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# Financial Reporting in the Global Mining Industry

A survey of twenty-one leading companies





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Our internationally experienced professionals strive to deliver seamless, consistent services wherever our clients operate. Our mission is to help our clients and our people excel. Our global mining practice provides a comprehensive range of audit, tax, consulting and financial advisory services to the mining and metals industry and counts most of the leading companies in the industry among its clients.

This publication is one of a series prepared to help our clients in the mining industry. Other publications include:

Managing Risk in the Global Mining Industry	A study of the role of internal audit in today's global mining community
Mining for the Best Report	An analysis of reporting on sustainability and environmental issues by leading mining and metals companies
IASC Extractive Industries Issues Paper	A summary and analysis of the important issues prepared specifically for the mining industry
Comprehensive Integrated Solutions for the Mining Industry	A description of our global mining practice and our range of services, including examples of projects undertaken



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### Grey Quartz

This mineral occurs commonly in igneous, metamorphic, and sedimentary rocks, and can be frequently found in mineral veins with metal ores



# Introduction

In November 2000, the International Accounting Standards Committee published “Extractive Industries, An Issues Paper issued for comment by the IASC Steering Committee on Extractive Industries” (referred to hereafter as the “IASB Steering Committee”). (1) During the comment period, we produced a publication that summarised for our mining clients the major issues raised.

Many companies in the mining industry submitted thoughtful comments on the Issues Paper, as did Deloitte Touche Tohmatsu. However, with the subsequent formation of the International Accounting Standards Board (IASB) and the adoption of a new agenda by the IASB, extractive industries has taken a back seat and is not currently listed as an “active research topic.” While the subject continues to receive the attention of a group of national standard setters interested in accounting in the extractive industries, comprehensive global accounting standards for the industry are clearly a long way off.

Ongoing convergence of accounting standards around the world has helped to narrow some of the accounting differences found in the mining industry, for instance, in areas such as accounting for site reclamation and business combinations. Many issues remain to be addressed, however. This publication highlights the more important areas and summarises current practice, without offering solutions or suggesting best practices.

Our findings are based on a review of the published annual financial statements and supplementary data of twenty-one of the world’s leading mining companies. These companies listed on page **thirty**, are domiciled in nine different countries and use seven different accounting frameworks for preparing their financial statements. We looked at their reporting in many of the key areas addressed by the IASB Steering Committee: accounting for exploration costs and mine development, the amortisation of capitalised costs, the issue of impairment, provisions for costs to be incurred after mine closures, establishing fair values in a business combination and reporting interests in joint undertakings. We also looked into an area not addressed

by the steering committee, but an important one where practice seems to vary: the currency used to measure the results of operations. Mining is an industry where the product is generally priced in U.S. dollars regardless of where it is produced.

No survey of this nature would be complete without reviewing supplementary disclosures about mineral reserves, generally the most valuable asset of a mining company, but one you will not find on the balance sheet. While not reflected as an asset, the way a company determines its mineral reserves is critical to most amortisation calculations, for addressing impairment, and comes into play in determining fair values in a business combination.

In a few places in this report, we have referred to views of the staff of the U.S. Securities and Exchange Commission (SEC) that are a matter of public record.

Every effort has been made to ensure the accuracy of the contents of this publication but Deloitte Touche Tohmatsu accepts no responsibility for any errors or omissions.

We hope that this survey of accounting and reporting by many of the industry’s leading companies will be useful to mining companies worldwide. We also hope it will be of value to those who are working towards the eventual establishment of accounting standards that will address the issues unique to this industry. This is a goal we strongly support.

Robin Fryer  
Global Leader Mining Industry Practice  
Deloitte Touche Tohmatsu

## Disclosures about mineral *reserves and resources*

Although its mineral reserves are arguably the most valuable asset of a mining company, they do not appear as an asset on the balance sheet except to the extent they were purchased. Even then, the cost of mineral reserves is often not disclosed separately from other mining-related fixed assets.



Under the historical cost model, mineral reserves that result from a company's exploration activities do not appear as an asset. Information on mineral reserves is, however, vital to investors and analysts in predicting future cash flows and evaluating the prospects for a mining company. Thus, supplementary disclosure about mineral reserves outside the financial statements is important for a more complete appreciation of the value of an enterprise.

Because quantities of minerals beneath the earth's surface cannot be known with absolute precision, reserves are usually categorised as "proven" or "probable," depending on the degree of confidence about the accuracy of the disclosed quantity. All of the companies we reviewed that disclose information on reserves provided quantities of proven and probable reserves, in some cases separately and in other cases combined.

Many companies disclose in their annual reports information on mineral resources as well as reserves. Mineral resources are quantities of minerals for which there are reasonable prospects of eventual economic extraction. These are classified as "measured," "indicated" or "inferred," depending on the degree of confidence. Only those parts of a company's mineral resources that have been determined to be economically extractable can be classified as reserves.

This distinction is important from an accounting perspective since only proven and probable reserves are used in calculating amortisation on a unit-of-production basis and in measuring impairments. Most of the companies we reviewed state this explicitly in their financial statements, and those that do not are believed to follow this practice. Generally speaking, only proven and probable reserves are taken into account in determining fair values for acquisition accounting.

The U.S. SEC does not permit the disclosure of other than proven and probable reserve quantities on a unit of sale basis, such as ounces for gold, in filings with the commission. (2) The SEC will, however, permit the disclosure of measured and indicated mineral quantities on a non-unit of sale basis, such as tonnes and grade of material in the ground for gold. The U.S.-based companies that we reviewed did not provide disclosure of resources not classified as reserves. Companies in other jurisdictions that we reviewed disclosed both reserves and resources in their annual reports. With

limited exceptions, however, foreign filers with the SEC do not disclose information on resources in their SEC filings.

Unfortunately, there is no internationally agreed set of definitions for reserves and resources and the sub-categories within each. Three definition frameworks commonly used are CIM, JORC and SAMREC, developed by the mining industry in Canada, Australia and South Africa, respectively. (3) Not surprisingly, companies based in these countries used their own framework. In the United States, the SEC has developed its own definitions of reserves, which are contained in its Industry Guide 7. Unlike the other frameworks mentioned, the SEC requires completion of a final or bankable economic feasibility study before it will allow measured or indicated mineral resources to be classified as reserves in SEC filings. U.S.-based public companies are required to calculate their reserves according to Industry Guide 7, and foreign registrants are required to do the same in filings with the commission.

The tentative view of the IASB Steering Committee was that an international financial reporting standard for the extractive industries should initially use the JORC definitions in the case of mining enterprises and that, longer term, a joint industry group should develop a common set of reserve definitions. The committee did not develop a tentative view on the determination of the commodity price to be adopted for measuring reserve quantities.

In the gold mining sector, we looked at six major companies. Disclosures of proven and probable reserves are largely consistent, except for the frameworks used to define reserve categories:

COMPANY	FRAMEWORK
Anglogold	SAMREC
Ashanti	JORC
Barrick	Industry Guide 7
Goldfields	SAMREC
Newmont	(See note below)
Placer Dome	CIM

*Note: Newmont has provided definitions for proven and probable reserves rather than indicating the source.*



All of these companies have disclosed reserves in tonnes, grade and contained metal in ounces, as well as the projected gold price used to determine the reserves.

In addition to reserve disclosures, all except Newmont (the sole U.S.-based company in the group) have disclosed information on resources in their annual reports, though there are some inconsistencies as to what is disclosed.

Typical of this group, the following resource disclosures have been extracted from the Ashanti 2002 annual report:

Measured and indicated mineral resources as at 31 December 2002

Location	Measured Tonnes (m)	Measured Grade (g/t)	Indicated Tonnes (m)	Indicated Grade (g/t)	Total (million)	Total Grade (g/t)	Gold Ounces (m)	Equity Ounces (m)
<b>Obuasi</b>								
Underground	22.1	11.1	35.9	9.6	58.0	10.2	19.0	19.0
Surface	17.8	3.0	1.4	2.8	19.2	3.0	1.9	1.9
Tailings	14.5	2.0	5.0	2.2	19.5	2.0	1.2	1.2
<b>Sub total</b>	<b>54.4</b>	<b>6.0</b>	<b>42.3</b>	<b>8.5</b>	<b>96.7</b>	<b>7.1</b>	<b>22.1</b>	<b>22.1</b>

Notes to Ashanti's ore reserves and mineral resources statement include:

- The statement is classified according to JORC.
- Identified inferred resources are not reported in the statement.
- A gold price of \$300 per ounce has been used to determine reserves.

In the base metals mining sector, we looked at ten major companies. CODELCO, CVRD and Norilsk Nickel do not provide any disclosure of reserves in their annual reports. Of the seven that provide disclosure, information on proven and probable reserves is again largely consistent, except for the frameworks used to define reserve categories:

COMPANY	FRAMEWORK
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Falconbridge	CIM
Freeport McMoran	(See note below)
Inco	CIM
Noranda	CIM
Phelps Dodge	(See note below)
Teck Cominco	CIM
WMC Resources	JORC

*Note: Freeport McMoran has provided definitions for proven and probable reserves rather than indicating the source. We did not find definitions of reserve categories in the Phelps Dodge annual report, but the company would, we believe, have followed Industry Guide 7.*

All of these companies have disclosed reserves in tonnes and grade, as well as the projected commodity prices used to determine the reserves. Only Noranda has disclosed the quality of contained metal.

In addition to reserve disclosures, all except Freeport McMoran and Phelps Dodge (the two U.S.-based companies in the group) have disclosed information on resources in their annual reports.

The following disclosures on resources have been extracted from the Noranda 2002 annual report:

Mineral resources (in addition to mineral reserves)

Noranda Inc		Beneficial Interest (%)	Category	31 Dec 2002 (000 tonnes)	Grade Copper %	Grade Zinc %	Grade Lead %	Grade Silver g/mt	Grade Molybdenum %
Copper deposits	Antamina	33.8	Measured	25,000	0.50	0.20	-	4.7	0.03
			Indicated	35,000	0.47	0.29	-	5.9	0.03
			Total	60,000	0.48	0.25	-	5.4	0.03
			Inferred	33,000	0.99	0.99	-	13	0.02
Zinc deposits	Brunswick mine	100.0	Measured	1,190	0.18	8.38	3.21	76	-
			Indicated	1,792	0.45	8.89	3.43	108	-
			Total	2,982	0.34	8.69	3.34	95	-

Notes to the above statement include:

- The mineral resources are shown on a 100 percent basis.
- Resource estimates are prepared in accordance with CIM using estimation methodologies and parameters appropriate to each project.



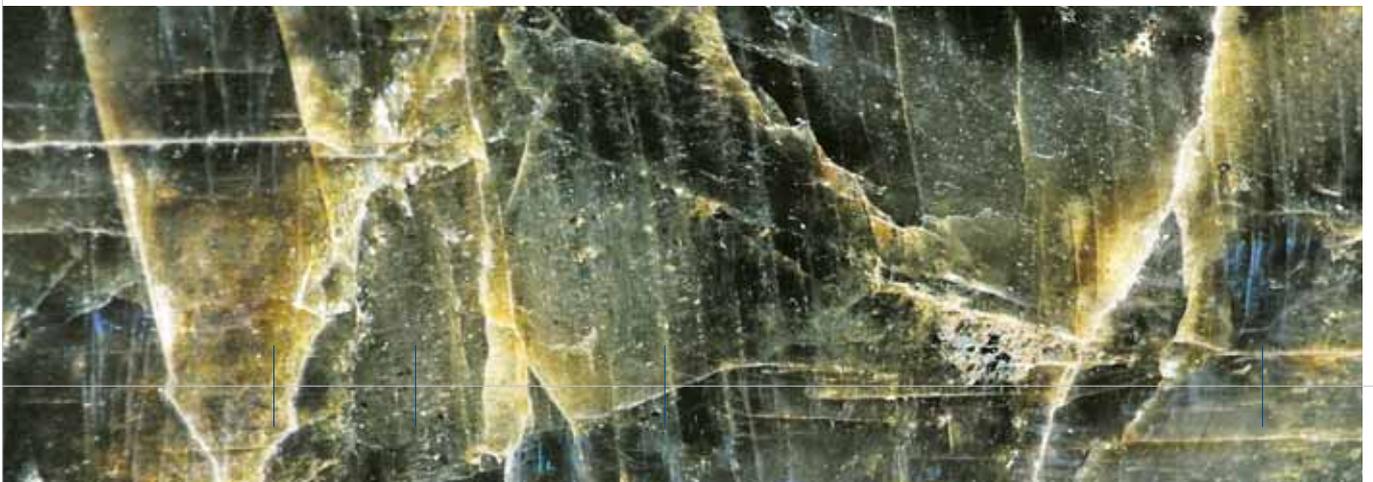
*“There is no internationally agreed set of definitions for reserves and resources.”*

We also looked at five diversified mining companies: Anglo American, BHP Billiton, MIM, Rio Tinto and Xstrata. All are involved in the mining of coal as well as metals. Anglo American has substantial precious metals operations in addition to coal and base metals. Xstrata does not provide any disclosure of reserves. The other four are largely consistent with their disclosures. The frameworks used are as follows:

Anglo American is the only company in this group to provide calculations of contained metal quantities, where applicable. None of these companies disclose the commodity prices used to determine reserves. All four have disclosed information on resources as well. The following are extracts from the disclosures made by Anglo American in its annual report:

COMPANY	FRAMEWORK
Anglo American	(See note below)
BHP Billiton	JORC
MIM	JORC
Rio Tinto	JORC

*Note: Anglo American uses the JORC Code for some of its operations. For others there is no indication of the framework used, and definitions are not provided.*



Copper	Classification	Tonnes (m) 2002	Tonnes (m) 2001	Grade 2002 %Cu	Grade 2001 %Cu	Contained metal 2002 (000 t)	Contained metal 2001 (000 t)
Collahuas -Oxide & mixed	Measured indicated	0.03	0.03	1.08	1.26	0.3	0.4
		0.23	0.66	1.22	0.88	2.8	5.9
	Measured & indicated	0.26	0.69	1.20	0.90	3.1	6.2
-Sulphide	Measured indicated	5.5	5.5	0.83	0.87	46	48
		76.5	76.5	0.87	0.87	665	664
	Measured & indicated	82.0	82.0	0.87	0.87	711	712
-Low Grade sulphide	Measured indicated	15.6	15.7	0.45	0.45	71	70
		112.4	112.4	0.46	0.46	529	521
	Measured & indicated	128.0	128.1	0.46	0.46	601	592

Notes to the above statement include:

- The measured and indicated resources are additional to the ore reserves and are stated as at 31 December 2002, unless otherwise stated.
- For Collahuas, all resources are contained within a US\$1.15/lb Cu pit.

Special considerations arise in the case of reserves of industrial minerals as there are no spot or forward markets for such minerals. How does a company that produces industrial minerals establish that there is a market for all of the reserves it has quantified? In the United States the SEC has traditionally required a final feasibility study as well as a sales contract or binding letter of intent as evidence of the ability to produce and sell industrial minerals profitably, but will allow minerals to be designated as "non-reserve material" if a company expects to be able to continue to economically market the industrial minerals. (4)

Our review revealed inconsistencies in the disclosure of reserves. A few companies did not disclose any reserve information with their financial statements. (We recognise this may be available elsewhere). The companies providing disclosure use a number of different frameworks for categorising reserves and, in some cases, resources. We believe that an industry-developed common set of definitions, as well as agreed disclosures to supplement the financial statements, would be helpful.



Marble with veins of calc-silicate minerals

This rock results from the thermal metamorphism of limestone around igneous rocks

# Accounting for exploration *and mine development*

The manner in which a mineral or metal occurs in the earth's crust determines the type of mining operation required to extract it and the costs to develop a mine, as well as the amount of waste produced in the extraction process.

Mining companies carry out the various stages of development necessary prior to production over a long period of time, at high cost and in some cases with a high level of risk and uncertainty as to future commercial benefits. Adopting an appropriate accounting treatment for the costs incurred at each stage is therefore essential. Unfortunately, there is little specific guidance as to the extent to which costs associated with finding, acquiring and developing mineral reserves should be expensed immediately or deferred. The IASB Steering Committee, however, offered tentative conclusions for accounting for the costs incurred at each stage.

In their exploration and development activities, mining companies typically carry out six pre-production stages:

- Prospecting. Normally undertaken before mineral rights in an area have been acquired. Involves investigating an area's geological data and carrying out geochemical and geophysical surveys, as well as exploratory drilling and trenching.
- Staking of claims and acquisition of interests. Relates to obtaining a legal right to explore for, develop and produce minerals.
- Exploration. Involves activities similar to prospecting, but carried out in greater detail on areas with sufficient mineral potential to warrant exploration for commercially recoverable resources.



- Evaluation and appraisal. Determines the technical feasibility and commercial viability of mineral deposits found during exploration and the designation of proven and probable reserves. At this stage, decisions are made as to whether to develop a particular area.

- Development. Pre-production activities undertaken to gain access to mineral reserves. Typically includes sinking shafts, permanent excavations, building transport infrastructure and initial removal of overburden (see stripping costs below).

- Construction. Establishes and commissions facilities, (e.g., buildings, machinery and equipment) to extract and transport minerals. Some construction may occur during the development stage.

Our review of the financial statements of the twenty-one companies revealed a reasonable commonality of treatment of exploration and development pre-production costs, with some detailed variation. The majority of these companies expense exploration costs as incurred except when a property is considered viable for future production or when proven and probable reserves have been established. Costs are subsequently capitalised until commercial production commences or could commence.

The exploration and evaluation accounting policies of Rio Tinto and Xstrata are of interest (both follow UK GAAP):

**Rio Tinto**

“During the initial stage of a project, full provision is made for the costs thereof by charge against profits for the year. Expenditure on a project after it has reached a stage at which there is a high degree of confidence in its viability is carried forward and transferred to tangible fixed assets if the project proceeds. If a project does not prove viable, all irrecoverable costs associated with the project are written off. If an undeveloped project is sold, any gain or loss is included in operating profit, such transactions being a normal part of the Group’s activities. Where expenditure is carried forward in respect of a project that may not proceed to commercial development for some time, provision is made against the possibility of non-development by charge against profits over a period of up to seven years. When it is decided to proceed with development, any provisions made in previous years are reversed to the extent that the costs are recoverable.”

Rio Tinto is the only company we reviewed that discloses the potential for reversal of provisions against capitalised costs made in previous years.





#### Xstrata

“Exploration and evaluation expenditure for each area of interest, other than that acquired from the purchase of another mining company, is carried forward as an asset provided that one of the following conditions is met:

- Such costs are expected to be recouped through successful development and exploration of the area of interest or, alternatively, by its sale; or
- Exploration and evaluation activities in the area of interest have not yet reached a stage which permits a reasonable assessment of the existence or otherwise of

economically recoverable reserves, and active and significant operations in relation to the area are continuing”.

“Exploration expenditure which fails to meet at least one of the conditions outlined above is written off. Identifiable exploration and evaluation assets are recognised at their cost of acquisition. Exploration assets are reassessed on a regular basis, and these costs are carried forward provided that at least one of the conditions outlined above is met.”

The tentative views reached by the IASB Steering Committee were:

Pre-acquisition prospecting, appraisal and exploration costs	Charge to expense when incurred
Direct and incidental property acquisition costs	Recognise as an asset
Post-acquisition exploration and appraisal costs	Initially recognise as an asset pending the determination of whether commercially recoverable reserves have been found. Some ceiling should be imposed.
Development costs	Recognise as an asset
Construction costs that relate to a single mineral cost centre	Capitalise as part of the costs of that cost centre
Construction costs that relate to more than one mineral cost centre	Account for them in the same way as other property, plant and equipment under IAS 16
Post-production exploration and development costs	Treat the same way as any other exploration or development costs



Limestone Breccia sedimentary rock  
Found in transitional environments near continental margins

In the United States, the SEC's industry Guide 7 tries to distinguish between the "exploration stage" and the "development stage." Guide 7 defines "development stage" as any activity in the preparation of an established commercially minable deposit (reserve) for its extraction, which is not already in production. The "exploration stage" is defined as all activities involved in the search for mineral deposits (reserves), which is not in the development or production stage. Therefore, if proven or probable reserves have been demonstrated the project is in the "development or production stage." If no reserves have been demonstrated then whatever activity is being performed on or for a mineral property is termed "exploration." This stage can include drilling, sampling, assaying, metallurgical testing, engineering studies, economic feasibility studies and project permitting.

The SEC staff will generally not allow the capitalisation of exploration and development costs before completion of a final or bankable feasibility study and the designation of proven and probable reserves. The SEC staff has also stated that the acquisition cost for an exploration stage mining property should generally be viewed as an exploration expense and expensed as incurred. (2) The SEC expects, however, that there will also be circumstances where capitalisation of these costs is required. The determination of whether to capitalise amounts for the acquisition of an exploration property is highly dependent upon the specific facts and circumstances of the property acquired.

#### Borrowing costs

With the exception of one company reviewed, all disclose their accounting policy regarding the treatment of borrowing costs. All capitalise costs relating to the financing of major capital projects. Because of the high cost of major capital projects and the time it takes to complete them, borrowing costs during the construction phase can be significant.

#### Sale of product during the development stage

None of the companies reviewed disclosed their accounting treatment of revenues derived from the sale of product during the development stage, probably because such revenues are not material to the financial statements. The alternatives are to record sales as revenue, in which case the cost of sales would presumably need to be computed, or to credit revenues against the cost of the project to which they relate.

In its exposure draft of Improvements to International Financial Reporting Standards, the IASB has proposed the following accounting for incidental revenue during the development stage:

"Some operations occur in connection with the construction or development of an item of property, plant and equipment, but are not necessary to bring the asset to the location and working condition necessary for it to be capable of operating in the manner intended by management. These incidental operations may occur before or during the construction or development activities. For example, income may be earned through using a building site as a car park until construction commences. Because incidental operations are not necessary to bring an asset to the location and working condition necessary for it to be capable of operating in the manner intended by management, the income and related expenses of incidental operations are recognised in profit or loss for the period, and included in their respective classifications of income and expense in the income statement."

On the other hand, under the exposure draft, if the operations are necessary to bring the asset to operating condition, then net sales proceeds received during activities necessary to bring the asset to the location and working condition necessary for it to be capable of operating properly, are deducted from the cost of the asset.

### Stripping costs

Companies that engage in open pit mining (surface mining to extract ore deposits by making progressively larger and deeper pits) can incur significant “stripping” costs in removing overburden and waste rock. Such costs arise during both mine development (pre-production stripping to reach the ore) and production.

Capitalising pre-production stripping costs as part of the costs of developing a mine is generally accepted practice. For post-production stripping costs, two methods of accounting are used. The first, which expenses costs as incurred, is normally employed when the stripping ratio (ratio of ore extracted to waste material) over the life of the mine is expected to be relatively even. The second method, which defers stripping costs using a life-of-mine based accounting model, is normally used by companies where the stripping ratio varies substantially during the life of a mine. It involves deferring costs when the actual stripping ratio incurred exceeds the expected average life-of-mine stripping ratio or recording a liability when the actual stripping ratio is less than the expected average life-of-mine ratio.

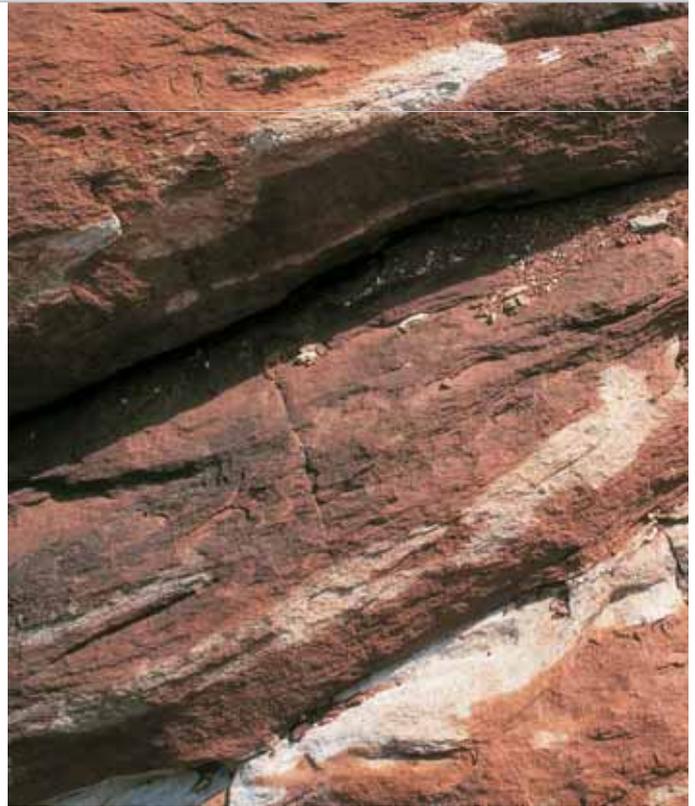
Of the twenty-one companies surveyed, eleven specifically include an accounting policy for stripping costs and five others have policies that can be construed as incorporating deferred costs related to stripping. In each of these sixteen companies stripping costs are deferred in certain circumstances.

The following extracts of disclosures from 2002 published reports illustrate the variation of reported practice:

#### WMC Resources

“Capital development for open pit mines includes both the initial pre-production removal of overburden and ongoing post-production waste removal.

“All costs of post-production waste removal (stripping) from open pit mines are accumulated and deferred on the balance sheet as part of the total of mine properties and mine development. These costs include the cost of drilling, blasting, loading and haulage of waste rock from the open pit to the waste pile. These costs are predominantly in the nature of payments to mining, blasting and other contracting companies or costs of internal labour and materials used in the process. These costs are amortised on a units of production basis.”



#### Phelps Dodge

“Mine exploration costs and stripping costs to maintain production of operating mines are charged to operations as incurred. Mine development expenditures at new mines, and major development expenditures at operating mines outside existing pit limits that are expected to benefit future production beyond a minimum of one year, are capitalised and amortised on the units of production method. Major development expenditures at operating mines include the cost to remove overburden to prepare unique and identifiable areas outside the current mining area for such future production.”

#### BHP Billiton

“Stripping ratios are a function of the quantity of ore mined compared with the quantity of overburden, or waste, required to be removed to mine the ore. Deferral of costs to the balance sheet is made, where appropriate, when actual stripping ratios vary from average stripping ratios. Deferral of costs to the balance sheet is not made where ore is expected to be evenly distributed.

“Costs, which have previously been deferred to the balance sheet (deferred overburden removal costs), are included in the profit and loss account on a unit of production basis



*“There is little specific accounting guidance as to the extent to which the costs associated with finding, acquiring and developing mineral reserves should be expensed immediately or deferred.”*

utilising average stripping ratios. Changes in estimates of average stripping ratios are accounted for prospectively from the date of change.”

In November 2002, the SEC staff announced that they were evaluating the accounting for post-production stripping costs. (2) In the interim, the SEC expects mining companies to include detailed disclosures in their financial statements and operating and financial review. These disclosures should include:

- Deferred charges and credits to be reported as separate lines in the balance sheet apart from property, plant and equipment and long-lived assets
- Cash flows associated with deferred stripping should be classified as a component of operating cash flows rather than investing cash flows
- The accounting methods used to measure and recognise production stage deferred stripping costs and credits
- The circumstances under which costs associated with waste rock removal are deferred
- The method used to defer and amortise post-production stripping costs
- The reserve quantities used to develop the waste-to-ore-ratio
- The basis on which deferred costs or credits are evaluated for loss in value

- A statement that accounting for stripping costs smooths the cost over the life of the mine rather than expensing the actual cost in each period

- A statement that some mining companies expense such costs as incurred

- The waste-to-ore ratio used by each mine and changes thereto from period to period

- The extent to which the life of mine waste-to-ore ratio differs from the actual ratio during the period

No accounting standard specifically addresses the matter of stripping costs; however, the definition of an asset in the IASB Framework is relevant. An asset is “a resource controlled by an enterprise as a result of past events and from which future economic benefits are expected to flow to the enterprise.” Not all costs that satisfy this definition will qualify for recognition on the balance sheet. Even if it is probable that future economic benefits will flow to the enterprise an asset can only be recognised if it has a cost or value that can be measured reliably. Some might question whether deferred stripping costs meet the definition of an asset.

The IASB Steering Committee’s Issues Paper gives, as an example of assets in extractive industry enterprises, the cost of accessing known mineral reserves. The Steering Committee’s tentative view regarding post-production development costs was to treat them as any other development costs, i.e., to capitalise costs as an asset. It is not clear, however, whether ongoing stripping would be contemplated as a development cost.

## Amortisation of capitalised costs related to mineral reserves

A fundamental accounting issue for mining companies is how the costs capitalised during pre-production should be allocated through periodic charge to the income statement as mineral is produced. The generally accepted accounting principle is that the amortisable amount should be allocated on a systematic basis over its useful economic life, using a method that reflects as far as possible the pattern in which its economic benefits are consumed.

Issues to consider regarding the amortisation of capitalised costs in the mining industry include:

- The method used in calculating amortisation
- The reserve base used when the unit of production method is adopted

### Amortisation methods

Mining companies usually consider two main methods for amortising pre-production costs:

- Straight-line. Assets are written down by equal annual amounts over their estimated useful lives. This method is appropriate where annual production is expected to be relatively stable.
- Unit of production. Assets are written down by the proportion that the resources extracted in a period, correspond to total

resources. This method is appropriate when production is expected to vary from one year to another.

Some companies use both methods in their financial statements.

### Reserve base

In matching costs with revenues under the unit of production method, the choice of reserve base used to amortise capitalised costs is important. Available options include:

- Proven and probable reserves
- Proven developed reserves
- Proven reserves (both developed and undeveloped)

The IASB Steering Committee discussed this issue in its report but did not reach a tentative conclusion about which basis is preferred.



Regardless of the reserve base chosen, it is important that all costs, both past and future, appropriate for the reserve classification be included in the depreciation basis. For example, if undeveloped reserves are included in the basis, development costs expected to be incurred to access those reserves should be taken into account in the calculation. In the United States, however, the SEC staff has noted that estimated future costs should not be taken into account in amortisation calculations in filings with the commission. (2)

Our review indicated that a mining company would typically amortise its pre-production costs using the unit of production method and the amount of proven and probable reserves. Eleven of the twenty-one companies reviewed did so while a further seven companies followed the unit of production basis but used more generalised language in talking about reserves. None of the companies reviewed made reference to whether undeveloped reserves are included in their amortisation calculations.

The following extracts of disclosed accounting policies illustrate the variation found in practice:

**Newmont**

“Proven and probable reserves are amortised on a unit of production basis over the respective mine lives. Undeveloped mineral interests are amortised on a straight-line basis over their estimated useful lives taking into account residual values. At such time as an undeveloped mineral interest is converted to proven and probable reserves, the remaining unamortised balance is amortised on a unit of production basis as described above.”

**Norilsk Nickel.**

“Mine development costs are amortised on a straight-line basis using the life of mine method, based on estimated proven and probable mineral reserves, over the lesser of seventy years or their expected useful lives.”

**Placer Dome**

“For mineral properties, capitalised development, buildings and machinery, the unit of production method is applied where the mine operating plan calls for production from well-defined mineral ore reserves. Where total mineral

reserves are not determinable because ore-bearing structures are open at depth or are open laterally, the straight-line method is applied over the estimated life of each mine.”

The tentative view of the IASB Steering Committee is to use unit of production depreciation for all capitalised pre-production costs with two exceptions:

- Use straight-line depreciation for capitalised construction costs that serve a single mineral cost centre if the economic life of the asset is less than the life of the reserves.
- Follow IAS 16 for capitalised construction costs that serve two or more cost centres.

At the AICPA SEC Regulations Committee’s International Practices Task Force November 2002 meeting, the SEC representative noted the following points: (2)

“Reserve quantities used to calculate depreciation, depletion and accumulated retirement obligation provision rates should be derived from Industry Guide 7 reserves, calculated using current price and cost assumptions.

- The determination of proven and probable reserves, as determined by Industry Guide 7, is required prior to the capitalisation of mine development costs. Accordingly, the reserve quantities used to measure the financial results of a mining operation are also limited to proven and probable reserves (contained in the area currently being mined)
- Unless management has reasonable certainty that reserve quantities will actually be processed, proven and probable reserve quantities contained in stockpiled inventory should not be recognised and used for financial accounting and reporting purposes. This is the case even though it is possible that these reserve quantities may meet the Industry Guide 7 criteria to be classified as proven and probable reserves if it is expected they will be economic to process.”

The SEC staff is interpreting current commodity prices as the average of the last three years’ average annual prices.



# Accounting for *Impairment*

Assets should not be carried on the balance sheet at an amount in excess of their recoverable amount. The measurement and recognition of asset impairment is an important issue in the mining industry for the following reasons:

- Mining operations typically require a high level of capital investment in order to develop, extract and process minerals
- The operational life of many mining projects runs into several decades
- The selling price of many minerals fluctuates widely

To review non-current assets for possible impairment, it is generally necessary to estimate future cash flows from those assets and compare the amount so calculated with the carrying amount of the same assets. For companies that report in accordance with U.S. GAAP, estimated future cash flows are initially calculated on an undiscounted basis whereas those that report in accordance with International Financial Reporting Standards (or U.K. GAAP) use a discounted basis.

Issues to consider in estimating future cash flows include:

- The reserve categories to be used to measure recoverable quantities
- The commodity prices to be used
- The choice of discount rate (where required)

Our review of the financial statements of the twenty-one mining companies revealed a general absence of disclosures about the above matters. Three companies made reference to reserves, three to commodity prices and four to discount rates. Assumptions about future currency exchange rates, which can also be significant in estimating future cash flows, are not discussed.



Industry Guide 7 provides SEC guidance regarding the reserve categories for estimating future cash flows and requires companies to use proven and probable reserve quantities as determined in accordance with the guide. The tentative view reached by the IASB Steering Committee supports this principle. IAS 36 discusses the appropriate discount rate to be used in computing the value in use of non-current assets, referring to a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the asset.

Barrick and Rio Tinto are two companies that disclose information about their discount rate:

- Barrick. "The discount factor is our estimate of the risk adjusted rate used to determine the fair value of our mining properties in a transaction between willing buyers and sellers."
- Rio Tinto. "The discount rate applied is based upon the Group's weighted average cost of capital with appropriate adjustment for the risk associated with the relevant unit. Estimates of future net cash flows are based on ore reserves and mineral resources for which there is a high degree of confidence of economic extraction."

IAS 36 requires cash flow projections to be based on reasonable and supportable assumptions that represent management's best estimate of the set of conditions that will exist over the remaining useful life of the asset, and be based on the most recent financial budgets/forecasts approved by management.

Goldfields and Newmont provide such disclosure:

- Goldfields. "The following estimates and assumptions were made by management when reviewing the long-term assets for impairments: a gold price of US\$320 per ounce being R103,000 kilogram; the extraction of proved and probably reserves as per the most recent life of mine plan; and working costs and capital expenditure estimates as per the most recent life of mine plan."
- Newmont. "Future cash flows include estimates of recoverable ounces, gold prices (considering current and historical prices, price trends and related factors), production levels, capital and reclamation costs, all based on detailed engineering life of mine plans."

Once a company has determined that an asset is impaired, a reduction in the carrying amount of the asset needs to be recorded and the charge recorded in the income statement for that period. Of the companies reviewed, thirteen recorded an impairment charge in either 2002 or the previous year. Although there was some variation as to where the impairment was recorded within the income statement, there was general consistency in recording the impairment within the results of operations. Teck Cominco, however, recorded impairments after operating profit and before net earnings, while Goldfields recorded an impairment after profit, before tax and exceptional items.



## Accounting for site rehabilitation and environmental costs

Mining companies normally incur significant costs at mine sites after the minerals have been extracted and the mine is closed. Such costs include those to remove plant and other facilities and to restore the area in a manner required by law or in accordance with a company's own accepted practices. In addition, reclamation and other environmental obligations frequently arise during ongoing operations. The question is how to account for such costs.

The options are to:

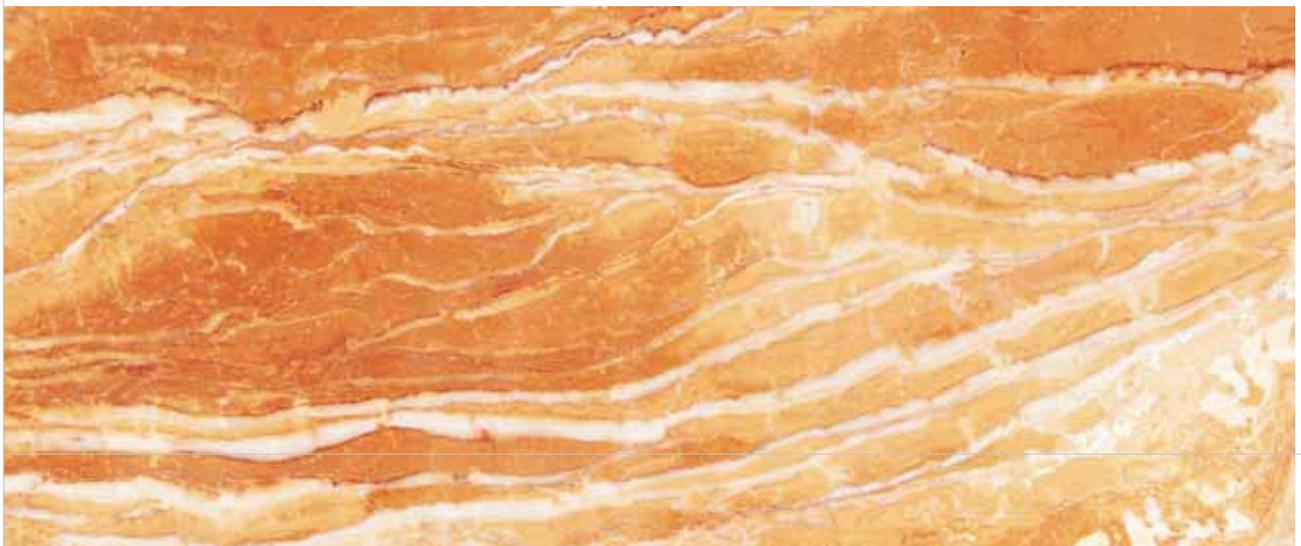
- Expense costs as incurred
- Accrue costs by incrementally increasing a provision over the life of the mine
- Provide for the present value of the total future costs expected to be incurred in making good past damage and other related closure costs when the obligation is incurred. The amount capitalized is then amortised over the life of the mine

Historically, asset removal and site rehabilitation costs were charged to expense at the time that they were incurred. This practice was accepted because the costs were significantly lower than they are currently and there were few regulations requiring companies to rehabilitate

sites. The situation today could not be more different. Governments have introduced stringent environmental and rehabilitation requirements, the public as a whole has become more environmentally conscious and demanding, and mining companies themselves have introduced their own codes of environmental practice. The result is that the future cash outlays can indeed be significant.

In 1999 the International Accounting Standards Board issued IAS 37 Provisions, Contingent Liabilities and Contingent Assets. The same standard was issued in the United Kingdom as FRS 12. This standard states that a provision should be recognised only when all of the following criteria are met:

- An enterprise has a present obligation (legal or constructive) as a result of a past event



*“From 2004 most of the world’s leading mining companies will provide for asset retirement at the time the obligation arises.”*

- It is probable that an outflow of resources embodying economic benefits will be required to settle the obligation
- A reliable estimate can be made of the provision

The standard states that no provision is recognised for future operating costs; only those obligations that arise from past events existing independently of an enterprise’s future actions are recognised as provisions. An appendix to the standard indicates that the estimated costs of removing an oil rig and restoring damage resulting from installation should be provided for when the rig is installed, but that restoration costs that might arise from the future extraction of oil should be recognised as a liability only when the oil is extracted and the restoration obligation arises. The example is analogous to situations in the mining industry relating to the removal of plant and restoration of mine sites.

IAS 37 and FRS 12 brought about a significant change in the way mining companies reporting under IFRS or U.K. GAAP account for such costs. From 1999, these companies have accrued site-decommissioning costs on a discounted basis when mines become operational and have included the corresponding amount in the cost of the assets to be depreciated. Liabilities for ongoing rehabilitation necessitated by mining operations are accrued as they arise.

In June 2001, the U.S. Financial Accounting Standards Board issued SFAS No. 143 Accounting for Asset Retirement Obligations, which is effective for accounting periods commencing January 1, 2003. In accordance with this statement, asset retirement obligations need to be recognised when they are incurred if a reasonable estimate of fair value can be made. The initial measurement will be at fair value and the asset retirement cost capitalised as part of the asset’s carrying value and subsequently allocated to expense over the asset’s useful life. This statement is very much in accord with the principles in IAS 37, as they apply to the mining industry, as well as with the tentative views formed by the IASB Steering Committee.

Nine of the twenty-one companies we reviewed made a provision in 2002 on a discounted basis at the time a liability for rehabilitation arose and included this amount in the cost of assets. Eleven companies accrued the costs on a systematic basis over the life of the mine, including five that report in accordance with U.S. GAAP and have adopted the provisions of SFAS No. 143 in 2003. With Canadian accounting standards to be aligned with SFAS 143 from 2004, most of the world’s leading mining companies will provide for asset retirement at the time the obligation arises.

Of interest is the policy of Inco, whereby estimated future removal and site restoration costs are charged to earnings on a straight-line basis over the estimated remaining life of the related business operation. Companies more frequently use a unit of production basis.

Few companies disclose information regarding their accounting for ongoing environmental programmes, but those that do, expense the costs as incurred.

The following accounting policy from Anglo American addresses both site rehabilitation and ongoing environmental costs:

“An obligation to incur restoration, rehabilitation and environmental costs arises when environmental disturbance is caused by the development or ongoing production of a mine or quarry. Costs arising from the installation of plant and other site preparation work, discounted to its present value, are provided for and capitalised at the start of each project, as soon as the obligation to incur such costs arises. These costs are charged against profits over the life of the operation through the depreciation of the asset and the unwinding of the discount on the provision. Costs for restoration of subsequent site damage, which is created on an ongoing basis during production, are provided for at their net present values and charged against profits as extraction progresses.”

Chalcedony onyx

This mineral forms in cavities in rocks of different types, especially lava



## Business combinations

### *-accounting for goodwill and mineral rights*

A business combination is perhaps the most complex accounting issue encountered in the mining industry. As the global mining industry continues to consolidate the number of combinations, and their size, shows no sign of slowing down. At the same time, the accounting rules for business combinations are evolving but still do not provide any specific guidance for transactions within this industry.

When one mining company acquires another, it is generally buying one or more of the following:

- Exploration property. Some prospecting or exploration has taken place, but the extent of mineralisation has not yet been determined
- Mineral property. The extent of mineral resources has been determined with some degree of precision, but a feasibility study to demonstrate the economic viability of extracting the minerals has not been performed
- Undeveloped property. A feasibility study has been performed and the extent of proven and probable mineral reserves determined
- Developed property. A mine and related processing plant are in production or under construction (a partially developed property)

Questions that arise in accounting for a business combination include:

- To which of the above asset types can (or should) purchase consideration be allocated?
- How does one determine the fair value of mining assets for which the economic potential has not been established?
- Which of the above types would be considered tangible assets and which intangible?
- How should the difference between the purchase consideration and the fair value of the identifiable assets be treated? Is there such a thing as goodwill in a mining business?

The IASB Steering Committee discussed accounting for mining assets and posed similar questions but did not provide any tentative conclusions. Our survey revealed some lack of consistency in practice.

Under U.S. GAAP these issues were sometimes masked by accounting for business combinations as mergers, such as in the 2001 combination of Barrick and Homestake. With the implementation of SFAS 141 in 2002, however, merger accounting is no longer permitted. The concurrent implementation of SFAS 142 ended the requirement to amortise goodwill and other intangible assets in most circumstances, imposing a requirement for impairment testing instead. Under these new standards, whether mining assets acquired in a business combination are classified as tangible or intangible will influence whether they have to be amortised through the income statement.

The following extract is from Barrick's annual report:

"On December 14, 2001, a wholly owned subsidiary of Barrick merged with Homestake Mining Company ("Homestake"). Under the terms of the merger agreement, we issued 139.5 million Barrick common shares in exchange for all the outstanding common shares of Homestake, using an exchange ratio of 0.53:1. The merger was accounted for as a pooling-of-interest. The consolidated financial statements give retroactive effect to the merger, with all periods presented as if Barrick and Homestake had always been combined."

U.K. GAAP (FRS 10) effectively permits a company to choose whether to amortise its intangible assets, including goodwill, or not to amortise but to perform regular impairment tests. The choice hinges on whether intangibles are considered to have a finite or infinite life. Interestingly, all five companies we reviewed that report under U.K. GAAP amortise their goodwill and other intangibles, generally over twenty years. Their reasoning might be that all mineral properties, once extraction commences, have finite lives.

*“...accounting rules for business combinations are evolving but still do not provide any guidance for transactions within this industry.”*

International Financial Reporting Standards currently permit merger accounting in certain limited circumstances. They also require the amortisation of goodwill and other intangibles. The IASB, however, has issued a proposal that would essentially align the accounting for business combinations, goodwill and other intangibles with U.S. GAAP, end amortisation and require impairment testing of intangibles.

In its November 2000 Issues Paper, the IASB Steering Committee indicated a growing concern that companies that had paid more than market value for assets allocated the total purchase price as property cost and then subsequently recorded an impairment on those assets. This approach may have obscured the fact that the original purchase price paid for the assets was too high. For this reason, some argue that the excess purchase consideration should be recorded as goodwill. Others add that the purchase price in such circumstances may, and often does, include goodwill. There are yet others who oppose the recognition of goodwill in a mining acquisition on the grounds that separately identifiable goodwill does not arise. The steering committee did not develop a tentative view.

A few of the companies we reviewed do not show goodwill on their balance sheet and do not refer to goodwill in their accounting policies. The remainder all include a policy of recognising goodwill in accounting for business combinations. None of the companies we reviewed has an explicit policy of not attributing purchase consideration to goodwill.

The following examples illustrate the diversity of accounting policies mining companies are disclosing in their annual reports:

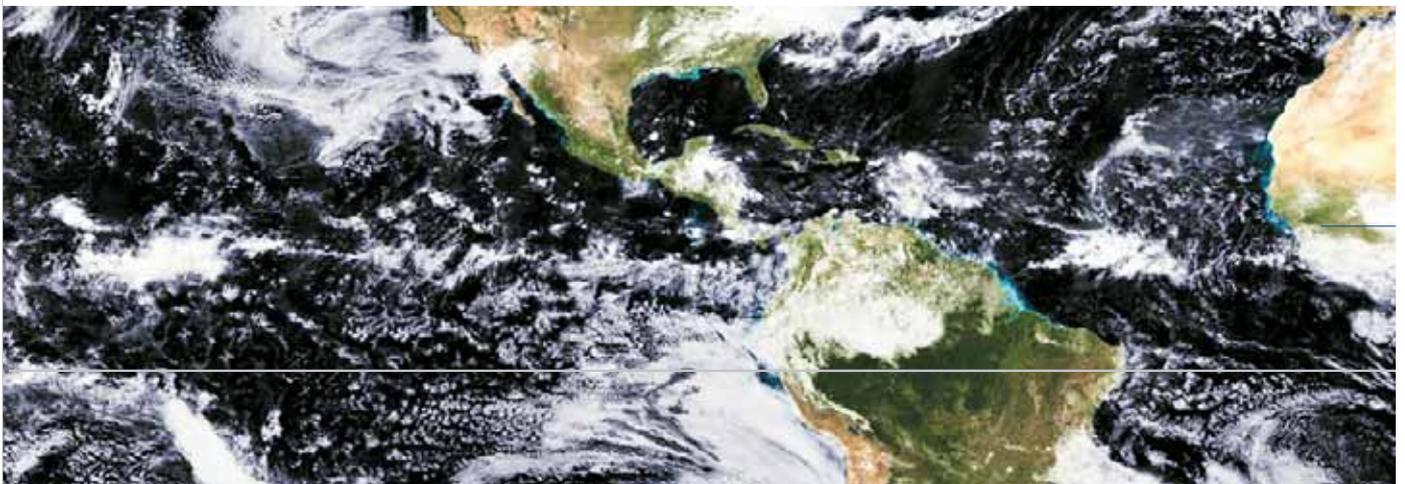
#### **Anglo American**

“Where an investment in a subsidiary, joint venture or an associate is made, any difference between the purchase price and the fair value of the attributable net assets is recognised as goodwill. Goodwill is amortised over its estimated useful life up to a maximum of twenty years. The unamortised balance is reviewed on a regular basis and, if an impairment in value has occurred, it is written off in the period in which the circumstances are identified.”

In November 2002, Anglo American acquired a 100 percent interest in Compañía Minera Disputada de Las Condes Limitada, a company engaged in the mining of copper in South America. Notes to the financial statements show that no goodwill arose on this acquisition but that there was a fair value adjustment of \$746 million to the book amount of tangible fixed assets acquired, “reflecting the revaluation of reserves and resources, land and buildings, and plant and equipment to fair value.”

#### **Newmont**

In February 2002, Newmont acquired a 100 percent interest in Normandy Mining, then Australia’s largest gold company which was accounted for using the purchase method. Fair values were attributed to items disclosed as intangible assets: proven and probable reserves, undeveloped mineral interests and other intangible assets. After allocating fair values, a residual purchase price of \$1,894.3 million was allocated to goodwill.



Additional disclosures of interest include:

“Intangible assets, including proven and probable reserves and undeveloped mineral interests, were adjusted to estimated fair value based on the quantity of material, the estimated future production costs and capital expenditure required to produce the material at each site.”

“Proven and probable reserves, other mineralised material and around-mine exploration potential have been valued based on estimated discounted cash flows from future production of each class of material. Other exploration potential has been valued based on recent market comparables for sales of similar properties.”

Newmont also discloses that in 2001 it completed a merger with Battle Mountain Gold Company that was accounted for as a pooling of interests. The 2002 financial statements include that company’s financial data as if Battle Mountain had always been part of Newmont.

**Placer Dome**

The treatment adopted by Placer Dome on its acquisition of Aurion Gold in 2002 was similar to that adopted by Newmont. Fair values were attributed to mineral properties and mine development and to undeveloped mineral interests, with the residual purchase price of \$200 million allocated to goodwill.

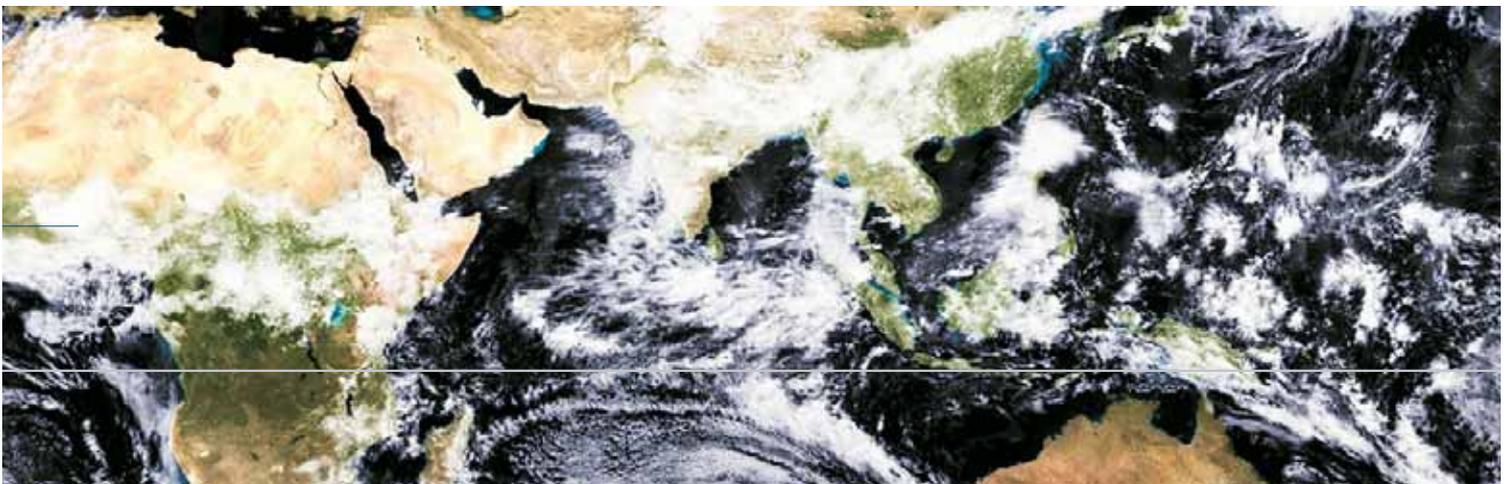
Placer Dome, however, does not disclose any intangible assets other than goodwill on its balance sheet. One would presume that undeveloped mineral interests have been included in tangible assets, unlike Newmont.

**Xstrata**

“On the acquisition of a subsidiary...the purchase consideration is allocated to assets and liabilities on the basis of the fair value at the date of acquisition. Those mineral reserves and resources that are able to be reliably valued are recognised in the assessment of fair values on acquisition. Other potential reserves and resources and mineral rights, for which, in the Directors’ opinion, values cannot reliably be determined, are not recognised. When the cost of acquisition exceeds the fair value attributable to the Group’s share of the identifiable net assets, the difference is treated as purchased goodwill. This is amortised on a straight-line basis over its useful economic life up to a maximum of twenty years.”

Xstrata made a \$2 billion acquisition of coal mining operations in 2002 but has attributed the entire purchase consideration to intangible and tangible assets, and has not raised goodwill. Intangible assets are stated to include export rights and mineral rights.

The accounting policies reviewed above indicate a lack of consistency regarding the assets to which value is attributed in an acquisition, the way the assets are classified (which impacts amortisation) and the approach to goodwill. This area of accounting in the mining industry should receive high priority in terms of initiatives to improve consistency.



## Accounting for joint ventures and related undertakings

“Proportionate consolidation is the preferred option for the majority of the world’s major mining companies.”

The cost of developing a large mining project can exceed one billion U.S. dollars, sometimes by a considerable margin, and the return that will be earned on this massive investment is difficult to predict. It is therefore not surprising that most large mining companies are involved in joint ventures or similar arrangements for at least some of their mining activities in order to spread risk.

The nature of these joint undertakings can vary widely, from owning a share of the individual assets used in a joint venture to owning a stake in a freestanding entity. The accounting also varies depending on the nature of the arrangement. Under IAS 31, “jointly controlled assets” (as described in the standard) are accounted for using proportionate consolidation. For “jointly controlled entities,” (as described in the standard) the benchmark accounting treatment is proportionate consolidation, but equity accounting is an allowed alternative. In the United Kingdom, FRS 9 calls for a method that is essentially proportionate consolidation for a “joint arrangement that is not an entity” and for “gross equity” accounting for joint ventures. The latter is equity accounting with slightly expanded disclosures. In the United States, an interpretation of APB 18 is commonly used in the mining industry to account for unincorporated joint ventures using proportionate consolidation; however, equity accounting has to be used for incorporated joint ventures. In Canada, proportionate consolidation is required for all joint ventures as defined.

A study by the so-called “G4+1” group of accounting standard setters led to a publication in 1999 entitled Reporting Interests in Joint Ventures and Similar Arrangements. (5) This study advocated the use of equity accounting for what IAS 31 defines as a “jointly controlled operation.” To the best of our knowledge, the subject has not been addressed since 1999 by any of the standard setters that made up the G4+1 group. In addition, the IASB Steering Committee did not develop a tentative conclusion regarding the accounting for joint

ventures. The income recorded under equity accounting and proportionate consolidation is the same, but the presentation on the balance sheet is dramatically different.

Of the twenty-one companies we reviewed, four make no mention of joint ventures and are presumed not to have any. The accounting policies of the remaining seventeen, not surprisingly, fall into the following groups depending on which accounting standards are applied:

- Two companies follow IRFS or national standards aligned with IFRS and account for joint ventures using the proportionate consolidation method
- Five companies follow U.K. GAAP and use the “gross equity method” for joint ventures. All but one state that they use proportionate consolidation to account for joint arrangements that are not entities
- Five companies follow U.S. GAAP and account for joint ventures using proportionate consolidation. Of these companies, three state that this method is used for unincorporated joint ventures
- Three companies follow Canadian GAAP and account for joint ventures using proportionate consolidation
- Two companies follow accounting standards of other countries and account for joint ventures using the equity method

Clearly, proportionate consolidation is the preferred option for the majority of the world’s major mining companies. It remains to be seen what the standard setters decide in the years ahead.



Gold

Forms mainly in hydrothermal veins, often associated with quartz and sulphides



The BHP Billiton accounting policy is one of the most comprehensive disclosures in this area:

#### Joint ventures

“A joint venture is an entity in which the BHP Billiton Group holds a long-term interest and which is jointly controlled by the BHP Billiton Group and one or more other venturers. Decisions regarding the financial and operating policies essential to the activities, economic performance and financial position of that venture require the consent of each of the venturers that together, jointly control the entity. A formal agreement between these venturers is not necessary to create joint control provided that in practice each relevant venturer’s consent is required for strategic decisions.

“The results of joint ventures are accounted for using the gross equity method of accounting. Under the gross equity method, the cost of the investment in the venture is adjusted by BHP Billiton’s Group’s proportionate share of the results of operations of the venture.”

#### Joint arrangements

“The BHP Billiton Group has certain contractual arrangements with other participants to engage in joint activities where all significant matters of operating and financial policy are determined by the participants such that the entity itself has no significant independence to pursue its own commercial strategy. These contractual arrangements do not create an entity, such as a joint venture, due to the fact that the policies are those of the participants, not a separate entity carrying on a trade or business of its own.”

“The financial statements of the BHP Billiton Group include its share of the assets, liabilities and cash flows in such joint arrangements, measured in accordance with the terms of each arrangement, which is usually pro-rata to the BHP Billiton Group’s interest in the joint arrangement.”



# Currencies

## *used in financial statements*

*“Very few...companies...say anything at all about their policies regarding measurement currency.”*

The currency that an international mining enterprise uses to keep its books can impact dramatically on its financial statements, yet the subject receives little coverage in annual reports and was not addressed in the IASB Steering Committee's Issues Paper. Most of the commodities that are produced by mining companies and sold in international markets are priced in US dollars regardless of the destination of the customer. This is true of precious metals, base and ferrous metals, as well as coal. Production outside of the United States, however, is in countries whose national currency is not the US dollar; accordingly most of the operating costs would normally be incurred in local currency. Loan finance and capital purchases may be denominated in US dollars, local currency or even a third currency. What currency then should such a company use for keeping its books and preparing its financial statements?

Some guidance is provided in Interpretation SIC-19 of the Standing Interpretations Committee of the IASB, issued in 2000 and entitled Reporting Currency – Measurement and Presentation of Financial Statements under IAS 21 and IAS 29. This interpretation refers to both a “reporting currency,” which IAS 21 defines as “the currency used in presenting the financial statements,” and a “measurement currency,” which is “a currency for measuring items in ... financial statements.” Measurement currency is sometimes referred to as functional currency. For example, suppose a U.S. company has a copper mining subsidiary in Chile. In all likelihood, the U.S. parent will present its financial statements in dollars (the reporting currency), but does the Chilean subsidiary keep its records in dollars and translate costs as they are incurred from pesos into dollars? Or does it keep its records in pesos and translate revenues as they are earned from dollars into pesos?

Generally, companies in other industries use the currency of the country in which they are domiciled as their reporting currency, and some countries require this. It is, however, common for large companies in the mining industry to use the U.S. dollar as their reporting currency, regardless of where they are domiciled. Of the twenty-one companies whose annual reports we reviewed, fourteen use the U.S. dollar as their reporting currency and eleven of these are not U.S.-based companies. The remaining seven use their domestic currency as their reporting currency. Five of the seven, however, have most or all of their operations in their home country.

The position with measurement currency is more complex. Very few of the companies we reviewed say anything at all about their policies regarding measurement currency. SIC-19 states: “The measurement currency should provide information about the enterprise that is useful and reflects the economic substance of the underlying events and circumstances relevant to the enterprise. If a particular currency is used to a significant extent in, or has significant impact on, the enterprise, that currency may be an appropriate currency to be used as the measurement currency.”

Unfortunately, neither SIC-19 itself nor the examples in the appendices provide guidance for determining measurement currency in cases where revenues are earned in one currency and the majority of costs are incurred in another, the situation many mining companies face.

Whether an international mining company uses the U.S. dollar or local currency as the measurement currency can have a dramatic impact on its reported financial position when the dollar is the reporting currency.



If local currency is the measurement currency, under International (and most other) Financial Reporting Standards the assets and liabilities are translated into dollars at reporting dates using the exchange rates at that date. The adjustment is booked through reserves and hence does not affect reported income, but in a year when there are large swings in exchange rates, the adjustment can greatly affect shareholders' funds reported on the balance sheet.

Our review of the 2002 financial statements of four major diversified mining groups revealed the following disclosures in the Statement of Total Recognised Gains and Losses. All four report under U. K. accounting standards. All have substantial operations in Australia and (with the exception of Rio Tinto) South Africa. The currencies of these two countries declined significantly against the U.S. dollar in 2001 and then recovered in 2002.

All four use the U.S. dollar as the reporting currency and amounts below are in millions of dollars:

Company	2002 Profit	2002 Currency Adjustments	2001 Profit	2001 Currency Adjustments
Anglo American	1,563	2,531	3,085	(2,986)
BHP Billiton	1,465	25	1,964	(712)
Rio Tinto	651	579	1,079	(449)
Xstrata	142	626	11	(168)

The currency adjustments are significant. Anglo American's 2002 currency adjustment represents 16 percent of shareholders' funds; the equivalent percentages for Rio Tinto and Xstrata are 8 percent and 18 percent.

Disclosures in Xstrata's financial statements suggest that its subsidiaries in Australia and South Africa use the local currencies as their measurement currency, but this is not stated explicitly. This presumption is supported by the size of the adjustments booked through the Statement of Total Recognised Gains and Losses in 2001 and 2002. BHP Billiton refers to the translation of financial statements of entities that have a functional currency other than the U.S. dollar, but the relatively smaller size of the currency adjustment in 2002 suggests that most of BHP Billiton's operations may be using the dollar as the functional currency. Rio Tinto states that some of its subsidiaries outside the United States use the dollar as the functional (measurement) currency, but the reported results suggest that a meaningful part of the group's operations is using local currencies as the measurement currency. Anglo American does not disclose its policy on functional currency, but the financial

statements suggest that most, if not all, of its operations use local currency as the functional currency.

Barrick, a large gold mining company based in Canada, uses the U.S. dollar as its reporting currency and is one of only a few companies that clearly states its policy on measurement currency:

**Barrick**

"The functional currency of all our operations, except for our Argentinean operations where it is the Argentinean peso, is the United States dollar ("the U.S. dollar"). Except for our Argentinean operations, we remeasure balances into U.S. dollars as follows:

- Non-monetary assets and liabilities using historical rates
- Monetary assets and liabilities using period-end exchange rates

- Income and expenses using average exchange rates, except for expenses related to assets and liabilities remeasured at historical exchange rates

Gains and losses from remeasurement of foreign currency financial statements into U.S. dollars, and from foreign currency transactions, are included in earnings".

"For our Argentinean operations, we translate assets and liabilities into U.S. dollars using period-end exchange rates; and revenues and expenses using average rates. We record the resulting translation adjustments in a cumulative translations adjustment account in Other Comprehensive Income (OCI), a part of shareholders' equity."

Either the International Accounting Standards Board, or the industry itself, may wish to address the apparent lack of consistency in choosing a measurement currency and the impact that the choice can have on the financial statements of an international mining company.

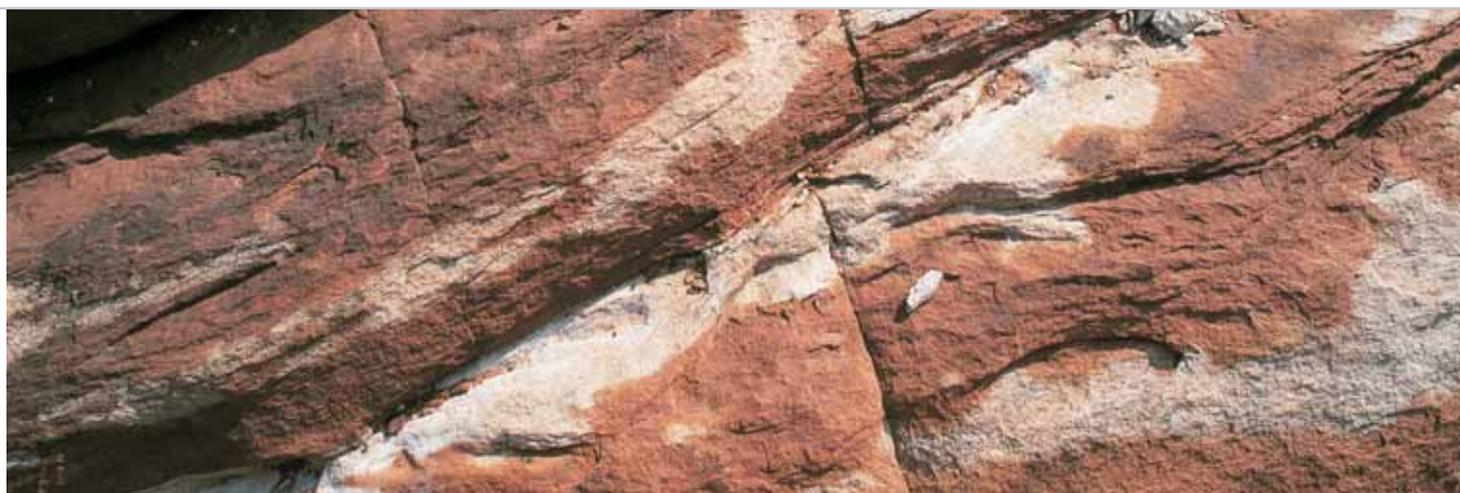
## Tables analysing *certain accounting policies and disclosures*

### Amortisation of capitalised costs related to mineral reserves

Description of basis of amortisation	Number of companies
Unit of production basis and proven and probable reserves	11
Unit of production basis and life-of-mine / estimated economic life / well-defined mineral ore reserves	7
Based on future production	1
Ratio between production and estimated capacity	1
Straight line over useful economic life	1

### Accounting for Impairment

Accounting Policy Disclosure	Number of companies
Impairment accounting policy disclosed	18
No disclosure of accounting policy	3
Income Statement Disclosure	Number of companies
Exceptional item before total operating profit	2
Separate line within costs and expenses	5
Part of net operating costs / other costs	4
Separate item after operating profit	1
Exceptional item after profit before tax and exceptional items	1



Accounting for site rehabilitation and environmental costs

Basis for Provision	Number of companies
Provision made on a discounted basis at the time the liability arises and added to the cost of the asset	9
Accrue over life of mine	11*
Other	1

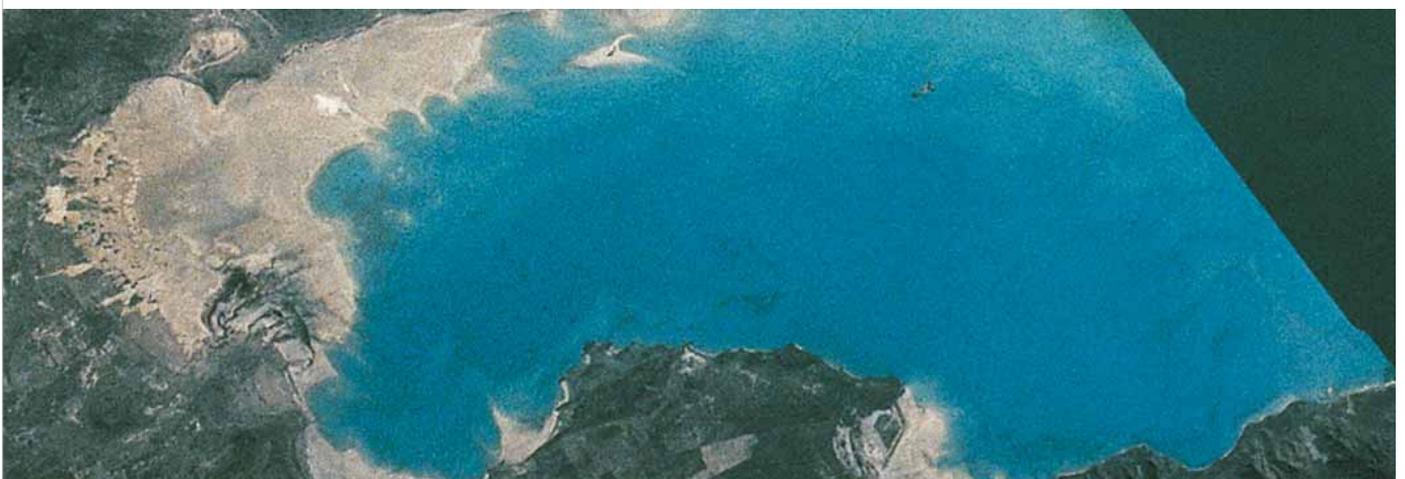
\*Includes five companies reporting under U.S. GAAP that have adopted SFAS No. 143 in 2003

Currencies used in financial statements

Reporting Currency	Number of Companies
U.S. dollar U.S. based companies	3
U.S. dollar non-U.S. based companies	11
Local currency	7
<b>Measurement Currency</b>	
Explicit disclosure of policy	3
Partial disclosure of policy	3
U.S. dollar reporting currency with no disclosure	8
Local currency as reporting currency	7

## Company reports *reviewed*

Company	Report and period	Accounting framework
Anglo American plc	Annual report for the year ended 31 December 2002	U.K. accounting standards
AngloGold Limited	Annual report for the year ended 31 December 2002	International Accounting Standards and South African GAAP
Ashanti Goldfields Company Limited	Annual report for the year ended 31 December 2002	U.K. accounting standards
Barrick Gold Corporation	Annual report for the year ended 31 December 2002	U.S. GAAP
BHP Billiton Plc	Annual report for the year ended 30 June 2002	U.K. accounting standards
Corporacion Nacional del Cobre de Chile	Consolidated financial statements for the year ended 31 December 2001	Chilean accounting principles
Compañía Vale do Rio Doce	Annual report for the year ended 31 December 2002	Brazilian accounting principles
Falconbridge Limited	Annual report for the year ended 31 December 2002	Canadian GAAP
Freeport McMoRan Copper & Gold Inc	Annual report for the year ended 31 December 2002	U.S. GAAP
Gold Fields Limited	Annual report for the year ended 30 June 2002	International Accounting Standards and South African GAAP
Inco Limited	Annual report for the year ended 31 December 2002	Canadian GAAP
MIM Holdings Limited *	Annual report for the year ended 30 June 2002	Australian GAAP



Company	Report and period	Accounting framework
Newmont Mining Corporation	Annual report for the year ended 31 December 2002	U.S. GAAP
Noranda Inc	Annual report for the year ended 31 December 2002	Canadian GAAP
OJSC "MMC Norilsk Nickel"	Consolidated financial statements for the year ended 31 December 2002	International Accounting Standards
Phelps Dodge Corporation	Form 10 k for the year ended 31 December 2002	U.S. GAAP
Placer Dome Inc	Annual report for the year ended 31 December 2002	U.S. GAAP
Rio Tinto Plc	Annual report for the year ended 31 December 2002	U.K. accounting standards
Teck Cominco Limited	Annual report for the year ended 31 December 2002	Canadian GAAP
WMC Resources Limited	Annual report for the year ended 31 December 2002	Australian GAAP
Xstrata plc	Annual report for the year ended 31 December 2002	U.K. accounting standards

\* MIM Holdings Limited was acquired by Xstrata plc in June 2003





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## The Deloitte *Mining Industry Leadership Team*



