

Financing Mining and Sustainability:
Exploring sound investment decision processes

Mike Cambridge
(Director Knight Piésold Ltd.)
14 January 2002
UNESCO

Abstract

The purpose of an audit is to verify compliance against a set of guidelines or standards. Such audits are undertaken for both statutory and non statutory purposes, either in a regulatory framework or as part of a voluntary system, to meet the needs of either compliance or permitting requirements

The standards adopted during an audit depend on the purpose for which it was intended. In the mining industry it is clear that the term “standards” causes some confusion. There are ISO standards for auditing and for environmental management etc which are adaptable to global application. However the adoption of technical and scientific standards is less applicable to global use. Examples of current mining projects from around the world show the disparate environmental and social conditions, the very variability of which mitigates against the application of the same technical/scientific target or standard throughout the world. It is also clear that though global standards are often discussed such common levels do not exist, indeed the rules by which mines are permitted and financed are as varied as the geographical regions in which they exist. This begs the question whether global standards are a realistic objective.

It is however recognised that some form of baseline principles would be of assistance to the financing institutes, and as a comparator for NGOs and governmental bodies alike, as the basis for assessing all mining projects. To this end a set of global objectives or principles would be more appropriate and more useful to all participating parties.

Should one achieve agreement of such principles it would be necessary to ensure that all parties to a mining project would be committed to the achievement of such principles. Some form of sanction would thus be required. There are examples of regulatory systems which have proved successful in preventing the types of incident so damaging to the industry (Ref. 1). Thus regulation to ensure that the global objectives are met is realistic and considered appropriate. The need for regulation of an audit process at all stages of mine development is exemplified by the recent studies of mine tailings dam failures which indicate the predominant cause to have been inadequate management (Ref. 2). Regular auditing at all stages has been shown to be beneficial and thus should be regulated throughout the industry.

The perception of the industry is of being “dumb, dirty and damaging” (Burke 1999) and, if this perception is to be changed, the industry must accept the principle of a minimum performance standard. All stakeholders should accept and sign up to a global set of principles which are transparent and generic. Specific site orientated technical and scientific standards will meet the local objectives of environmental and social impact mitigation. Enforced regulation by third party auditing will ensure that the local objectives are being met and the global principles are being adhered to. This will improve the image of mining and reassure the financing institutes such that much needed investment is returned to the industry.

Ref. 1: M Cambridge, *A review of tailings dam failures*. International Water Power and Dam Construction, May 2001

Ref. 2: ICOLD Bulletin 121 (2001)

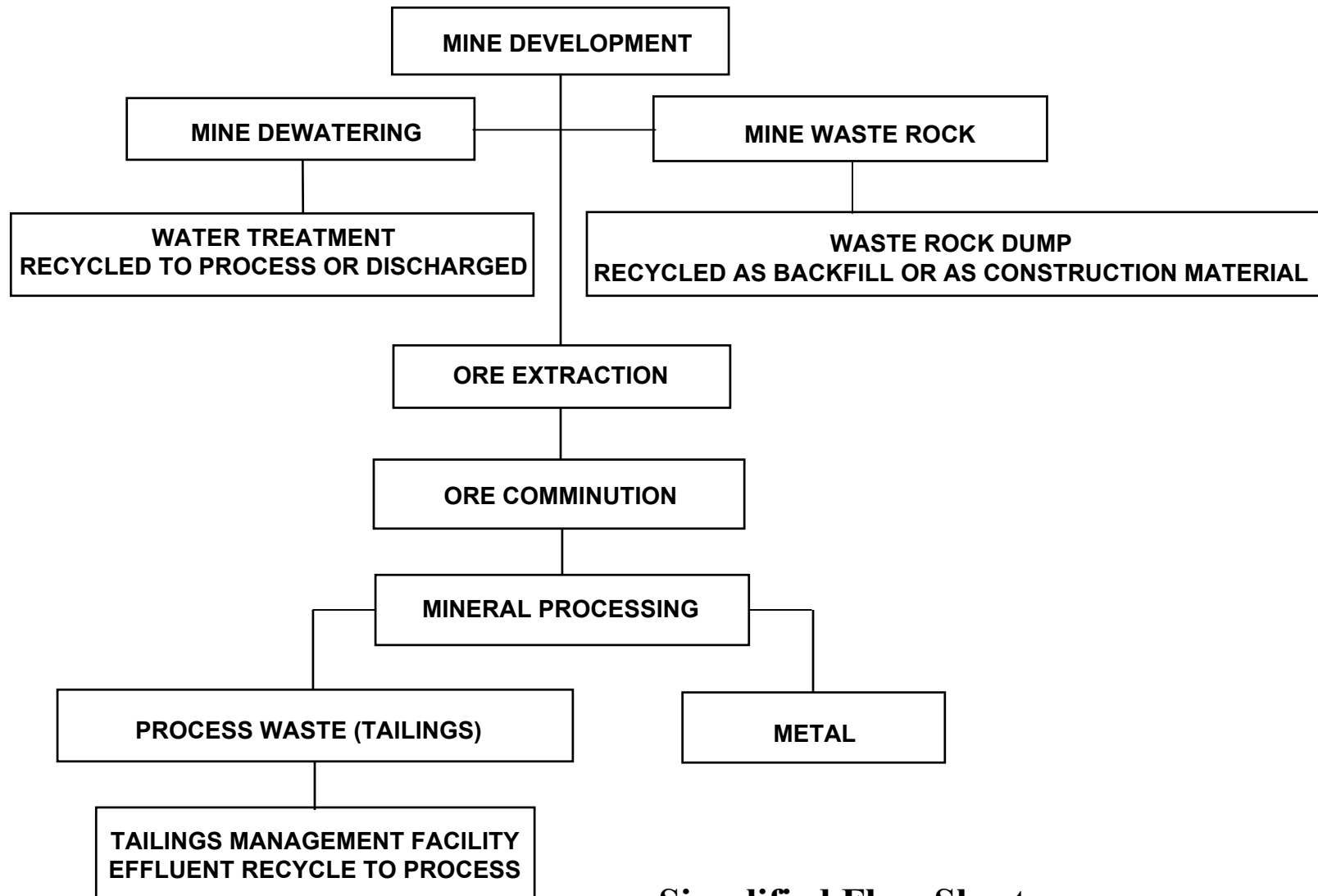
***Financing mining & sustainability:
Exploring sound investment decision processes***

How standards and agreements are used in audits
and independent verification

Mike Cambridge
Director
Knight Piésold Ltd.
14 January 2002

Knight Piésold

*How standards and agreements are used in audits
and independent verification*



Simplified Flow Sheet

*How standards and agreements are used in audits
and independent verification*



Operation

Knight Piésold

*How standards and agreements are used in audits
and independent verification*



Closure

Knight Piésold

*How standards and agreements are used in audits
and independent verification*

- What is the audit/verification process ?
- Why are audits undertaken ?
- Who by and for whom ?
- How are existing standards/guidelines used/defined ?
- Does such guidance ensure environmental and social protection and meet the requirements of the industry, financial institutions and governments ?
- Can the system be improved to give all parties more confidence ?

*How standards and agreements are used in audits
and independent verification*

Why undertake an audit or an independent verification?

- **Statutory obligation**
- **Non - Statutory**
 - Financial Institute - limit risk/liability
 - Mining company - achieve permit
 - Government/EPAS - ensure compliance

*How standards and agreements are used in audits
and independent verification*

Bre - X

Knight Piésold

*How standards and agreements are used in audits
and independent verification*



Aznalcollar Tailings Dam Failure

Knight Piésold

*How standards and agreements are used in audits
and independent verification*



Summitville Mine Site – Post Abandonment

Knight Piésold

*How standards and agreements are used in audits
and independent verification*

Who undertakes audits and independent verification ?

- competent persons / independent consultants

Who confirms their independence and competence ?

- peer review, i.e. self regulating except in a few countries
e.g. UK Mines and Quarries (Tips) Regulations
LSE Listing Rules

*How standards and agreements are used in audits
and independent verification*

What are the current guidelines/standard?

Generic

1. World Bank
2. European Union
3. Local national

Specific

- LSE Listing rules
- Codes for reporting mineral reserve
- CN Management
- Mine closure
- EU BREF notes
- ICOLD

*How standards and agreements are used in audits
and independent verification*

- Are these guidelines relevant ?
- Does their application meet the requirements of industry, financial institutions and governments ?
- Are global standards an appropriate objective ?
- Should competent persons be approved ?

*How standards and agreements are used in audits
and independent verification*



Sahel Region

Knight Piésold

*How standards and agreements are used in audits
and independent verification*



Alto Plano

Knight Piésold

*How standards and agreements are used in audits
and independent verification*



Equatorial

Knight Piésold

*How standards and agreements are used in audits
and independent verification*



Urban – E Europe

Knight Piésold

*How standards and agreements are used in audits
and independent verification*



Portugal

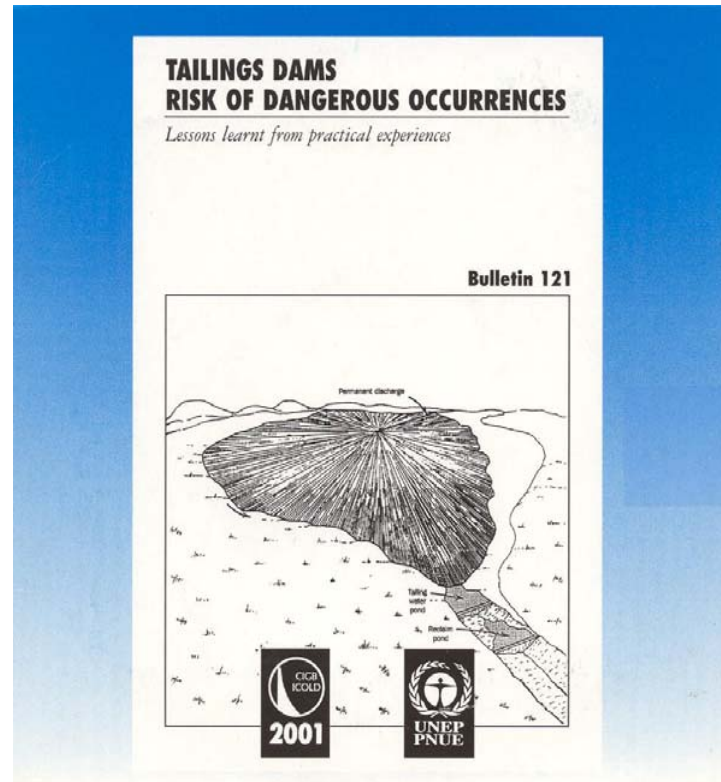
Knight Piésold

*How standards and agreements are used in audits
and independent verification*

- Global standards to meet the different environment of each of these projects would be difficult to achieve.
- Global objectives to ensure that environmental and social impacts are minimised and liabilities fully understood would be more appropriate.
- To ensure that global objectives are achieved regulation could be adopted as standard practice.

*How standards and agreements are used in audits
and independent verification*

Why we need regulation:



“The art and science of geotechnical engineering, geology and hydrology has given designers sufficient information to enable safe design and construction of tailings dams”

Knight Piésold

*How standards and agreements are used in audits
and independent verification*

Review of Failure Record of Tailings Dams 1917 – 2000
(Ref. ICOLD Bulletin 121)

“indicates that the predominant cause of failure was
inadequate management”

Knight Piésold

*How standards and agreements are used in audits
and independent verification*

Conclusions

- Global standards do not exist and would be difficult to define
- Global objectives/principals would better meet the requirements of all parties
- Auditing, regulated as standard practice, needs standards against which to report however these could be local/site specific
- Competence of auditors is currently self regulated but could be regulated if appropriate standards of experience can be defined
- Auditing of mines pre-production to ensure global objectives are achievable should be statutory
- Auditing during operation and post closure to ensure permit conditions are being met should be statutory
- A prescriptive approach will not necessarily achieve the agreed objectives and may increase environmental and social impacts

*How standards and agreements are used in audits
and independent verification*

- The perception of the extractive industry is of the few poor performers rather than of the responsible many.
- The global economy needs the extractives industries to encourage investment and project development and a change in perception by assuring environmental and social compliance is required.
- Regulation to meet agreed objectives, not prescription, can provide all stakeholders with the comfort that appropriate standards will be and are being achieved.