


When you think with a global mind
problems get smaller

Importance of Sampling in the SAMREC Code

Ken Lomborg, Senior Principal, Coffey Mining



The slide features the Coffey logo in the top right corner. The main visual is a network diagram with a globe at its center. The globe is connected to various geometric shapes: a blue square, an orange triangle, a blue circle, an orange hexagon, a blue triangle, and an orange diamond. These shapes are further interconnected by lines, creating a complex web of connections. The text on the left side of the slide is in a clean, sans-serif font.

Agenda

Introduction

Pertinent Aspects of the SAMREC Code


- Table 1
- The Competent Person

Sampling Process Governance


- Sampling Protocols and Design
- Implementation
- Review
- Apply to Exploration Results, Mineral Resource and Mineral Reserve
- Public Reporting

Other Sampling Methods

Conclusions



The slide features the Coffey logo in the top right corner. The main content is a list of agenda items. On the right side, there is a 3D rendering of a red figure standing at a white podium, gesturing with its hands. The text is in a clean, sans-serif font.

INTRODUCTION 

Declarations of Exploration Results, Mineral Resources and Reserves

- Scientific information and interpretation

Reliant on

- Sampling
- Analytical Techniques
- Data Management

Sampling considered of relatively low importance

Repetitive and attention to detail

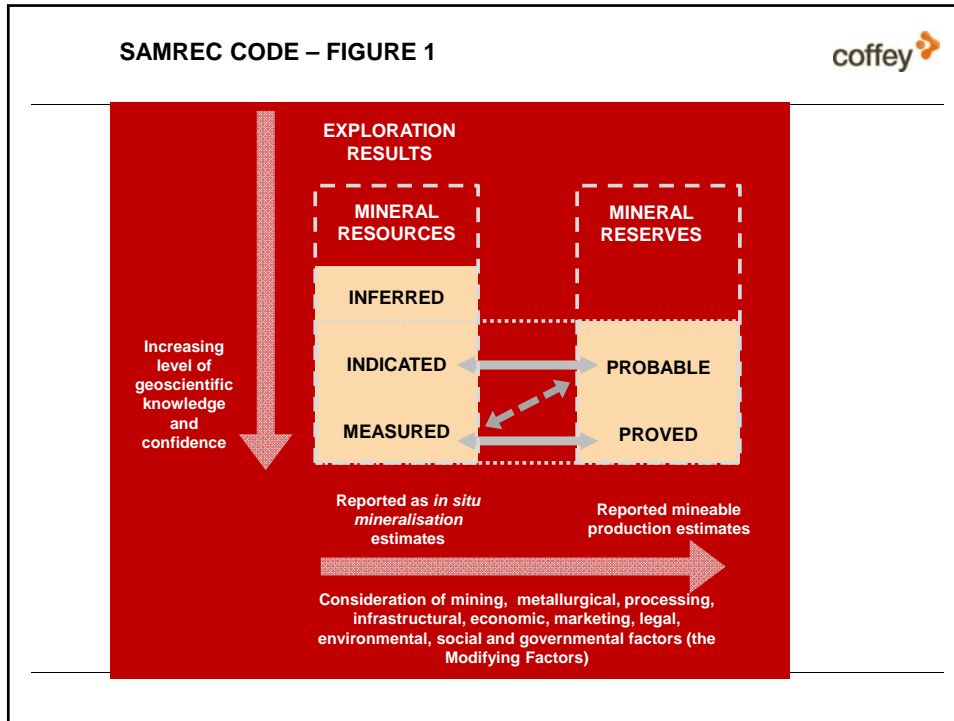
Use of semi skilled labour

Data Integrity

If it's not accurate, it might as well not exist.

 COMMITTEE FOR MINERAL RESERVES
INTERNATIONAL REPORTING STANDARDS 

TO PROMOTE INTERNATIONAL BEST PRACTICE IN THE REPORTING OF MINERAL EXPLORATION RESULTS, MINERAL RESOURCES AND MINERAL RESERVES



PERTINENT ASPECTS OF THE SAMREC CODE

A **required minimum standard** for the Public Reporting of Exploration Results, Mineral Resources and Mineral Reserves

Considered relevant to **all solid minerals**


Present information about mineral assets to

- investors and potential investors
- Advisors
- Satisfy regulatory requirements

The principles that are applicable to the Code:

- Materiality
- Transparency
- Competency

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


PERTINENT ASPECTS OF THE SAMREC CODE


Not prescriptive set of rules

Vast jurisdiction

- Commodities,
- Mineralisation styles,
- Locations etc

Data integrity







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 for Coal Resources and Reserves		
Section 11: Reporting of Diamonds and Gemstones		
Section 12: Reporting of Industrial Minerals		
Section 13: Reporting using Metal Equivalents		

The Competent Person



SAMREC CODE

A **Competent Person** must have a minimum of five years relevant experience in the style of mineralisation or type of deposit under consideration and in the activity which that person is undertaking..

Persons being called upon to sign as a Competent Person must be clearly satisfied in their own minds that they are able to face their peers and demonstrate competence in the commodity, type of deposit and situation under consideration.

Documentation detailing Exploration Results, Mineral Resources and Mineral Reserves from which a Public Report is prepared must be prepared by, or under the direction of, and signed by a Competent Person.



People Interaction - Reliance on the CP



Investors, decision makers, promoters or board members

- Seldom know enough about sampling
- or Supporting evidence
- Question whether correct and representative sampling
- They rely on the CP

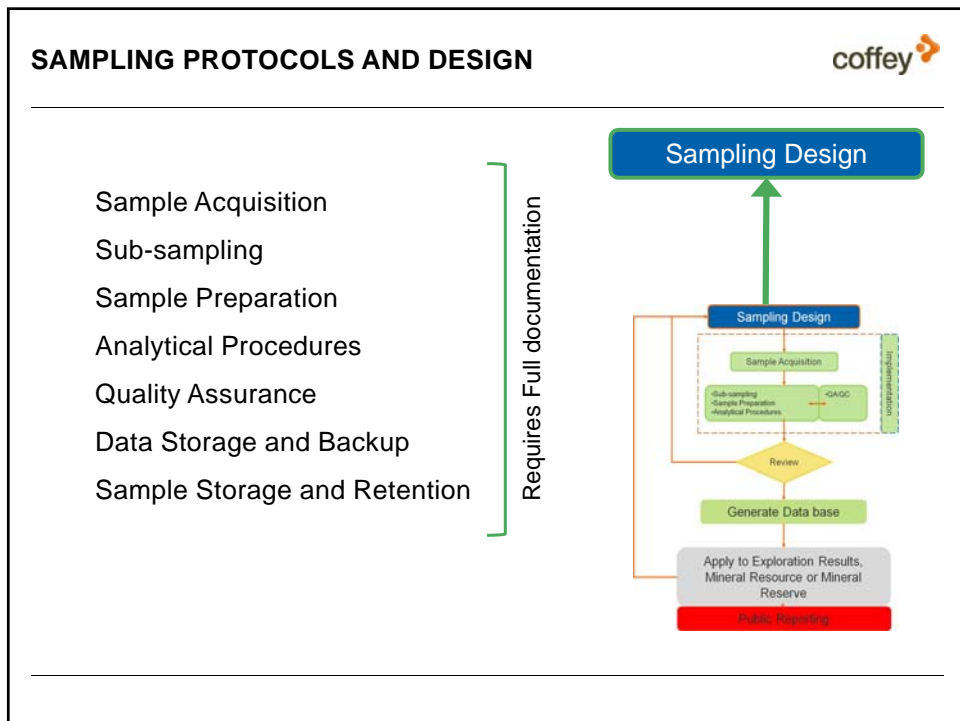
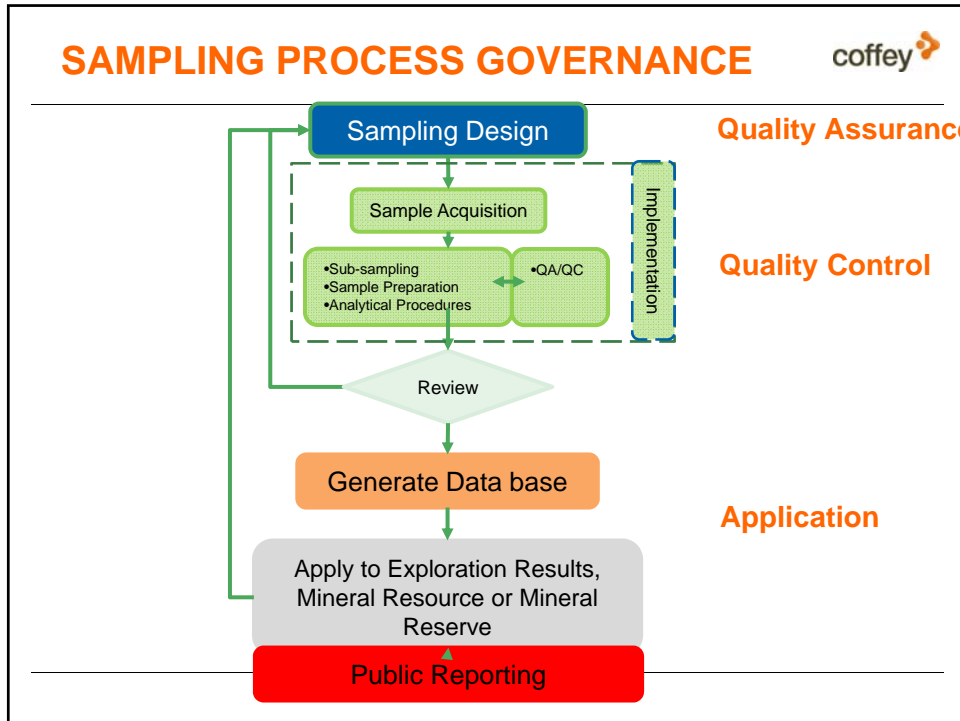
Managers of technical studies

- Inclined to leave this responsibility to each subordinate manager
- Attention is often focused on cost and benefit issues
- Attain the desired goals
- Result in acceptable risks
- Meet legal and policy requirements

Laboratory and Field personnel

- Understand sampling issues
- Ensure that their activities provide appropriate results





SAMPLING PROTOCOLS AND DESIGN



Sample Acquisition



SAMPLING PROTOCOLS AND DESIGN



Sample Acquisition

Sub-sampling



SAMPLING PROTOCOLS AND DESIGN



Sample Acquisition

Sub-sampling

Sample Preparation



SAMPLING PROTOCOLS AND DESIGN

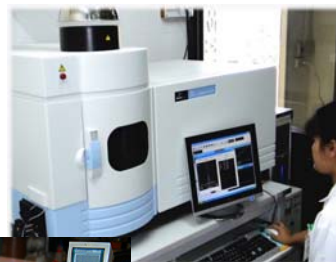



Sample Acquisition

Sub-sampling


Sample Preparation

Analytical Procedures




SAMPLING PROTOCOLS AND DESIGN coffey 


Sample Acquisition
Sub-sampling
Sample Preparation
Analytical Procedures
Quality Assurance




The comic strip features Dilbert and a woman. Dilbert says: "RATBERT, MY COMPANY IS HIRING FOR OUR QUALITY ASSURANCE GROUP. YOU'D BE PRRFECT." The woman replies: "WHAT WOULD I HAVE TO DO?" Dilbert explains: "YOU WOULD FIND FLAWS IN OUR NEW PRODUCT, THUS MAKING YOURSELF AN OBJECT OF INTENSE HATRED AND RIDICULE." The woman asks: "BUT THEN YOU'D FIX THOSE FLAWS... AND YOUR RESPECT FOR ME WOULD GROW INTO A SPECIAL BOND OF FRIENDSHIP, RIGHT?!" Dilbert replies: "NO, THEN WE SHIP."

SAMPLING PROTOCOLS AND DESIGN coffey 

Sample Acquisition
Sub-sampling
Sample Preparation
Analytical Procedures
Quality Assurance
Data Storage and Backup




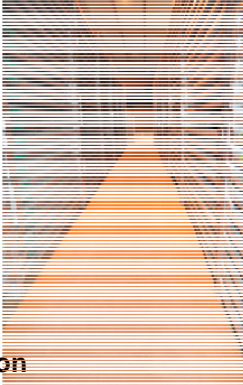
A CD-ROM disc is shown with a metal chain wrapped around it and a yellow padlock in the center, symbolizing data security or restricted access.



An illustration showing a globe in the center, surrounded by several laptops and servers, representing data storage and backup systems.

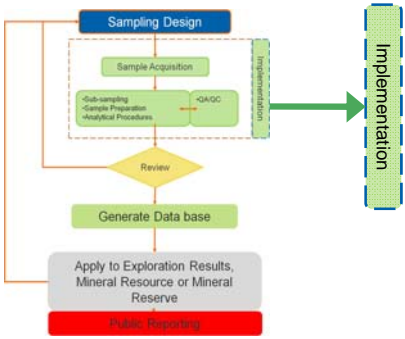
SAMPLING PROTOCOLS AND DESIGN coffey

Sample Acquisition
Sub-sampling
Sample Preparation
Analytical Procedures
Quality Assurance
Data Storage and Backup
Sample Storage and Retention



IMPLEMENTATION coffey

Sample Acquisition
Analytical techniques
Quality Control
Database
Audits and Reviews



IMPLEMENTATION



Sample Acquisition




IMPLEMENTATION




Sample Acquisition


Analytical techniques




IMPLEMENTATION coffey 


Sample Acquisition
Analytical techniques
Quality Control




IMPLEMENTATION coffey 

Sample Acquisition
Analytical techniques
Quality Control
Database




IMPLEMENTATION coffey 

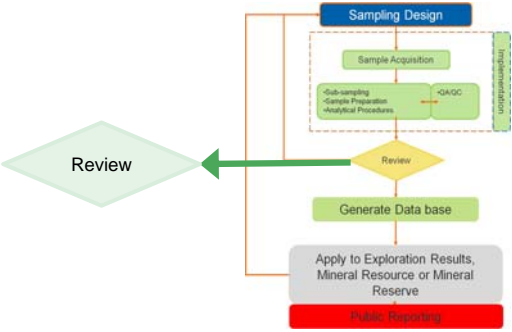

Sample Acquisition
Analytical techniques
Quality Control
Database
Audits and Reviews



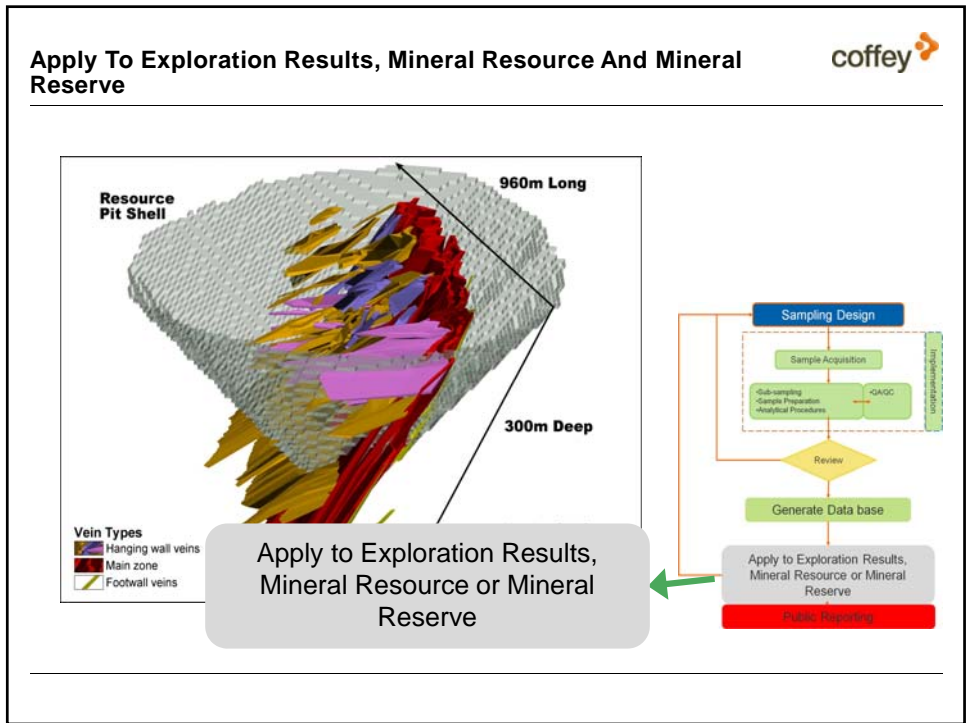
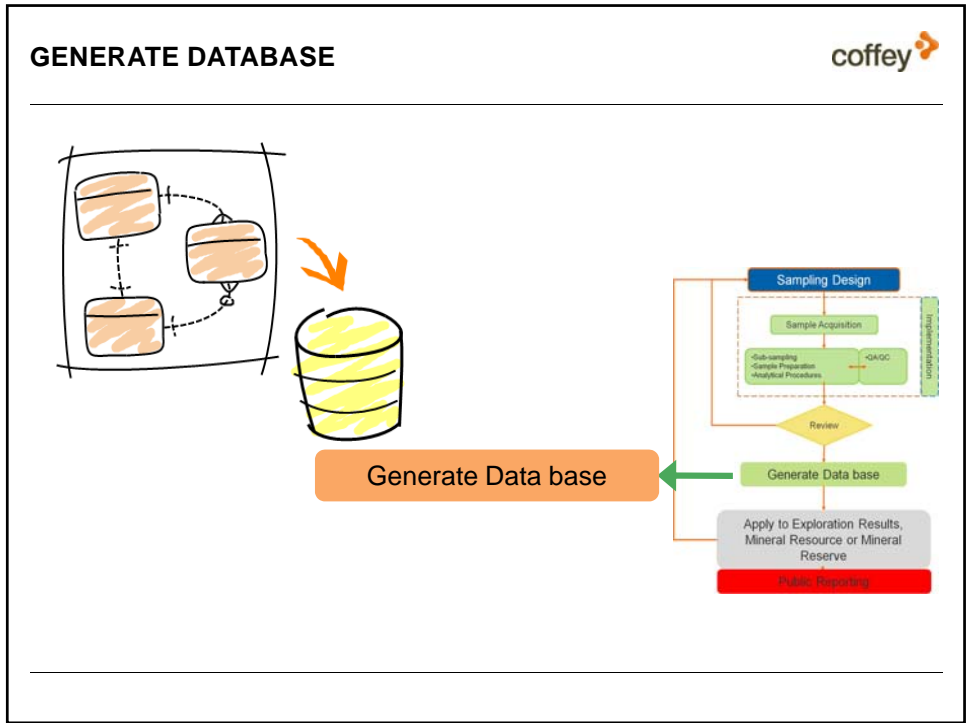
A comic panel showing Asterix and Obelix. Asterix asks, "WHAT ARE WE LOOKING FOR, ASTERIX?" and Obelix replies, "I DON'T KNOW YET, OBELIX".

REVIEW coffey 

Not a tick box process
Looking to improve results




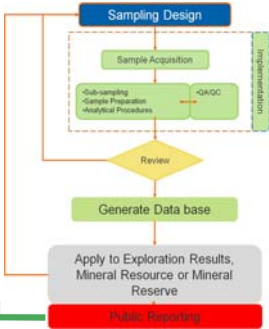
The flowchart illustrates the review process. It starts with 'Sampling Design' (blue box), leading to 'Sample Acquisition' (green box). 'Sample Acquisition' includes sub-steps: 'Sub-sampling', 'Sample Preparation', and 'Analytical Procedures', which lead to 'QA/QC' (green box). From 'QA/QC', the process goes to a 'Review' diamond (yellow), then to 'Generate Data base' (green box), and finally to 'Apply to Exploration Results, Mineral Resource or Mineral Reserve' (grey box), which leads to 'Public Reporting' (red box). A feedback loop arrow goes from the 'Review' diamond back to 'Sampling Design'. An image of a hand drawing smiley faces is shown to the left of the flowchart.



PUBLIC REPORTING coffey

Investors
Shareholders
Interested and Affected Stakeholders





Public Reporting


←

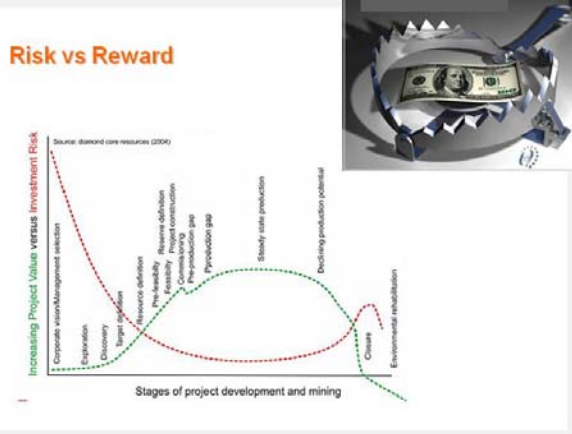
Public Reporting


CONCLUSION coffey

Removes uncertainties
Reduces risk
Adds Confidence

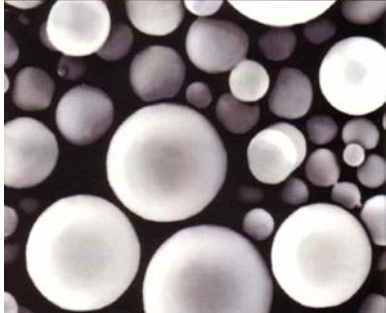
Risk vs Reward







OTHER SAMPLING METHODS coffey 

Metallurgy
Bulk Density




REPORTING STANDARDS AND BEST PRACTICE coffey 

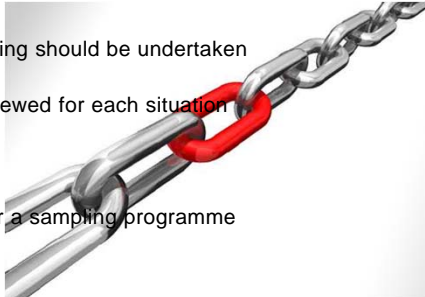


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BEST PRACTICE IN THE
REPORTING OF MINERAL
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MINERAL RESOURCES AND
MINERAL RESERVES**

CONCLUSION coffey 

- The Code is not prescriptive about how sampling should be undertaken
- Set of guidelines that need to be carefully reviewed for each situation
- Minimum required for public reporting
- CP to assess the key components required for a sampling programme
- How the sampling is planned and undertaken
 - can reduce the risks associated with the project
 - can provide confidence in the public reporting



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