also been updated to reflect SAGC (statutory) and IMSSA (learned society) replacing PLATO.

Reporting Exploration Results and the Discussion of Exploration Targets

The guidelines associated with *Exploration Results* and *Exploration Targets* have significantly changed to provide improved guidance in the reporting of these data.

Clause 18 has been updated with the intention that *Exploration Results* must not be “presented in a way that unreasonably implies the discovery of potentially economic mineralisation” and should include relevant data and information relating to the mineral property (both positive and negative). The Code further advises that “historical data and information may also be included if, in the considered opinion of the Competent Person, such is relevant, giving reasons for such conclusions”. Guidance has also been provided that “the data and information may be derived from adjacent or nearby properties if the Competent Person can provide justification of continuity for such an association” (2016 SAMREC Code, in press).

Exploration Target is defined in Clause 19 of the 2016 Code. The clause demonstrates the importance of ensuring that a reported Exploration Target cannot be misconstrued or misrepresented as a Mineral Resource or Mineral Reserve, and that all disclosures of an Exploration Target must clarify whether the target is based on actual results or a proposed exploration programme.

Reporting of Mineral Resources

The area of reporting of *Mineral Resources* has also been updated, however not to the extent of *Exploration Results*. The 2016 Code provides additional direction to the Competent Persons when classifying the Mineral Resource. Items such as overall tonnages, densities, shapes, physical characteristics, grades or qualities and mineral contents influence the level of confidence and thus the classification. In addition, further guidance is provided to the key inputs into Clauses 22, 23 and 24 of the proposed 2016 SAMREC Code.

Amongst the important additions is “that Details regarding Exploration Targets or Mineralisation may not be included in Mineral Resource statements (Clause 29)”.

Inferred Mineral Resource

The updated definition of Inferred Mineral Resource adapts the JORC 2012 and CRIRSCO definitions that “it is reasonable to expect that the majority of Inferred Mineral Resources would upgrade to Indicated Mineral Resources with continued exploration.” This updated clause provides guidance as to the extent to which the Competent Person assumes geological continuity – an area that has been subject to abuse by some Competent Persons in the past.

Indicated Mineral Resource

The updated Indicated Mineral Resources definition has been revised to reflect the confidence in the Mineral Resource to allow mine planning to the level of a PreFeasibility Study or Feasibility Study, leading to the declaration of a Probable Mineral Reserve which can serve as the basis for major development decisions.

Measured Mineral Resource

Similar to the changes made to an Indicated Mineral Resource, the updated clause for Measured Mineral Resources provides guidance regarding the confidence and use of modifying factors to convert a Measured Mineral Resources through PreFeasibility Study or Feasibility Study to estimate a Probable or Proved Mineral Reserve. The following clause has been added to clarify the conversion of mineral resources to mineral reserves: “Depending upon the level of confidence in the various Modifying Factors it may be converted to a Proved Mineral Reserve (high confidence in Modifying Factors), Probable Mineral Reserve (some uncertainty in Modifying Factors) or may not be converted at all (low or no confidence in some of the Modifying Factors; or no plan to mine, e.g., pillars in an underground mine or outside economic pit limits)” (2016 SAMREC Code, in press).

Reporting of Saleable Products

The reference point at which Mineral Reserves are defined, usually the point where the ore is delivered to the processing plant (base metal and precious metal deposits), must be stated. It is important that, in all situations where the reference point is different, such as for a saleable product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported.

Technical Studies

The definition of the Technical Studies applied to Mineral Resources has been added to the Code with Clause 43 providing the terms of the use and disclosure of technical studies. For example, “During early exploration, some level of financial analysis may be carried out by a company on exploration data which might not include Mineral Resource estimates to assess the potential for the project to proceed to the next phase of exploration. These analyses are considered to be a part of the exploration program planning and are solely for internal company decision making purposes. They are not for public disclosure.”

Clauses 44, 45 and 46 have been added as definitions of the various types of Technical Study. To advise Competent Persons of the diverse parameters, such as level of engineering design, contingency, and accuracy of the Capital expenditure and Operating cost inputs to the technical studies, Table 2 is

included in the proposed SAMREC Code. The guidance provided in Table 2 is there to ensure clear understanding of the technical and accuracy levels of the various types of technical studies.

Alignment and Updating of Coal Resources and Reserves

SANS 10320: South African Guide to the Systematic Evaluation of Coal Resources and Coal Reserves has also been updated. Most of the update relates to definitions which align the SANS Code with the SAMREC and CRIRSCO definitions and approach. Notably, the classification of Proved and Probable Coal Reserve have been modified to reflect a minimum requirement of a PreFeasibility Study or Life of Plan which now aligns this definition with international requirements. The SANS document previously recommended a Feasibility Study to declare a Proved Coal Reserve.

Diamond (and Other Gemstone) Reporting

The Diamond Reporting section of the Code has been significantly enhanced in the rewriting of the SAMREC Code. Ten additional clauses as well as the introduction of a Figure to demonstrate the relationship between Diamond Exploration Results, Resources and Reserves has been included in the 2016 rewrite. Due to the quantity of changes in the Diamond section of the Code and the specific nature of diamond reporting, readers are referred to the 2016 SAMREC Code for elaboration of the improvements made to Diamond reporting. Key areas discussed are:

- Stone distribution;
- Diamond price;
- Geological domains;
- Minimum representative parcel or samples for various deposits;
- Use of kimberlitic indicator mineral chemistry in grade and value estimation;
- Valuation of micro diamonds and sampling protocols;
- Relationship between the micro- and macro-diamond portions of the total content curve;
- Recovery factors.

Reporting Industrial Minerals

The proposed 2016 SAMREC Code has introduced a section on the reporting of Industrial Minerals. This follows the current trend of the international reporting codes providing guidance for the reporting on Industrial Minerals. Providing advice such as ensuring that the Mineral Resource or Mineral Reserve estimation must be reported in terms of the mineral or minerals on which the project is to be based and must include the specification of those minerals, i.e., saleable product. SAMREC acknowledges that assays may not always be relevant, and other quality criteria may be more applicable, e.g., fragmentation, deleterious elements, etc. Other than these aspects, the factors underpinning the estimation of Mineral Resources and Mineral Reserves for industrial minerals are the same as those for other deposit types covered by the SAMREC Code. However, it may be necessary to take particular account of certain key characteristics or qualities, such as likely product specifications, proximity to markets and general product marketability. For some industrial minerals, it is common practice to report the saleable product rather than the 'as-mined' product, which is traditionally regarded as the Mineral Reserve. SAMREC's preference is that, if the saleable product is reported (point of reference), it should be in conjunction with, not instead of, reporting of the Mineral Reserve. The necessary specification must be clearly articulated.

Reporting Metal Equivalents

The reporting of Exploration Results, Mineral Resources or Mineral Reserves for polymetallic deposits in terms of metal equivalents (a single equivalent grade of one major metal) has been included. The requirement is that reporting must show details of all material factors contributing to the net value derived from each constituent. Key factors include the individual grades, metallurgical recoveries, basis of recoveries and prices for all metals/commodities. A statement must be given that all elements included in the metal equivalents calculation have a reasonable potential to be recovered and sold. Finally, the calculation formula used should be disclosed.

Recommended Table of Contents for Competent Person's Report

To promote consistent reporting, a table of contents has been provided in Appendix 1 of the new Code as a guideline. It is designed to incorporate all of the requirements of Table 1 and assist the Competent Person in providing a high standard of reporting.

Certificate of Competent Person

Similar to the Canadian reporting requirements (NI43-101), a certificate of the Competent Person has been introduced to the proposed 2016 SAMREC Code as a guideline. This is intended to set out the details of the Competent Person, affirm he has knowledge of the Code and to which sections he has contributed. Furthermore, it will provide the reader with confirmation that the Competent Person has the necessary qualifications and experience to sign off on the work being reported..

If Not, Why Not

The proposed requirement, when reporting Exploration Results or estimates of Mineral Resources and Mineral Reserves for maiden declarations and 'material changes to significant projects' is to report against Table 1 on an 'if not, why not' basis. Table 1 provides a checklist or reference of criteria to be considered by the Competent Person in developing their documentation and in preparing the Public Report.

CONCLUSION

The reasoning behind the updating of the SAMREC Code is to ensure that the Code remains current with recent developments and revisions made to other international Codes. The revision is intended to improve the Code, ensure that selective reporting is not taking place, increase the confidence in the reporting of the critical aspects of projects or mines and include all aspects that the reasonable investor would expect to find in the report.

The process, which began in 2013, in which the 2009 SAMREC Code has been revised to ensure that it remains relevant to the mining industry and keeps current with recent developments and revisions made to other international Codes, notably the CIM 2014 revision, the JORC 2012 revision, the PERC 2013 revision, and SME 2014 issue, is almost complete.

The 2016 SAMREC Code should be viewed as the latest version of a Code that will continue to change and develop as the mineral industry matures and further develops. Compliance to the Code remains a concern and, although the addition of the 'if not, why not' clause will improve reporting standards, further modifications of the Code will certainly take place.

ACKNOWLEDGEMENTS

The authors would like to acknowledge the members of the SAMREC Working Group for their contribution to the review and rewrite of the 2009 SAMREC Code and, in particular, the members of the SAMREC rewrite subcommittee: Mark Austin, Tarryn Flitton, Tania Marshall and Santhoshinie Mathuray.

REFERENCES

- Cawood, F. (2014). SAMREC/SAMVAL Committee (SSC) Work Session Outcomes, 26 August 2014. Available from www.samcode.co.za/samcode--ssc-mainmenu-66. [Accessed 20 March 2015].
- Committee for Mineral Reserves International Reporting Standards (CRIRSCO) (2014). Changes to the CRIRSCO International Reporting Template July 2006 to November 2013. .

- SAMREC (2009). *The South African Code for the Reporting of Exploration Results, Minerals Resources and Mineral Reserves (The SAMREC CODE 2009) Reporting*. 2007 edition as amended July 2009. Prepared by the South African Mineral Resource Committee (SAMREC) Working Group.
- Stoker, P. (2009). *The JORC Code and Coal*. Hunter Regional Branch AusIMM Talk, 29 April 2009.
- SAMREC (2015). *The South African Code for the Reporting of Exploration Results, Minerals Resources and Mineral Reserves (The SAMREC Code 2016) Reporting*. Prepared by the South African Mineral Resource Committee (SAMREC) Working Group. In press.
- Wikipedia (2014). Available from: [www.en.wikipedia/regulatory compliance](http://www.en.wikipedia/regulatory%20compliance). [Accessed 16 April 2015].

