



Update of the Resource and Reserve Reporting Codes and Standard For the Coal Industry

The SAMREC, SAMVAL & SABS Working Group Committees will give a brief presentation entitled:

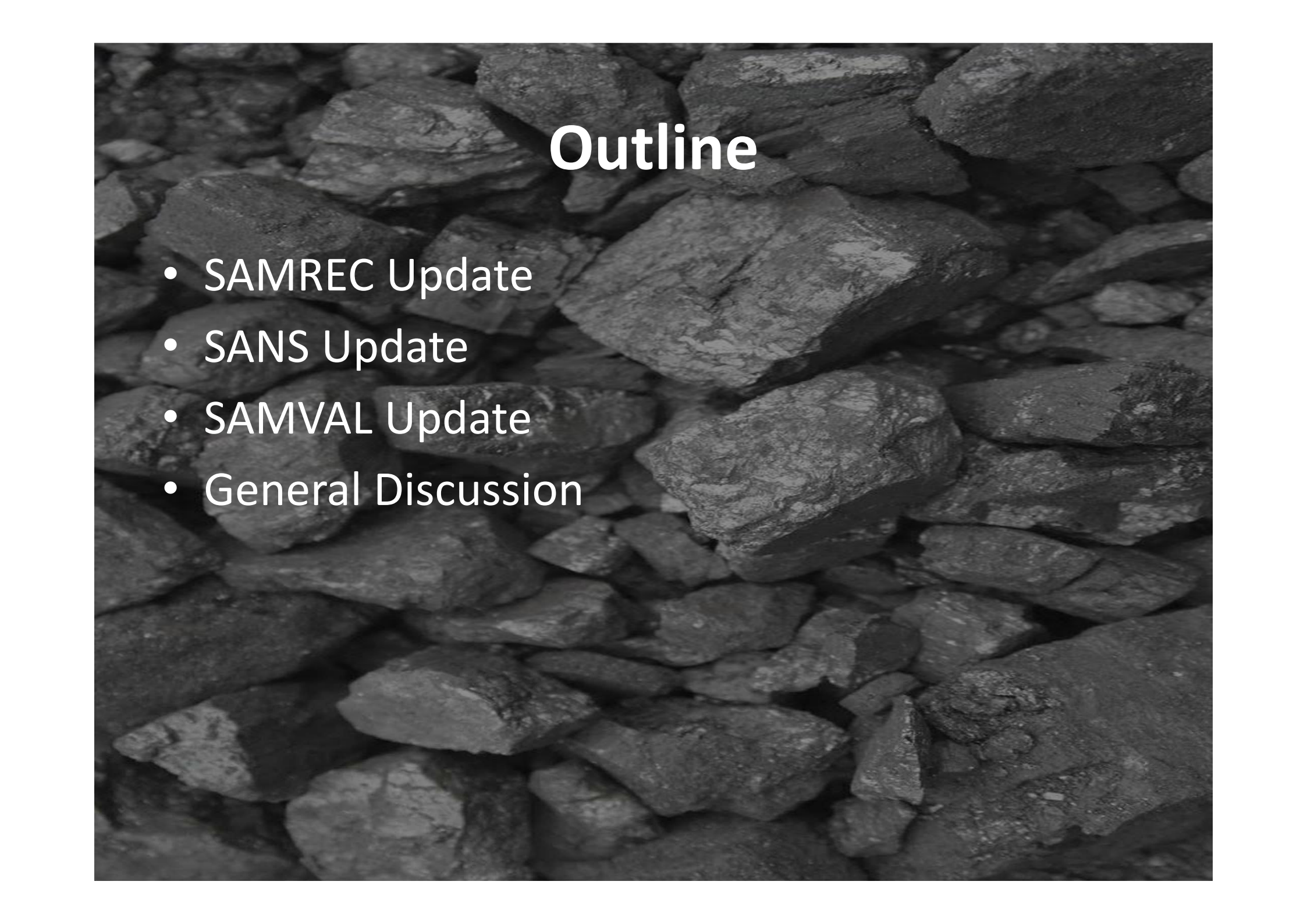
***“The update of the SAMREC & SAMVAL Codes and SANS 10320:
Progress and Changes”***

WHEN: Tuesday 31st March 2015, 14:00 – 16:00pm

WHERE: Witbank, The Rec Club, Main Hall (Landau Village)
(25°56'46.32"S, 29°12'31.67"E)

RSVP: santhoshnie.mathuray@angloamerican.com

Cost: None



Outline

- SAMREC Update
- SANS Update
- SAMVAL Update
- General Discussion



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**THE SOUTH AFRICAN CODE FOR THE
REPORTING OF EXPLORATION RESULTS,
MINERAL RESOURCES
AND MINERAL RESERVES
(THE SAMREC CODE)**

**Release in
2015**

2016 EDITION

**Launch and
Effective
Date May
2016**

Prepared by:
The South African Mineral Resource Committee
(SAMREC) Working Group

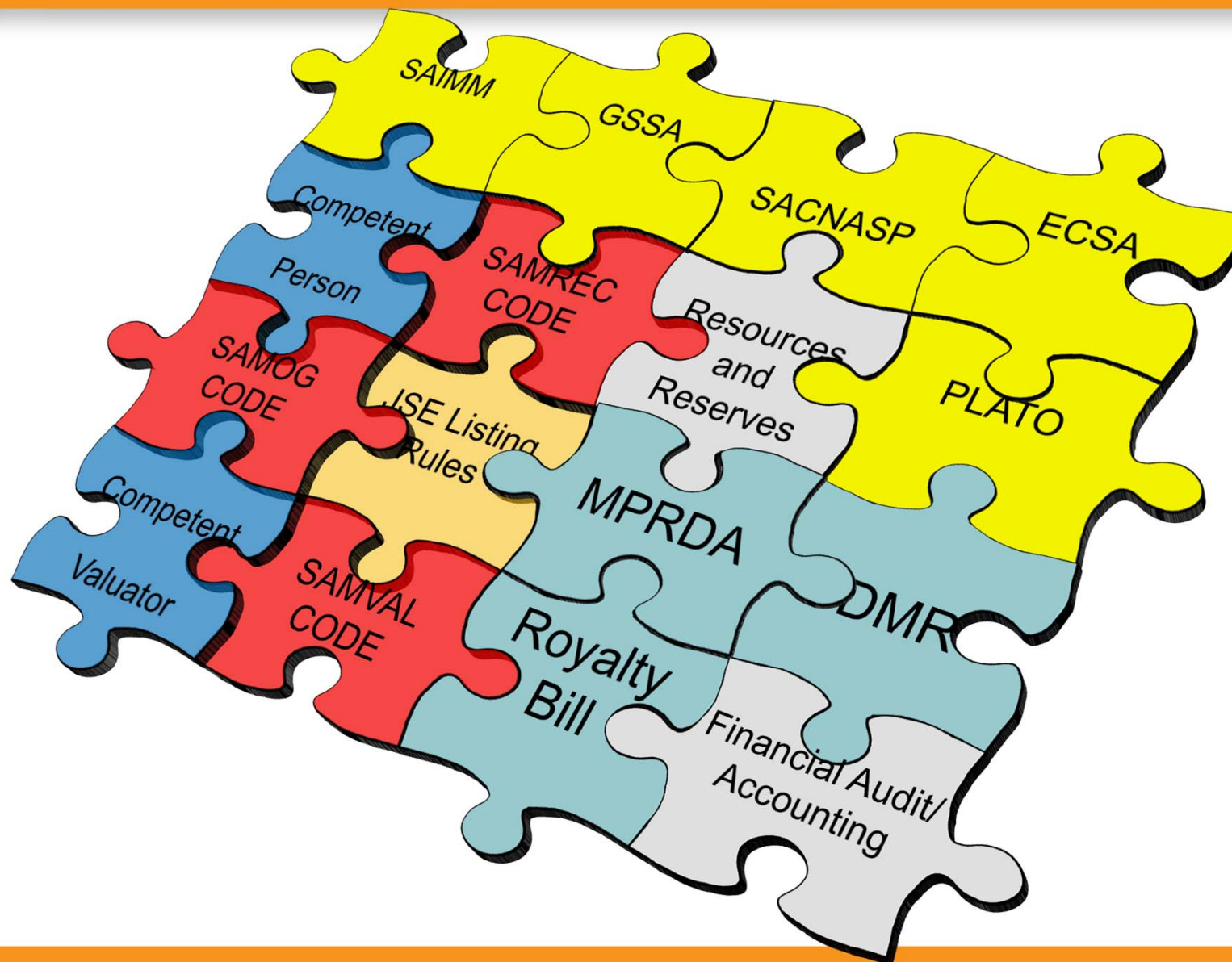
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South African Framework



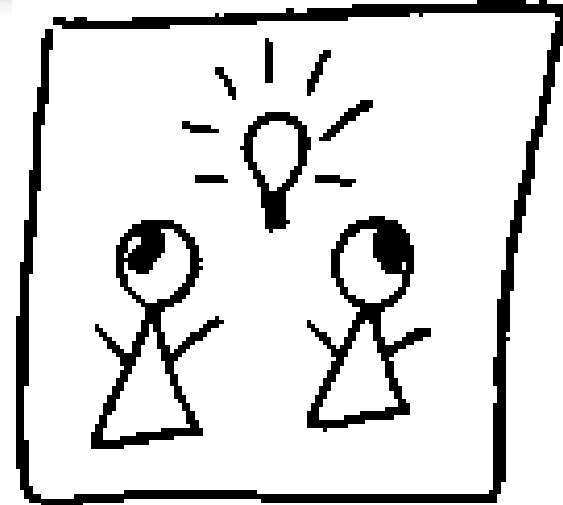


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How are we doing it?

- Interested industry professionals meet monthly
- Go through Code section by section
- Sub-committee to deal with issues and provide feedback
- Critical path is the completion of all the issue papers
- Put out for debate
- Put out for comment
- Release and write a companion volume

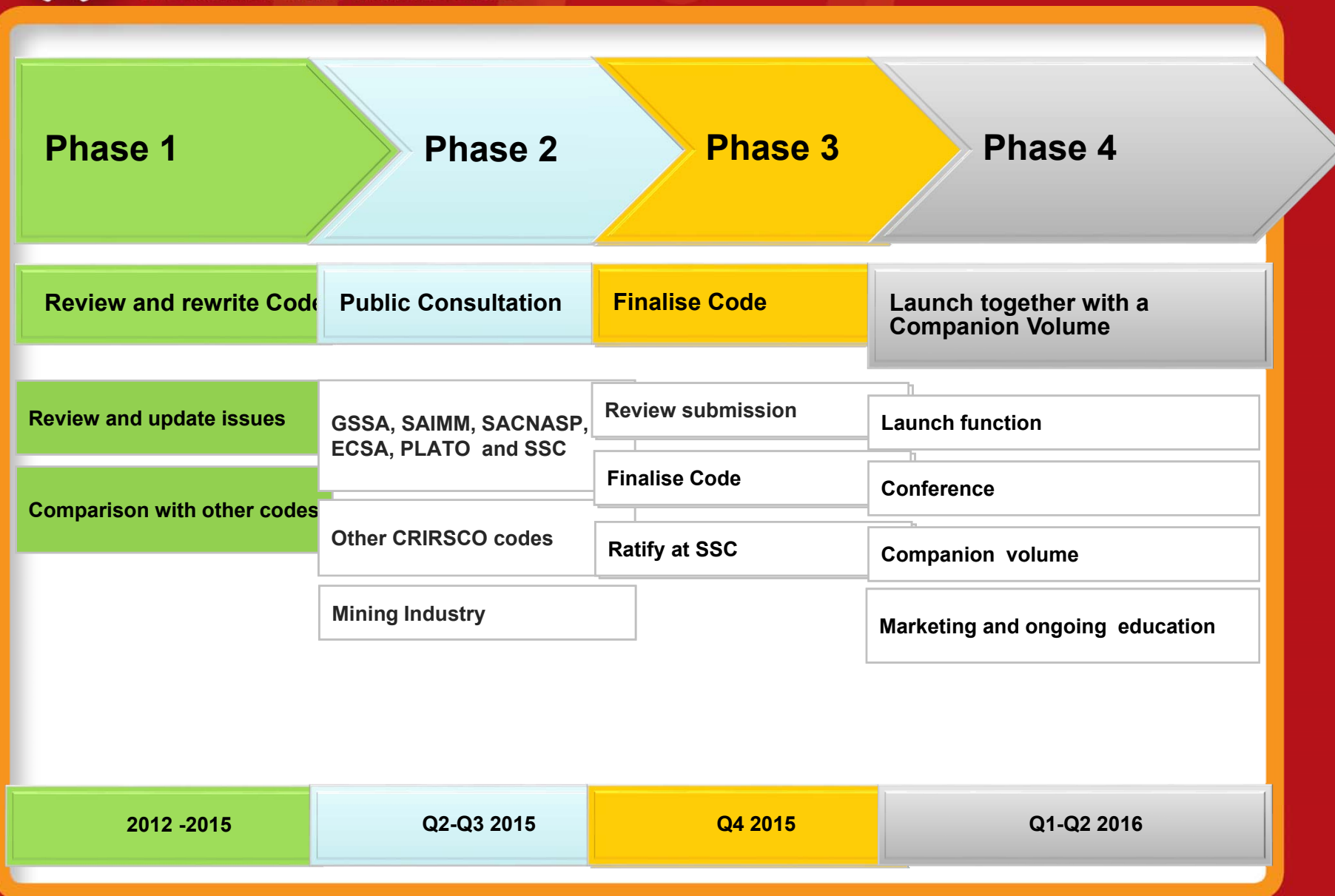




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Update Process





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Aspects to change

- CRIRSCO Definitions adopted
- Exploration Results
- 'if not, why not' principle
- New Table 1 format
- Emphasis on economics & transparency/materiality
- Technical Studies
- Independence
- Point of reference
- Site Visit





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Aspects to change

- Revision of aspects relating to Coal
- More comprehensive Diamond and Gemstone section
- Introduction of a section on Industrial Minerals
- Introduction of Metal Equivalents
- Table of contents
- Signature page
- Revision of the Classification Diagram
- South African Geomatics Council (SAGC) (statutory) and Institute of Mine Surveyors of South Africa (IMSSA) (learned society) replace PLATO





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CRIRSCO Definitions adopted

- Comparison with all Codes
- Adoption of the CRIRSCO Definitions

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 imperfect 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.

(CRIRSCO Website)

- Family of Codes
- Same approach
- Identical definitions
- Conformity – investor confidence
- Compare Projects/Mines





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Exploration Results

- More definition provided
- Must not be presented in a way that unreasonably implies the discovery of potentially economic mineralisation.
- At least some physical evidence of assumed continuity of the mineralisation on the property of interest must be presented
- Balanced reporting is required.
- Details of the Mineralisation may not appear in any tabulation of Mineral Resources or be included in a Scoping Study or Pre-feasibility/Feasibility study.
- Adoption of Mineralisation in place of Deposit



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‘if not, why not’

- Agreed to the principle
- Used of a verb i.e. ask a question
- Not an additional reporting requirement
- Triggers:
 - Maiden announcement
 - Significant change of a Material Project



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Updated Table 1

Table 1 is applicable to all declarations in terms of the guidelines of the SAMREC Code

SAMREC TABLE 1			
	Exploration Results	Mineral Resources	Mineral Reserves
General			
Section 1: Project Outline			
Section 2: Geological Setting, Deposit, Mineralisation			
Section 3: Exploration and Drilling, Sampling Techniques and Data			
Section 4: Estimation and Reporting of Exploration Results and Mineral Resources			
Section 5: Technical Studies			
Section 6: Estimation and Reporting of Mineral Reserves			
Section 7: Audits and Reviews			
Section 8: Other Relevant Information			
Section 9: Qualification of Competent Person(s) and other key technical staff. Date and Signature Page			
Section 10: Reporting of Diamonds and Gemstones			
Section 11: Reporting of for Coal Resources and Reserves			



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Updated Table 1

Section 4: Estimation and Reporting of Exploration Results and Mineral Resources					
4.1	Geological model and interpretation	(i)	Describe the geological model, construction technique and assumptions that forms the basis for the Exolration Results or Mineral Resource estimate. Discuss the sufficiency of data density to assure continuity of mineralization and geology and provide an adequate basis for the estimation and classification procedures applied.		
		(ii)	Describe the nature, detail and reliability of geological information with which lithological, structural, mineralogical, alteration or other geological, geotechnical and geo-metallurgical characteristics were recorded.		
		(iii)	Describe any obvious geological, mining, metallurgical, environmental, infrastructural, legal and economic factors that could have a significant effect on the prospects of any possible exploration target or deposit.		
		(iv)		Discuss geological data that could materially influence the estimated quantity and quality of the Mineral Resource.	
		(v)		Discuss whether consideration was given to alternative interpretations or models and their possible effect (or potential risk) if any, on the Mineral Resource estimate.	
		(vi)		Discuss geological discounts (e.g. magnitude, per reef, domain, etc.), applied in the model, whether applied to mineralized and / or un-mineralized material (e.g. potholes, faults, dykes, etc).	
4.2	Estimation and modelling techniques	(i)	The estimation techniques and assumptions used to determine the grade and tonnage ranges shall be described in detail.		
		(ii)		Discuss the nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values (cutting or capping), compositing (including by length and/or density), domaining, sample spacing, estimation unit size (block size), selective mining units, interpolation parameters and maximum distance of extrapolation from data points.	
		(iii)		Describe assumptions and justification of correlations made between variables.	
		(iv)		Any relevant specialized computer program (software) used should be named (with the version number) together with the parameters used.	
		(v)		State the processes of checking and validation, the comparison of model information to sample data and use of reconciliation data, and whether the Mineral Resource estimate takes account of such information.	
		(vi)		Describe the assumptions made regarding the estimation of any co-products, by-products or deleterious elements.	



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Expansion of aspects of Table 1

- New format
- Tried to follow table of contents
- Looked widely at other codes and requirements
- Specific Coal requirements
- Emphasis on economics & transparency/materiality
- Issue of what investors require – noted in Readers Panel
- Information about the assessment of RPEEE





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Environmental / Social

- Permitting required
- Reasonable expectation of obtaining
- Describe environmental liabilities / compliance methods and costs, including reclamation and closure and their planned funding. Waste and process residue disposal options to be included.
- A statement should be provided to the effect that mandatory social and labour management programmes, if any, have been approved or there is reasonable basis to believe that approval can be obtained. Costs of such programmes should be considered in Techno economic studies.



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Technical Studies

- More definition and guidelines included for:
 - Scoping Study
 - Pre-feasibility Study
 - Feasibility Study
- Guideline Table added
- Additional table in line with SME





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Table 2

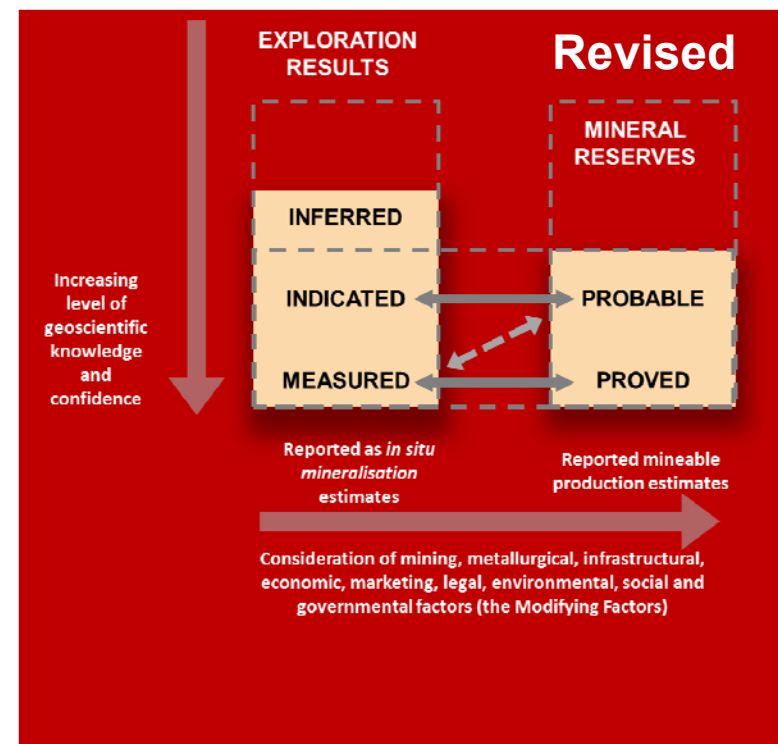
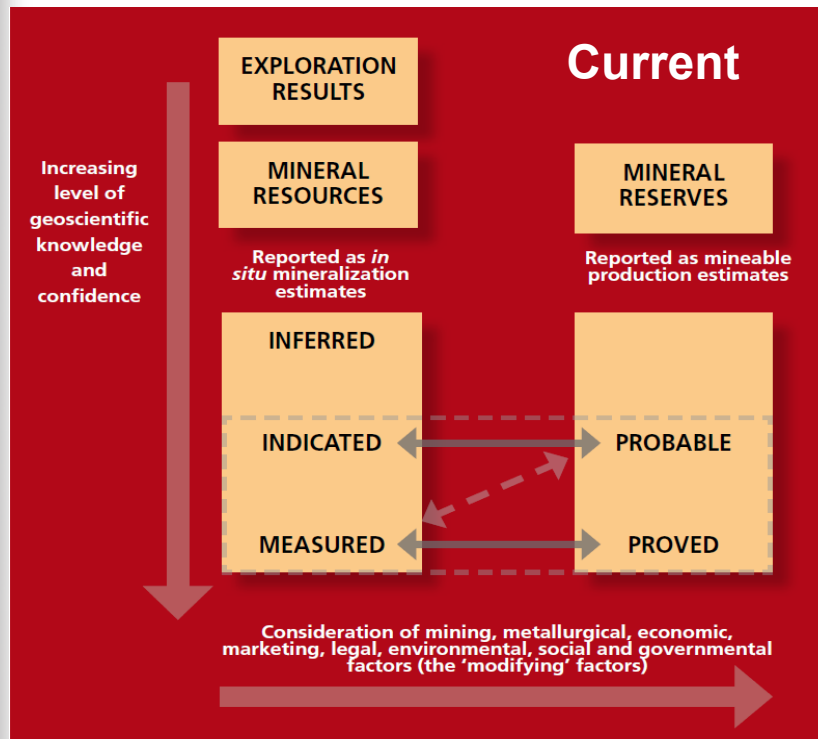
Capital Cost Category	Scoping Study	Prefeasibility Study	Feasibility Study
Basis of Estimate to include the following areas:			
Civil/structural, architectural, piping/HVAC, electrical, instrumentation, construction labour, construction labour productivity, material volumes/amounts, material/equipment, pricing, infrastructure	Order-of-magnitude, based on historic data or factoring. Engineering < 5% complete.	Estimated from historic factors or percentages and vendor quotes based on material volumes. Engineering at 5-20% complete.	Detailed from engineering at 20% to 50% complete, estimated material take-off quantities, and multiple vendor quotations
Contractors	Included in unit cost or as a percentage of total cost	Percentage of direct cost by area for contractors; historic for subcontractors	Written quotes from contractor and subcontractors
Engineering, procurement, and construction management (EPCM)	Percentage of estimated construction cost	Percentage of detailed construction cost	Calculated estimate from EPCM
Pricing	FOB mine site, including taxes and duties	FOB mine site, including taxes and duties	FOB mine site, including taxes and duties
Owner's costs	Historic estimate	Estimate from experience, factored from similar project	Estimate prepared from detailed zero-based budget
Environmental compliance	Factored from historic estimate	Estimate from experience, factored from similar project	Estimate prepared from detailed zero-based budget for design engineering and specific permit requirements
Escalation	Not considered	Based on entity's current budget percentage	Based on cost area with risk
Accuracy Range (Order of magnitude)	±50%	±15-25%	±10-15%
Contingency Range (Allowance for items not specified in scope that will be needed)	30-50%	15-30%	10% - 15% (actual to be determined based on risk analysis)
Operating Cost Category	Scoping Study	Prefeasibility Study	Feasibility Study
Basis	Order-of-magnitude, based on historic data or factoring.	Estimated from historic factors or percentages and vendor quotes based on material volumes.	Detailed estimate
Operating quantities	General	Specific estimates with some factoring	Detailed estimates
Unit costs	Based on historic data for factoring	Estimates for labour, power, and consumables, some factoring	Letter quotes from vendors; minimal factoring
Accuracy Range	±25-50%	15% - 25%	10% - 15%
Contingency Range (Allowance for items not specified in scope that will be needed)	+ 25%	+ 15%	+ 10% (actual to be determined based on risk analysis)



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Classification Diagram



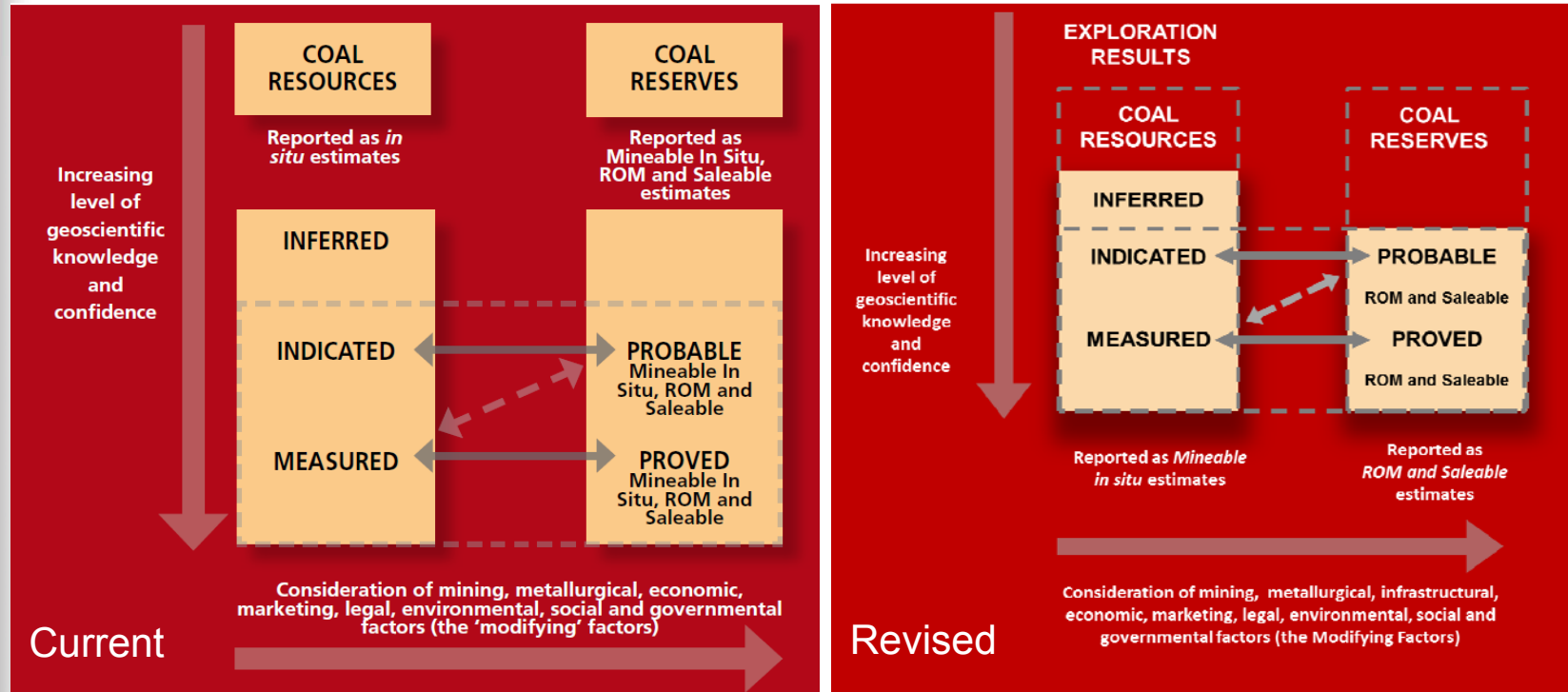
Modifying Factors are considerations used to convert Mineral Resources to Mineral Reserves. These include, but are not restricted to, mining, processing, metallurgical, **infrastructure**, economic, marketing, legal, environmental, social and governmental factors.



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Classification Diagram: Coal



A 'Mineable Tonnes In Situ Coal Resource' is the tonnage and coal quality, at a specified moisture content, contained in the coal seams or sections of the seams at the theoretical mining height, adjusted by the geological loss factors.

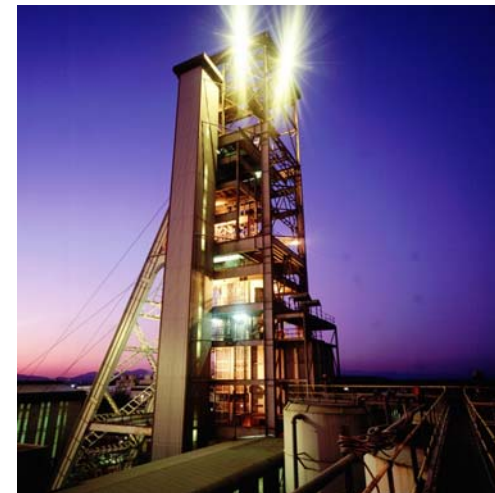


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Point of Reference

- Introduction of the principle
- Point of sale applicable to bulk commodities and industrial minerals
- Shaft head for precious and base metals
- The reference point at which Reserves are defined, usually the point where the ore is delivered to the processing plant, must be stated. It is important that, in all situations where the reference point is different, such as for a saleable product, a clarifying statement is included to ensure that the reader is fully informed as to what is being reported.





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Revision of aspects relating to Coal

- The Systematic evaluation of Coal Deposits, Coal Resources and Coal Reserves (SANS 10320:2015) provides the methodologies and definitions of the relevant terms that should be considered when preparing reports on Coal Resources and Coal Reserves.
- Table 1 still applies
- The confidence levels in the modifying factors must be disclosed for all ROM and Saleable Reserves.





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Independence

- Defined by the commissioning entity
- No Undue Influence





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Diamond and Gemstone section

- More comprehensive definition and general discussion
- Concern with alluvial diamonds addressed





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Introduction of a section on Industrial Minerals

- Adoption of JORC approach
- Guidance provided on deleterious minerals and product specifications





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Table of Contents

- Introduction of a Table of Contents
- Along the lines of NI 43-101

RECOMMENDED TABLE OF CONTENTS FOR COMPETENT PERSONS REPORT ("CPR")

This table of contents is given only as a guide to the compilation of CPR's. It is designed to incorporate all of the requirements of Table 1. It must be read in conjunction with Table 1 and the Code.

Title Page

Include a title page setting out the title of the CPR, the general location of the mineral project, the name and professional designation of each CP, the effective date of the CPR and the date of signature.

Executive Summary

Briefly summarize important information in the CPR, including property description and ownership, geology and mineralisation, the status of exploration, development and operations, Mineral Resource and Mineral Reserve estimates, and the CP's conclusions and recommendations.

Table of Contents

Provide a table of contents listing the contents of the CPR, including figures and tables.

1 Introduction

- Terms of reference and scope of work
- Sources of information
- Units and currency
- Site inspection or Field involvement of CP
- Disclaimers and reliance on other experts or third party information

2 Project Outline

- Property description
- Property location
- Country profile
- Legal aspects and permitting
- Royalties and liabilities

3 Accessibility, Physiography, Climate, Local Resources and Infrastructure

- Topography, elevation and vegetation
- Climate and weather
- Access
- Proximity to population centres and nature of transport
- General infrastructure

4 Project History

- Previous ownership
- Previous exploration and/or development
- Previous Mineral Resource Estimates
- Previous Mineral Reserve Estimates



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Signature page

- Inclusion of an “Certificate of Competent Person”

CERTIFICATE OF COMPETENT PERSON

Certificate of Competent Person

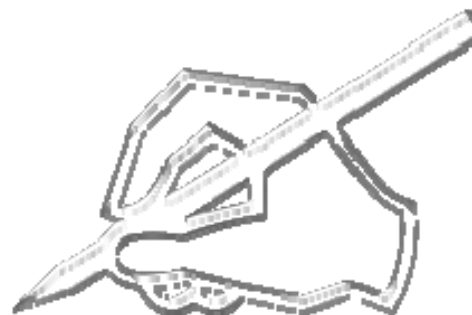
As the author of the report entitled [report title], I hereby state:-

1. My name is [Competent Person's name] and [details – position in company, company name, address]..
2. {profession and details of registration body}.
3. [qualifications]
4. [relevant experience].
5. I am a “Competent Person” as defined in the SAMREC Code.
6. [Work undertaken or services rendered].
7. [Site inspection details]
8. [details of aspects of this report for which the CP is responsible].
9. I am not aware of any material fact or material change with respect to the subject matter of the Report, which is not reflected in the Report, the omission of which would make the Report misleading.
10. I declare that this report appropriately reflects the Competent Person's/author view
11. I am independent/not independent of [name of issuer].
12. I have read the SAMREC Code (2015) and the Report has been prepared in accordance with the guidelines of the SAMREC Code.
13. I do not have nor do I expect to receive a direct or indirect interest in the [project/mine details] or [name of issuer] OR I am an employee/shareholder/director or other interested party in respect of the issuer [name of issuer] or the mineral asset.
14. At the effective date of the Report, to the best of my knowledge, information and belief, the Report contains all scientific and technical information that is required to be disclosed to make the Report not misleading.

Dated at [place] and [date]

[Signed]

[name of CP]





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Public awareness

- Roadshows
- Companion Volume
- Exposure draft for distribution



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Self Regulation

- Complaints are filed
- Procedure to review/assess

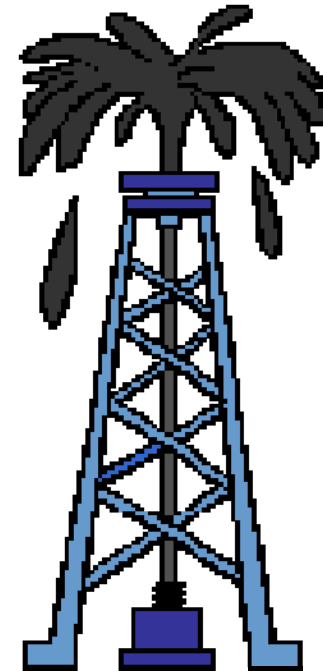


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SAMOG - Oil and Gas

- New Code in SAMCODE family
- Adopted the NI51-101 standards
- Approved by SSC





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Exposure Document

SAMREC 2009		SAMREC 2015		
GLOSSARY OF TERMS				
			Audit	A systematic and detailed examination of the Mineral Resource and Mineral Reserve, processes of estimation (including geological and geotechnical and other models), assumptions and conclusions undertaken in order to validate the appropriateness of the various components which contribute to the estimates of the Mineral Resource and Mineral Reserve, An Audit includes a detailed examination of the base data and validation of the Mineral Resources estimates. When compliance to the SAMREC Code is declared, the audit must have been conducted by a Competent Person.
	The Companies Act	The Companies Act No 61 of the Republic of South Africa of 1973, as amended or any law that may wholly or in part replace it from time to time.	The Companies Act	The Companies Act No 71 of the Republic of South Africa of 2008, as amended or any law that may wholly or in part replace it from time to time.
			Competent Person's Report (CPR)	A CPR is a technical report prepared by a Competent Person (CP) The contents are determined by the nature/status of the project/mine being reported.
	Dilution /Contamination	Waste material that is mined during the course of mining operations and thereby forms part of the Reserve	Dilution /Contamination	Waste material that is mined during the course of mining operations and thereby forms part of the Mineral Reserve
	Discard and Reject Coal	Discard and Reject Coal are coal or carbonaceous material resulting from mining or coal processing operations with quality parameters that place it outside the current range of saleable coals.		



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Underlying Principles Unchanged

4

The Code takes into account issues of a global nature while addressing certain circumstances unique to South Africa. The following principles should be considered in the application of the Code:

Materiality: A Public Report contains all the relevant information that investors and their professional advisors would reasonably require, and expect to find, for the purpose of making a reasoned and balanced judgement regarding the Exploration Results, Mineral Resources and Mineral Reserves being reported on.

Transparency: The reader of a Public Report must be provided with sufficient information, the presentation of which is clear and unambiguous, to understand the report and not be misled.

Competency: The Public Report is based on work that is the responsibility of suitably qualified and experienced persons who are subject to an enforceable Professional Code of Ethics.

The author of the Public Report should be satisfied that: his work has not been unduly influenced by the organization, company or person commissioning a report, or any report that may be deemed a Public Report; all assumptions are documented; and adequate disclosure is made of all material aspects that the informed reader may require in order to make a reasonable and balanced judgement thereof.

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Questions?





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ALL SLIDES AND NEWS RELEASE

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