

Deloitte.



**The Importance of Reliable
Mineral Resources and
Reserves Reporting**

The Bottom Line for Investors

1. Reliable Mineral Resources are critically important

The businesses of mining project development and mine production by nature contain significant risks. They depend upon, among other things, reliable estimation of Mineral Resources and Reserves and competent management.



Mineral Resources and Reserves are the foundation of a mining or mineral company, as they represent the basis for the future viability of the company's operations. Therefore, it is critical that their quantity and quality are estimated correctly. Estimating Mineral Resources and Reserves is the process where an appropriately qualified and experienced person determines the quantities of a Mineral Resource and Reserve by interpreting and assessing data and reporting the results in accordance with an applicable mineral reporting code. The estimation is presented in the form of a Mineral Resource and Reserve Statement.

The declaration of Mineral Resources and Reserves for JSE-listed companies is governed by the South African Code for the Reporting of Exploration Results, Mineral Resources and Mineral Reserves (SAMREC). Equivalent Codes are applicable to mining companies in other reporting jurisdictions. The Codes are similar and are all based on the same fundamentals of transparency, competence, and materiality. The SAMREC Code (and equivalent Codes) specifies the requirements to qualify as a Competent Person, which includes, but is not limited to, registration with a recognised professional association and a certain minimum experience in the commodity.

Governance of Mineral Resources and Reserves (or “R&R”) reporting is ideally based on a two-tiered structure established by the mining or mineral company. This structure includes comprehensive internal controls that are supplemented by independent external reviews and input:

1.

Internal processes would typically consist of two elements being the company's Internal Audit Governance, and the other specifically being an Internal Resource and Reserve Committee responsible for annual R&R Reviews;

2.

The external processes would typically consist of an independent review of the process controls and procedures around the planning cycle, and annual independent technical reviews of the company's R&R estimates.

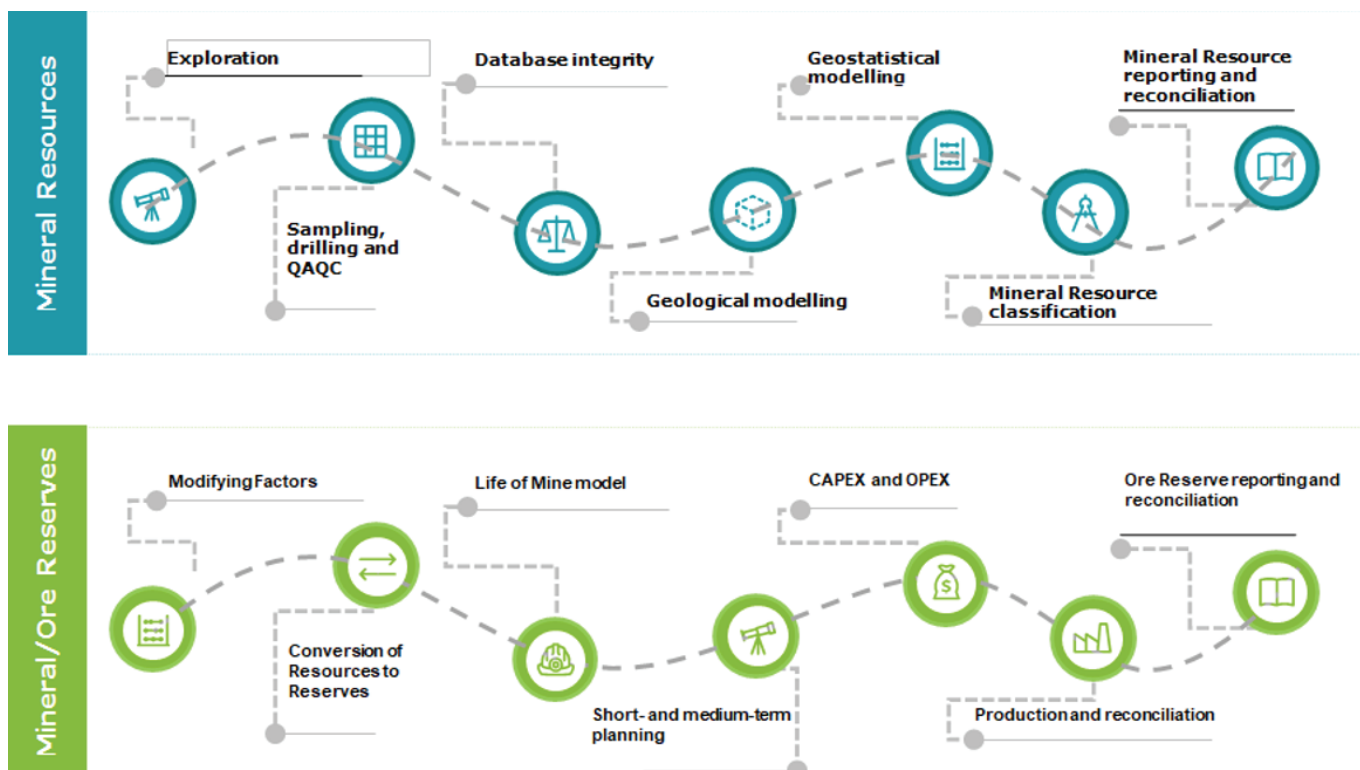
Mineral Resources and Reserves are the foundation of a mining or mineral company, as they represent the basis for the future viability of the company's operations. Therefore, it is critical that their quantity and quality are estimated correctly.

2. Governance is required throughout the Mineral Resource and Reserve planning cycle

The Mineral Resource, Reserve and Life-of-Mine Planning Cycle is complex and inter-linked. Governance through strong internal controls plays a large role in ensuring the outputs are reliable and achievable.

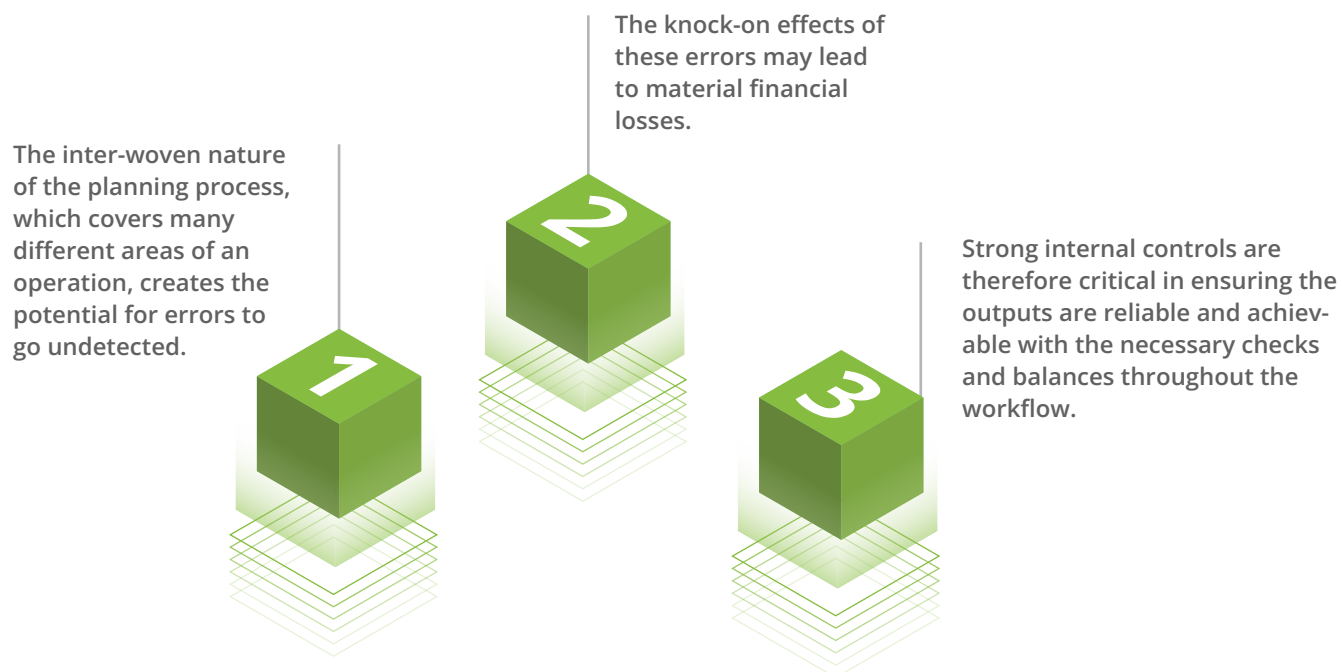
Confirmed Mineral Resources and Reserves provide the necessary platform for Life-of-Mine (“LoM”) planning that generally works on an annual cycle. This also pulls together the short- and medium-term business plans and underpins the long-term strategic plan. Together with the proposed production schedule and relevant LoM planning assumptions (such as operating costs, capital expenditure, commodity prices etc.), the Mineral Reserves are key inputs into the financial model. In addition, according to the SAMREC Code, the LoM plan is limited to Proved and Probable Mineral Reserves.

This highlights the importance of ensuring Mineral Resource and Reserve estimates are determined by a robust process, and more importantly, the conversion of Resources to Reserves is accurate and has been appropriately verified. The complexity of Mineral Resource, Reserve and LoM planning processes can be seen from the schematic below.



Mineral Resource Management requires a strong grasp of technical controls across the mine value chain.

3. Internal controls are the key pillars to reliable Resources and Reserves



Management should have the assurance that the controls at the operational level are effective, that deficiencies have been adequately identified, and controls are accurately detailed and implemented. All internal controls within the mine value chain must work together at the same level of accuracy and have the same end goal. This allows for improved efficiencies, quality of information, and the agility to respond quickly and effectively to change. These controls will also assist with governance in general as well as listing and disclosure requirements.

From exploration to the delivery of the final commodity, control environments must work seamlessly together to provide maximum value, to protect, to improve, and to fulfil governance requirements.

Controls should form an integral part of a mining company's internal governance process. Conducting independent reviews is a measure to safeguard the integrity of the controls.

4. The value of independent Resource and Reserve Reviews

Mining and minerals development companies are increasingly electing to have their Mineral Resources and Reserves assessed by independent experts. An independent assessment is an external view of the processes employed, validation of important assumptions, and assessment of the adoption of best practice.

Mining and minerals companies often chose to have independent R&R Reviews conducted on their Resource and Reserve estimates and the internal processes which generate them. This provides a check that the estimates are robust and can withstand technical scrutiny. This also confirms that their Resource and Reserve Statement is compliant with the relevant reporting code. To gain this assurance, it is necessary to confirm if these processes follow best practice, with questions such as:

- Do Internal controls address the Governance policy?
- Have shareholders been protected and has further value been created for them?
- Is the financial model appropriately and accurately reflecting the Resource and Reserve?

A detailed independent review will confirm the flow of the information through the series of Mineral Resource Management processes needed to successfully operate a mine. The detailed review will form part of a Company's annual reporting cycle. The purpose is to provide comfort by interrogating and validating the processes behind:

- The reliability of the key assumptions such as Life-of-Mine, overburden stripping costs, metal accounting, rehabilitation provision and financial model;
- The accuracy of measurements tested by conducting independent checks;
- Documentation of procedures and opinion on whether procedures are in place and effective;
- Assessment of the risks and mitigation measures and provide recommendations.

Having a R&R Review conducted by an independent party is not required by any regulation. However, performing an independent R&R Review has become best practice for listed mining companies.

Deloitte Technical Mining Advisory is the firm's unique and market-leading competency providing integrated technical mining services, with commercial insight, that create and preserve value. Our team is recognized for its comprehensive technical abilities in the estimation of Mineral Resources and Mineral Reserves and preparation of corporate project disclosure documentation. We combine our technical mining advisory skills with strong financial and commercial due diligence, transaction services, valuation and post deal integration services.

Key Contacts



Stewart Nupen

Associate Director, DTMA | Deloitte Africa

✉ snupen@deloitte.co.za

in



Ian Benning

Associate Director, DTMA | Deloitte Africa

✉ ibenning@deloitte.co.za

in



Neil McKenna

Director, Financial Advisory | Deloitte UK

✉ nemckenna@deloitte.co.uk

in



Munyar Chirisa

Senior Manager, Financial Advisory | Deloitte Canada

✉ muchirisa@deloitte.ca

in

Deloitte.

Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited (“DTTL”), its global network of member firms and their related entities. DTTL (also referred to as “Deloitte Global”) and each of its member firms are legally separate and independent entities. DTTL does not provide services to clients. Please see www.deloitte.com/about to learn more.

Deloitte is a leading global provider of audit and assurance, consulting, financial advisory, risk advisory, tax and related services. Our network of member firms in more than 150 countries and territories serves four out of five Fortune Global 500® companies. Learn how Deloitte's approximately 286,000 people make an impact that matters at www.deloitte.com.

This communication contains general information only, and none of Deloitte Touche Tohmatsu Limited, its member firms or their related entities (collectively, the “Deloitte network”) is, by means of this communication, rendering professional advice or services. Before making any decision or taking any action that may affect your finances or your business, you should consult a qualified professional adviser. No entity in the Deloitte network shall be responsible for any loss whatsoever sustained by any person who relies on this communication.

© 2023. For information, contact Deloitte Touche Tohmatsu Limited.