THE BRITISH COLUMBIA ADVISORY COUNCIL ON MINING

Report and Recommendations to the
Minister of Employment and Investment

British Columbia
Mine Reclamation
Security Policy

April 1996
BRITISH COLUMBIA ADVISORY COUNCIL ON MINING

Mine Reclamation Security Policy Task Force

Report and Policy Recommendations

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BRITISH COLUMBIA ADVISORY COUNCIL ON MINING

Mine Reclamation Security Policy Task Force

Report and Policy Recommendations

Preface

In 1992 Canada's mines ministers in cooperation with the Mining Association of Canada launched The Whitehorse Mining Initiative (WMI) to ensure the continued viability of the country's mining industry. The WMI brought together representatives from industry, government, labour, aboriginal peoples and environmental groups to develop a strategic vision for the Canadian mining industry. Subsequently, British Columbia took a lead role in developing the Whitehorse Mining Accord, an action plan based on the WMI, which was signed in Victoria on October 14, 1994 by Canada's mines ministers and other participants.

In February 1995, as a follow-up to its WMI commitment, the province's Ministry of Energy, Mines and Petroleum Resources* formed a ministerial Advisory Council on Mining to help implement the recommendations of the accord in British Columbia. One of four projects initiated under the auspices of the advisory council was the establishment of a multi-stakeholder Mine Reclamation Security Policy Task Force to deal with several key reclamation security issues, and to make recommendations for policies and procedures which would minimize government and public risk while meeting the needs of the province's mining industry.

This report contains the findings and recommendations of the Task Force.

* On February 28, 1996, the Ministry of Energy, Mines and Petroleum Resources was amalgamated into the Ministry of Employment and Investment.
EXECUTIVE SUMMARY

Introduction

In 1991, the then Ministry of Energy, Mines and Petroleum Resources initiated discussions among industry, government and the public regarding future mine reclamation policy direction. As a result of its involvement in the Whitehorse Mining Initiative, in February 1995, the ministry formed an Advisory Council on Mining which, in turn, appointed a multi-stakeholder Mine Reclamation Security Policy Task Force to address three broad reclamation security issues: acceptable types of security; the amount of security required; and the timing of security deposits. The task force was asked to make policy recommendations to minimize the government risk for the cost of reclamation, while balancing economic and environmental concerns. Over six months of intensive discussions, the task force was able to reach consensus on most of these complex issues.

Background

Mining, British Columbia’s second largest industry and a substantial contributor to the provincial economy, continues to be challenged by global competition for investments and markets, competing demands for the use of land and natural resources, and society’s requirements for environmental protection. The B.C. government is committed to a healthy, viable and environmentally sound mining industry. Therefore, mine reclamation policies must continue to meet both economic and environmental objectives.
Provincial legislation regards mining as a temporary land use and requires that mining companies carry out a program of continual and progressive reclamation so that, upon termination of mining, the land and watercourses are returned to an environmentally sound and productive state. Consistent with the principle of polluter pays, mining companies are fully responsible for environmental protection and reclamation at their mine sites. Regulation of the industry is carried out by the Ministry of Employment and Investment under the Mines Act, and the Ministry of Environment, Lands and Parks under the Waste Management Act, Water Act, Wildlife Act, and Land Act.

The Ministry of Employment and Investment grants permits to mining companies for approved mine plans and reclamation programs. One of the conditions of permits is that companies post financial security which can be used by the government if a company defaults on its reclamation obligations. The province's objective in managing reclamation security is to obtain reasonable assurance that it will not have to contribute to reclamation costs, while not placing too onerous a financial burden on the industry. With $137 million currently on deposit from B.C. mines and an estimated total reclamation obligation exceeding $350 million, there is a significant potential unfunded liability to government. The ministry is concerned about this level of unfunded liability in light of the fact that:

- there have been two instances of insolvent mining companies within the last few years, representing a potential exposure to the province of as much as $30 million in reclamation costs;
- a number of major mines in B.C. are expected to close in the next five to ten years, many of which will require substantial long-term remedial treatment;
- ongoing volatility of metal prices could put mine operations and reclamation plans at risk;
- with increasing constraints on funding, government cannot afford to cover the costs of significant remediation, while environmental standards will not allow for anything less than the proper clean-up of sites.
Policy Recommendations

The task force grouped its recommendations under the following subjects: cost estimating; risk management; types of security; timing of security; full security; exit tickets; and public involvement and disclosure. Agreement was reached on several very important issues, including equitable and consistent methods of determining reclamation liability, types of security instruments which should be accepted by government, a plan for developing effective risk management procedures, firm guidelines for the timing of security requirements, and specific processes for dealing with long-term reclamation issues.

Mine Reclamation Cost Estimating

Cost estimating is integral to determining reclamation liability at each mine, on which security decisions are based. Policy recommendations have been made on five related issues. The task force recommends that standardized criteria for cost estimating, developed by the ministry in consultation with industry, be used by all mining companies to ensure consistency of estimating data, and that a standardized method of estimating acid rock drainage (ARD) costs be developed. With clear reclamation objectives being a prerequisite for determining reclamation liability, it is recommended that site-specific post-closure standards for land-use, productivity, soil survey and resloping where required continue to be developed by the ministry.

The task force was able to reach agreement on the difficult issue of costing reclamation work. Historically, government has based security requirements on its own cost estimates of total reclamation liability, which entail the use of contractors to perform reclamation work. However, industry is able to perform the same work more economically, therefore, its costing and estimation
of total liability is significantly lower. The task force has recommended that both approaches to costing should be recognized, depending upon the level of assessed risk posed by individual companies: industry estimates should be used for companies deemed at a low risk, and government figures used in those cases where a high risk of default is indicated.

The task force separately addressed the estimation of long-term ARD costs, where reclamation may be required long into the future. Based on the experience gained at the Equity Silver Mine, the task force has recommended that a specific process of negotiation be employed by government, the individual company and public stakeholders in determining the total reclamation liability for ARD mines. The task force also reviewed various methods of setting a discount rate for the funding of long-term reclamation, recommending that this be done on a mine-by-mine basis.

Risk Management

The ministry currently performs informal financial risk assessment and monitoring of individual mines and mining companies. The task force has recommended formalizing and expanding existing risk assessment procedures, particularly as several other recommendations are based on a site- and company-specific approach, which is dependent upon an accurate assessment of the level of risk posed by each mine. The task force has also recommended that a government/industry/environmental sub-committee be formed to pursue the development of effective risk assessment and monitoring policies and procedures.

Types of Security and Objective of “Full Security”

To date, the ministry has accepted a limited range of security instruments, however, in recent years it has been working cooperatively with industry to review alternative forms of security, such as
parent company guarantees and pledges of assets, which are accepted as corporate security by financial institutions. The task force agreed that under existing government policies and procedures, it would be virtually impossible to achieve full security during the life of a mine and, therefore, that there would always be an potential unfunded liability to the Crown. Consequently, the task force has recommended the acceptance of a broader range of security instruments, under carefully specified conditions, thereby increasing the likelihood that full security will be in place throughout the operational life of a mine.

**Timing of Security**

As reclamation requirements increase toward the end of a mine’s life, the task force addressed the question of security requirements at closure and the timing of obtaining such security. It has made very specific recommendations: that 100% hard security be required at or prior to closure for all single mine companies and for mines with ARD, and that requirements for conventional mines operated by multi-mine companies be determined on an individual basis. The task force further recommends that in the case of those mines requiring significant hard security at closure, a staged payment plan may be negotiated based on the ministry’s formalized risk assessment policies.

**Exit Tickets and Environmental Liability**

The mining industry would like companies to be released from indefinite liability for a mine site by being granted “exit tickets,” which would allow them to surrender to the province the mineral title and all environmental and other liabilities for a property, once the conditions of the mine permit and reclamation plan have been satisfied. The government cannot issue exit tickets under current provincial legislation. As well, environmental representatives believe that the mining industry should not be treated differently from other industries with respect to liability for future
contamination which may arise from a mine site, even if reclaimed fully to the standards of the day. The task force recommends that a “Certificate of Compliance” be issued to companies subsequent to mine closure stating that they have complied with the remediation requirements as set out in their mine permit. It has also recommended that a government/industry/public committee be established to further examine the exit ticket concept.

Public Involvement and Disclosure

The task force discussed the public’s role in the context of each issue, and made specific recommendations regarding the accessibility of mine reclamation security information and public involvement in the process of determining security requirements. The B.C. government has an open policy regarding public involvement and informing the public. In support of these objectives, the task force has recommended that: mine reclamation permitting documentation, which is public, should be expanded to provide more detail regarding reclamation cost estimates and security requirements, and; public involvement in the review of mine reclamation issues, through such vehicles as public liaison committees, should continue to be encouraged by clearly defining and communicating the public’s role in these processes.
INTRODUCTION

This report is part of a process that began in 1991, when the then Ministry of Energy, Mines and Petroleum Resources first published discussion papers on mine reclamation to initiate discussions among industry, government and the public regarding future policy direction. With a record of progressive mine reclamation legislation, it is the ministry’s objective to continue to develop relevant and effective reclamation policy which will meet the needs of all stakeholders in the mining industry throughout the 1990s and beyond.

In early 1993 the ministry established the Reclamation Security Policy Committee, a working group made up of representatives from several provincial government ministries and the mining industry. The mandate of the committee was to review, in-depth, the interrelated issues of mine reclamation risk and mine reclamation security, and to provide advice and recommendations for further consideration by both government and industry. The committee’s work was summarized in an interim report released in July 1994. A follow-up discussion paper published by the ministry in February 1995 provided a summary of the issues the committee had reviewed; the history, rationale behind and current status of various government policies and operating procedures; a number of general policy statements and principles; and outlined those areas requiring further evaluation.

Concurrently, as a result of its participation in the widely regarded Whitehorse Mining Initiative, the provincial government established an Advisory Council on Mining. One of the first initiatives of the council was to appoint a multi-stakeholder Mine Reclamation Security Policy Task Force to assist in developing mine reclamation security policy.
This report summarizes the task force’s intensive discussions over the past six months. While the objective of reaching consensus on many important and complex issues among members holding often diverse viewpoints posed considerable challenges along the way, the process was ultimately very positive and productive. The task force reached agreement on most issues and, as a result, is able to put forward a number of concrete policy recommendations.

Approach of this Report

To assist readers of this report in understanding its findings and recommendations, the task force felt it important that background information to the issues be provided. As well, the report explains the process used by the task force in reaching its final conclusions, and the rationale and qualifications associated with each policy proposal.

Certain of the following information is taken directly from or summarizes portions of the publications previously mentioned, which are referenced at the conclusion of the report. Readers are encouraged to review these publications for further background as they contain detailed explanations of several important concepts concerning mine reclamation and security.
BACKGROUND TO THE ISSUES

The Mining Industry in British Columbia

Mining is British Columbia’s second largest industry and a substantial contributor to the provincial economy. A major world producer of coal and copper, the B.C. mining industry also produces lead, zinc, molybdenum, gold and silver as well as a wide variety of industrial minerals for local markets.

Many B.C. communities rely on mining. Coal operations are particularly important in the Kootenay and Northeast regions of the province. Base and precious metal mines occur throughout B.C., with precious metal mining becoming increasingly important in the North Coast and Nechako regions. One of the world’s largest open-pit copper mines is located in the Thompson-Okanagan region. Industrial mineral operations are centred mainly in the southern quarter of the province.

In 1994, the mining sector produced output valued at more than $2.6 billion, while directly employing some 13,600 people throughout the province. The industry is responsible for a large portion of the province’s exports. In 1994, mining contributed approximately 13 percent of B.C.’s total export sales, with metals and coal comprising 85 percent of the minerals export total.

British Columbia’s mining industry, and the Canadian mining industry as a whole, has faced serious challenges over the past decade, particularly during the recession of the early 1990s when it
experienced the full effects of depressed commodity prices combined with the negative impact of
the high Canadian dollar. While a return to profitability was experienced in 1994, the industry
worldwide continues to be challenged by global competition for investments and markets,
competing demands for the use of land and natural resources, and the need to meet society’s
requirements for environmental protection.

The British Columbia government is committed to a healthy, viable and environmentally sound,
mining industry. Therefore, future policies regarding mine reclamation must continue to meet both
economic and environmental objectives.

Mine Reclamation

Provincial legislation regards mining as a temporary land use and requires that mining companies
carry out a program of environmental protection and reclamation so that, upon termination of
mining, the land and watercourses are returned to a safe and environmentally sound state, and to an
acceptable and productive end use. Most proposed reclaimed land use objectives are aimed at
providing wildlife habitat, grazing and forestry opportunities.

British Columbia’s mining industry presently utilizes over 33,000 hectares of land. Of the
province’s major coal and metals mines, coal mines have disturbed 14,312 hectares of land, of
which 5,317 hectares, or 37 percent, have been reclaimed. Metal mines have disturbed 18,976
hectares, of which 4,898 hectares, or 26 percent, have been reclaimed. The fact that more land has
been reclaimed at coal mines partially reflects the inclusion of reclaimed coal exploration, as well as
the difference in mining conditions. Most metal ore deposits are contained in single pits, which
continually expand as mining proceeds. Coal seams, on the other hand, are usually relatively shallow stratabound deposits, which can be mined and immediately backfilled and reclaimed, facilitating more rapid reclamation success. At present, disturbance is increasing at a faster rate than reclamation, which is attributable to the expansion of the mining industry over the past two decades. Should there be a general industry decline, where mines start closing at a rate faster than they are opening, the rate of reclamation would be expected to exceed the rate of disturbance.

In general, mining, especially open-pit mining, is a highly productive yet intensive use of the land. As an example, for every kilogram of copper produced in British Columbia there may be 200 kilograms of waste rock excavated and stored in waste dumps, and another 200 kilograms of tailings. The environmental acceptability of mining is dependent upon the ability to confine these impacts to a limited area and, following closure, to achieve an acceptable reclamation standard.

For most mines in British Columbia, reclamation entails the dismantling of buildings and structures, and the stabilization and revitalization of waste rock dumps and tailings ponds (in ore processing, waste particle slurry known as “tailings” is pumped into ponds for storage). A portion of this work occurs during the mine’s operating life, however, the majority is usually completed within ten years of closure. Reclamation issues are heightened in B.C. due to the fact that of the 103 permits currently issued for major coal, base metal, precious metal, industrial mineral, and quarries in the province, 39 are in various stages of post-closure reclamation, 50 are still in operation, nine are temporarily shut down but expected to re-open when economic conditions improve for the commodity involved, and five have obtained a permit but have not yet commenced operation. Of the 50 mines still operating, 12 could close permanently within the next five to ten years.
Generally the costs of reclamation activities are significant but relatively predictable. However, for certain mines, ongoing site management may be required long after closure, in which case the costs of potential reclamation activities can be extremely high and difficult to predict. This is particularly applicable to sites where acid rock drainage (ARD) is occurring. ARD refers to acidic run-off that contains heavy metals and can contaminate surface and groundwater. In ARD situations, it may be necessary to collect and treat the acidic run-off for many decades into the future. Uncontrolled acid effluent can have a major impact on water quality far from the mine site. Of the province’s 24 operating or recently closed metal mines, eight now generate ARD and a minimum of nine others have the potential to do so. The ministry is currently in the process of establishing a registry of properties where acid rock drainage is now occurring and those with ARD potential.

Legislation Governing Mine Reclamation in British Columbia

In Canada, each province is responsible for its own natural resources and, therefore, the mining industry is regulated provincially. British Columbia was one of the first provinces in Canada to enact mine reclamation laws and the first to extend its requirements to exploration sites. The province’s reclamation laws were initially enacted for major coal and mineral mines in 1969. In 1973, the legislation was amended to include coal and mineral exploration, as well as sand and gravel pits and quarries. In 1984, the Minister of Energy, Mines and Petroleum Resources published reclamation guidelines.

The Mines Act remained relatively unchanged until it was amended in 1990. The amended Act and its accompanying Health, Safety and Reclamation Code provide the current legislative framework, which applies to mining operations on public and private land.
Part 10 of the Code sets out broad technical objectives for reclamation, mainly pertaining to major coal and mineral mines. These comprise minimum requirements for productivity and water quality, long-term stability of waste rock dumps and tailings structures, site clean-up, and treatment and monitoring of discharges. Requirements for exploration activity are outlined in separate exploration guidelines, while those for placer mines and sand and gravel pits are set as conditions of individual reclamation permits.

Under the *Mines Act* and the Environmental Assessment Process (EAP), mining companies must submit a mine plan and reclamation program with any application for a new major coal or mineral operation or an amendment to an existing permit. This plan is reviewed by a Project Committee as well as an inter-agency Regional Mine Development Review Committee.

For major mines, the ministry’s philosophy has been to set broad reclamation standards which allow companies to develop their own programs on a site-by-site basis. The standards set out in the *Mines Act* and accompanying Code maintain this philosophy and were produced after considerable discussion with industry and other government agencies. Since reclamation was first introduced, companies have now largely integrated their reclamation planning into the overall mining process.

Reclamation permits are issued with special terms and conditions based upon recommendations of the Reclamation Advisory Committee, as well as public response. Continual and progressive reclamation is required over the life of a mine, including the annual submission of a report describing the progress of reclamation research and operations. Permits are modified when necessary as the reclamation plan responds to changes in mining conditions. In the case of non-compliance with conditions of the permit, the Chief Inspector may order closure of the mine.
The Purpose and Regulation of Mine Reclamation Security

One of the conditions of all reclamation permits is that companies post financial security which can be used by the government if the company defaults on its reclamation obligations.

The regulation of the mining industry is carried out by the Ministry of Employment and Investment under the Mines Act, and the Ministry of Environment, Lands and Parks under the Waste Management Act, Water Act, and Wildlife Act. Under a protocol agreement signed in 1991, the Ministry of Employment and Investment acts as the lead agency and “one window” for all mining-related activity requiring the posting of security, and collects and administers a single security deposit to cover the needs of both ministries.

The Roles and Responsibilities of Industry and Government

Mining companies are fully responsible for environmental protection and reclamation at their mine sites either under the Mines Act or the Waste Management Act. They must develop reclamation plans, estimate costs, and carry out planned reclamation work. The government’s principal role is a regulatory one, that is, to review reclamation plans, issue permits, inspect reclamation work, and administer security deposits on behalf of the province. In practice, however, planning and permitting has historically involved a process of negotiation and exchange between the ministry and individual mining companies. While the mine- and company-specific approach is supported by both government and industry, a primary goal of improving mine reclamation security policy is to establish more clearly defined, formally articulated, and consistently applied criteria and methods for the determination of individual reclamation security requirements.
"Reasonable Assurance"

Under current legislation, mine reclamation costs are borne by mining companies in British Columbia. This is consistent with the principle of polluter pays, whereby industry is held accountable for the environmental impacts caused by its actions. To the maximum extent possible, the province's objective is to avoid the risk that a mining company will default on its reclamation obligations and public funds will be required to perform a portion or all of the remaining reclamation work.

At the same time, it is not practical for the province to take a zero-risk position and have a policy of "absolute assurance" that it will bear no reclamation costs under any circumstances. Mine reclamation is an uncertain business. There is always the possibility of unforeseen events that could significantly increase costs. Setting security requirements to cover and plan for all contingencies would put a very significant financial burden on the mining industry. This, in turn, would have substantial social costs and negative economic effects on the province.

The province's working objective, therefore, is to obtain reasonable assurance that, in consideration of all foreseeable circumstances, it will not have to contribute to reclamation costs. By putting appropriate policies in place to ensure the amount of reclamation security is carefully determined and monitored, and providing incentives for companies to complete their work, the amount of risk to the government can be minimized and controlled.
Reclamation Risk

British Columbia has been extremely fortunate in not having had to absorb major reclamation costs to date. Over the past 20 years, government reclamation expenditures due to company defaults have been limited to the Union Mine, where approximately $1 million was spent on cyanide treatment and reclamation. However, in spite of its success, the province also has a legacy of historic mining sites where disturbance and liability existed before reclamation legislation was enacted in 1969, and for which it is therefore difficult to assign reclamation responsibility. The government is currently contributing to the clean-up of abandoned properties, such as ARD control at Mount Washington on Vancouver Island, which closed in 1967.

More unsettling, in 1992, two major mine companies in the province, Cassiar Asbestos Corporation and Westar Mining Limited, entered bankruptcy with large unsecured reclamation liabilities. The mines were subsequently sold and the new owners agreed to address the province’s reclamation concerns. It is a strong point of consideration that each of these situations had a favourable outcome; that there was significant value in these properties which resulted directly in their marketability, and ultimately in their sale and transfer of reclamation responsibility to new owners. However, had either situation not had a satisfactory outcome, the potential liability to the province could have been as high as $30 million. This illustrates the vulnerability of public funds should a company become insolvent and unable to meet its reclamation responsibilities.

The potential for an unforeseen event of significant environmental and financial proportions is a reality of the mining industry. At the same time, it is felt that with present regulatory safeguards and appropriate engineering technology, the risk of a catastrophic occurrence in British Columbia is low.
British Columbia's Positive Mine Reclamation Record

British Columbia has actively pursued mine reclamation for over 25 years. The province's mining industry is recognized worldwide for its achievements in land restoration and environmental protection. In recent years, the B.C. government along with the mining industry and several B.C. consulting firms has developed international expertise in the prediction, prevention and control of acid rock drainage.

There are many success stories. East Kootenay coal producers have had very favourable results reclaiming disturbed land to elk range and rehabilitating lakes and streams to fish habitat. Several major metal mines, including Highland Valley Copper, Brenda, Similco and Craigmont, have restored grazing land on waste rock dumps and tailings ponds, much of which is now used by local ranchers.

Often, solutions have been achieved through working in cooperation with government agencies, the public and academic/research organizations. Public liaison committees have contributed extensively to resolving complex closure issues at the Equity Silver, Brenda and Sullivan mines. Equity, now part of the Placer Dome Group, operated as an open-pit silver mine near Houston, B.C. for fourteen years prior to its closure in 1994. The mine commenced operations in 1981 when silver prices were high. Basic test work had predicted the potential for ARD, but Equity's cool northern location was expected to keep the problem to a minimum. Soon after start-up, however, it became clear that the acid water problem would be greater than originally anticipated. Further complicating matters, waste rock from excavation work had been spread around the site for various uses including road construction.
To help manage the problem, a Public Surveillance Committee was formed in 1983, which brought together representatives from local communities, provincial government ministry personnel, Environment Canada and Equity management and staff. This public process was successful and resulted in one of the most sophisticated mine reclamation efforts in the industry to date. An amended reclamation permit issued by the provincial government in 1991 requires Equity to cover all costs associated with acid drainage as long as the problem exists. Equity has posted $34 million in security based on the projected long-term costs for reclamation. While some unresolved questions remain regarding ARD prediction and reclamation objectives, the process used at the Equity Silver Mine now serves as a positive case study for other mining companies dealing with serious environmental problems.

*Security Currently Held by the Province*

The amount of funds that should be set aside for mine reclamation is a pivotal issue in developing effective reclamation security policy. Prior to amendments to the *Mines Act* in 1990, there was a maximum statutory limit for reclamation security of $2,500 per hectare. Today, no limit exists. Over the past several years, reclamation security levels have been increased on many properties as permits have been revised or renewed. This reflects government’s efforts to reduce the possibility that public funds might be required to reclaim a mine site in the event of a default, through more accurately balancing the amount of security on deposit with the outstanding reclamation obligations at each mining property.

Since 1985, when a total of $10 million was held on deposit, the amount of reclamation security held by the province has increased substantially: currently, a total of $137 million is on deposit.
However, the government’s estimate of the total reclamation obligation has the potential to exceed $350 million, depending upon the magnitude of ARD at a number of B.C. mines (please see attached chart). The method of estimating the total reclamation liability has been examined at length by the task force as it impacts heavily on the determination of how much security is required. This issue is addressed in detail in the second part of the report, however, the following background information is useful.

Mining companies prepare detailed cost estimates as part of the reclamation planning and permitting process. Having industry estimate reclamation costs is an efficient approach, since industry has the responsibility for mine reclamation and is most familiar with its reclamation plans, mine operating conditions and opportunities for cost savings.

The ministry does perform cost estimation on a selective basis: when industry estimates are disputed; when costs are technically difficult to predict; or when periodic audits of industry estimates are being conducted. The government’s total estimated reclamation liability, however, has traditionally been based on government estimates. This is because the government has viewed the total cost of reclamation as its potential liability — that is, if the industry were to default, the costs to complete the work would have to be borne by government. These are naturally significantly higher than costs incurred by the industry to perform the same work, as mining companies are equipped to conduct physical site operations, while the government would have to contract out much of the work.

Despite the amount of security currently on deposit in B.C., the following chart clearly illustrates a significant potential unfunded reclamation liability to the province. It is this potential unfunded
liability which government is addressing in establishing new reclamation security policies and practices. The use of industry cost estimates would have the effect of reducing this figure to a certain extent.

While most major mines still in operation in the province do not have the financial security on deposit to fully cover their outstanding reclamation work, the majority of these mines are perceived to be at low risk for default, in that they are progressing with their reclamation work in accordance with requirements, have good track records for reclamation, and are viewed as financially sound and responsible companies.

Further, although key stakeholders agree that the province’s present level of potential unfunded liability is not acceptable, it is important to bear in mind the progressive way in which reclamation security has been handled in British Columbia as opposed to other jurisdictions. By comparison, Ontario, whose mining industry is many times the size of B.C.’s, did not enact mine reclamation security legislation until 1991, and currently has only a modest component of total expected financial assurance on deposit from the Ontario mining industry. As a way of addressing this issue, the Ontario government passed Bill 26 in early 1996 which expanded the types of security instruments acceptable to the Crown.

**Acceptable Security**

At present, the forms of reclamation security accepted by the ministry are primarily cash, irrevocable letters of credit, and Canadian government bonds with up to three-year terms. Additionally, mine reclamation trust funds, administered by the Ministry of Finance and
NOTE: These figures are based on government estimates. If the task force's recommendations regarding the use of industry cost estimates are adopted, the total outstanding reclamation liability may be significantly reduced.
## Comparison of Unfunded Liability

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Corporate Relations, have been allowed by the province since August 1994. Mine reclamation funds are designed to enable companies to set aside funds for reclamation and, in particular, to improve tax equity for single-mine companies. The federal Income Tax Act specifies that contributions to a mine reclamation fund are tax-deductible, however, income earned in the fund as well as monies withdrawn are taxable. While the industry supports the concept of mine reclamation funds, it maintains that income in such funds must be sheltered if they are to become a practical security instrument. With current tax implications posing a deterrent, this vehicle has been used by only three companies in the province.

Other than mine reclamation funds, the forms of reclamation security presently accepted are approved under the Bonding Act, which identifies financial instruments that are generally acceptable to the province. However, the Ministry of Employment and Investment is not legally constrained by the Bonding Act, as the Mines Act gives the Chief Inspector of Mines ultimate discretion over which forms of security may be accepted.

Bonding Act-approved financial instruments are considered “hard” security in that they are reasonably liquid (convertible to cash) and certain in their value. These forms of security provide assurance that funds will be readily available, and in the full amount needed, when reclamation work must be done. Thus, they limit the province’s financial exposure in the event that mining companies default on their obligations. At the same time, restriction to only Bonding Act-approved security instruments can be onerous for industry. Cash and letters of credit tie up a company’s working capital and may significantly impact on project economics. The need to post significant hard security can pose a problem during mine start-up, when companies often have
limited working capital. Therefore, it is desirable to expand the range of instruments acceptable for mine reclamation security.

While the ministry has rarely accepted any security other than Bonding Act-approved instruments to date, broader alternatives have been reviewed recently in cooperation with industry. In particular, parent company guarantees and pledges of assets, which are accepted as corporate security by financial institutions, have been considered. These instruments are sometimes referred to as "softer" security because they are less liquid and certain in their value than cash or letters of credit. As well, acceptance of these types of security would involve increased financial risk assessment on the part of government. They are preferred by the mining industry as they carry a lower cost.

The task force and previous reclamation security policy committee have each given extensive consideration to this complex subject. Further discussion of various forms of security accompanies the task force's recommendations.

**Timing of Security**

As yet, the government has not established a policy regarding the timing of security for reclamation. Two approaches are possible:

1) Full security at all times: companies would be required to post security equal to 100% of the outstanding reclamation liability at any given point in time, that is, if the mine were to close in the immediate future. (This approach was endorsed for new mines by the WMI Finance and Taxation Group.)
2) Gradual movement to full security: companies would be expected to move to full security over the operating life of the mine.

These two approaches represent different degrees of risk-sharing between government and industry. They have been carefully considered by the task force and are discussed further in its recommendations.

*Policy Objectives and Criteria*

The government's objectives with respect to mine reclamation policy reflect its broader priorities in environmental protection, sustainability, economic development and land-use planning. Policy development in reclamation requires that the costs and benefits to society, including environmental impacts, competing land use values, and the jobs and tax revenues that result from healthy mining industry, are very carefully weighed.

In determining reclamation standards and security requirements, the government has three primary objectives:

- **Mine Site Reclamation**

  To ensure a sustainable mining industry in B.C., companies must manage their mine sites in an environmentally sound manner and fully reclaim them after mining ceases. The *Health, Safety and Reclamation Code* requires that land and watercourses be reclaimed to at least the same level of productivity that existed prior to mining. In addition, public health and safety must be protected, and any potential discharges which could harm the receiving environment must be controlled and managed. Mine reclamation should be responsive to natural processes on a site-by-site basis.
• **Efficiency and Cost-effectiveness**

Reclamation costs and security requirements can be major expenditures for many mines, and can directly affect their economic viability. In the course of negotiating reclamation plans and mining permits, mining companies seek the most cost-effective way to satisfy mine-specific reclamation requirements. The government’s goal is to meet its reclamation objectives with the least financial burden to industry and the minimal administrative cost to the province.

• **Risk Management**

The government seeks “reasonable assurance” that companies will be able to fully reclaim their mine sites at no cost to the Provincial Treasury. Reclamation policy must be designed to limit the exposure of public funds. Through a combination of regulatory requirements, financial security and incentives to mining companies, the province seeks to minimize the risk that any residual cost will be borne by the tax-paying public.

In addition to these goals, the government has several key criteria for developing mine reclamation policy:

• **Flexibility** — Reclamation policies should be based on a flexible approach, allowing requirements to be met in ways that suit the unique and site-specific features of B.C. mines through setting overall reclamation objectives.

• **Transparency** — Reclamation requirements should be as clear and predictable as possible, to minimize uncertainty for industry, government and the general public.

• **Integrity** — In keeping with the principles and goals of sustainability, reclamation requirements must reflect society’s long-range expectations concerning the environment, land use and public health and safety.
• **Fairness** — Reclamation policies should be sensitive to their impacts on the mining industry in terms of the financial burden on companies, individual project economics, overall industry competitiveness, and consistency in the treatment of mines.

• **Incentive** — Mining companies should be given the right incentives to remain committed to cost-effective reclamation throughout the mine’s life and after closure.

• **Administrative Ease** — Reclamation policies should incorporate efficient administrative procedures, which minimize the financial costs and resources for both government and industry.

• **Public Acceptability** — The processes for setting province-wide reclamation requirements, and for planning and implementing programs at individual mine sites, must be transparent and accessible to the public, and must lead to reclamation requirements that have public support.

• **Accountability** — Reclamation performance in B.C. must be monitored and reported on a regular basis, and in a manner which allows both the public and industry to assess the effectiveness of the province’s requirements.

**Policies for the Future**

While it is at the forefront in implementing mine reclamation initiatives, British Columbia’s record in reclaiming mine sites has not been without problems, and there remain some important areas in which policy can be improved. The key factors motivating the province’s present efforts to implement reclamation security policy changes can be summarized as follows:

• there have been two instances of insolvent mining companies within the last few years, which have highlighted the province’s vulnerability;
• a number of major mines in B.C. are expected to close in the next five to ten years necessitating considerable reclamation, many of which will experience ARD;

• the volatility of metal prices poses an ongoing concern to all associated with the mining industry, and increased financial pressure could put operations and reclamation plans at risk;

• with increasing constraints on funding, government cannot afford to cover the costs of significant remediation, while environmental standards will not allow for anything less than the proper clean-up of sites;

• the amount of reclamation security on deposit and the total reclamation liability represent substantial funds; therefore, it is an important objective that all aspects of estimating and determining security be carefully established, clearly set out and consistently applied.

In making its policy recommendations, the Mine Reclamation Security Policy Task Force has strived to formalize what government has been doing well, and provide solutions in those areas in which improvements are needed. The task force’s recommendations follow.
POLICY RECOMMENDATIONS OF THE
MINE RECLAMATION SECURITY POLICY TASK FORCE

Introduction

The Mine Reclamation Security Policy Task Force was convened in February 1995 by the Minister of Energy, Mines and Petroleum Resources' Advisory Council on Mining. The task force was asked to deal with three broad reclamation security issues: the types of security government can accept; the amount of security required, which involves the estimating and reporting of reclamation costs and risk assessment; and the timing of when security deposits are required. The task force was asked to make recommendations for reclamation security policies and procedures that will minimize the risk to government for the cost of reclamation, while meeting the needs of new, existing, and decommissioned mines.

As part of the ministry's goal to solicit the input of all stakeholders in developing policies for mine reclamation security in British Columbia, the task force was made up of a diverse group of representatives from government, the mining industry and environmental organizations as follows:

Gordon Pearson, Special Advisor, Mineral Resources Division, Ministry of Employment and Investment — Task Force Chair
Dr. John Errington, Manager, Mine Review and Permitting Branch, Ministry of Employment and Investment
Duane Anderson, Senior Economist, Resource Policy Branch, Ministry of Employment and Investment
Geraldine Robertson, Senior Coordinator, Environmental Assessment Branch, Ministry of Environment, Lands and Parks
Lynn Hannah, Tax Policy Analyst, Tax Policy Branch, Ministry of Finance and Corporate Relations
Lorne Grasley, Director of Policy Research and Finance, Mining Association of British Columbia
Richard Mundie, Vice-President and Assistant to the President, Teck Corporation; Chair, Reclamation Security Working Group, Mining Association of British Columbia
Bruce Nicol, Controller, Placer Dome Canada Limited
Bob Patterson, Technical Services Superintendent, Gibraltar Mines Limited
Alan Young, Executive Director, Environmental Mining Council of British Columbia
Barbara Campbell, Principal, Ecoplus Consulting Services
Linda Nowlan, Barrister & Solicitor, Westcoast Environmental Law Society
Nita Joy, Mills & Joy Marketing Communications, Communications Consultant and Task Force Writer

Additionally, the following individuals participated in specific sessions:

Bruce McRae, Assistant Deputy Minister, Policy Division, Ministry of Employment and Investment
Murray Galbraith, Senior Reclamation Engineer, Mine Review and Permitting Branch, Ministry of Employment and Investment
Victor Koyanagi, Reclamation Geologist, Mine Review and Permitting Branch, Ministry of Employment and Investment
Gordon Farquhar, Manager, Financial Policy and Special Projects Section, Financial Services Branch, Ministry of Environment, Lands and Parks
Bob Hart, Project Review Manager, Environmental Assessment Branch, Ministry of Environment, Lands and Parks
Laura Hughes, Manager, Insurance Operations, Risk Management Branch, Ministry of Finance and Corporate Relations
Glen Frederick, Manager, Risk Management Operations, Risk Management Branch Ministry of Finance and Corporate Relations
Michael Bradley, Administration & Trust Policy Analyst, Banking/Cash Management Branch, Ministry of Finance and Corporate Relations
The task force met for six full-day sessions from March through July 1995. The group decided on a process through which it would examine and discuss all of the issues prior to putting forward any recommendations. The first five sessions systematically addressed all of the issues outlined in the ministry’s February 1995 Discussion Paper, with broader subjects broken down into specific issues as follows:

Mine Reclamation Cost Estimating

- Determination of the Total Estimated Reclamation Liability
- Ministry’s Generic Spreadsheet Approach
- Reporting Requirements
  - Standardization of Reporting
  - Broad vs. Detailed Requirements
- Estimating Long-Term Acid Rock Drainage Costs
- Resolution of Cost Estimating Differences between Government and Industry

Assessing and Identifying Mine Risks

- Definition of Risk
- Types of Risk
• Financial Impact of Risk on Government and Industry
• Risk Sharing between Government and Industry
• Setting Standards for Risk Assessment
• Development of Risk Assessment Criteria
• Use of a Risk Premium Factor
• “Reasonable Assurance”
• Timing and Ongoing Risk Assessment

Types of Security
• Government’s General Management Operation Policy (GMOP)
  - Types of Security Currently Acceptable - cash; irrevocable letters of credit; bank drafts; money orders; short term deposits; registered bonds; treasury bill notes
  - Appropriateness of Surety Bonds
• Other Types of Security
  - Mine Reclamation Trust Funds
  - Captive Insurance Vehicles
  - Pledge of Assets
  - Parent Company Guarantees
• Taxation Issues

Hard vs. Soft Security
• Definition of Terms
• When is Soft Security Appropriate
• Criteria for Accepting Soft Security
• Legal Forms of Soft Security
• Timing of Hard Security Requirements
• Full vs. Partial Security
• Amount and Types of Security Held on Deposit by Major Mines in British Columbia

"Moving Goal Posts" — Changing Reclamation Regulations and Requirements
• Exit Tickets and the Issue of Changing Environmental Standards

Transitional Issues and Provisions in Implementing New Policy

Each of these issues was examined in as much depth as possible. Where appropriate, specialist consultants in key areas provided additional expertise. Following the fifth meeting, the Chair, in consultation with the Ministry of Employment and Investment, summarized the issues requiring recommendations for policy or procedural changes and distributed them to all task force members. Over the next month, each representative group — government ministries, industry, and environmental representatives — reviewed the issues and submitted in writing its preliminary recommendations, which were circulated to the other members of the task force. After all participants had had sufficient time to consider the others’ written comments, the group met on July 13, 1995 for a summary meeting with the objective of reaching a level of consensus on each issue.

The summary meeting was characterized by a spirit of cooperation; all participants came to the table willing to work at resolving the barriers to consensus on certain critical issues. As a result, the process was successful — agreement was reached among key stakeholders on virtually all issues. Accordingly, the recommendations that follow represent very major steps forward, toward a proactive system of managing mine reclamation in the best interests of government, industry and the public.
Based on its discussions, the task force is able to put forward eighteen key policy recommendations. These are categorized under the general reclamation security issue areas of: Reclamation Cost Estimating; Risk Management; Types of Security; Timing of Security; Full Security; Exit Tickets; and Public Involvement and Disclosure; and are prefaced by a General Policy Statement. The format used to present the recommendations accommodates the task force's desire to provide relevant background information, the rationale for, and qualifications to each individual recommendation, particularly in the case of the more complex and difficult issues. It also reflects the group's decision early on in the process to address transitional considerations on an issue-by-issue basis.
GENERAL POLICY STATEMENT

Background

An outcome of the task force's work was the evolution of a general policy statement, representing the principles ultimately subscribed to by all stakeholders in addressing the issues of mine reclamation security. The development of the general policy statement was a task force initiative rather than a mandate, and is intended to reflect a fundamental philosophy and commitment to sound governance of mine reclamation security. This statement embodies many of the key concepts the task force discussed, including the objective of reasonable assurance, the formalized process of risk management, and recognition of the need to take a site and company specific approach to reclamation security.

Policy Statement

The Province will regulate mine reclamation security in British Columbia to provide reasonable assurance that government funds will not be used to cover reclamation costs. This will be accomplished through a combination of risk management and the posting of security in accordance with a formalized risk assessment process. The Province recognizes that each mine is unique. Accordingly, the Ministry of Employment and Investment will implement its mine reclamation security policies with consideration given to the specific site and company involved.
MINE RECLAMATION COST ESTIMATING

- STANDARDIZED SPREADSHEET REPORTING
- POST-CLOSURE STANDARDS
- DETERMINATION OF THE TOTAL RECLAMATION LIABILITY
- DETERMINING LONG-TERM ACID ROCK DRAINAGE COSTS
- SELECTING AN APPROPRIATE DISCOUNT RATE FOR CALCULATING LONG-TERM RECLAMATION LIABILITY
MINE RECLAMATION COST ESTIMATING

Issue

Adoption of standardized spreadsheet reporting to achieve consistency in reclamation cost estimating.

Background

From 1969 through 1989 a reclamation bonding limit was set, initially at $1,000 per hectare which was subsequently increased to $2,500 per hectare. By the late 1980s, it had become clear that reclamation costs could be much larger — up to $40,000 per hectare depending on the specific mine, land and resources. In 1990, a revision to the Mines Act eliminated the $2,500 bonding limit, and formally incorporated cost estimating of reclamation liability as part of the mine permitting process.

From 1991 to 1993, cost estimating formats tailored to British Columbia’s mining industry were reviewed and developed by government in cooperation with several mine companies. In 1994, the then Ministry of Energy, Mines and Petroleum Resources, in conjunction with industry, developed a mine reclamation costing spreadsheet for the purpose of standardizing cost estimates. While every mine site in the province has unique site characteristics, environmental resources and sensitivities that influence the approach to reclamation and resulting costs, mines which share common types of mining activity often encounter common reclamation cost patterns. The
reclamation costing spreadsheet was designed to capture these commonalities, standardize and categorize typical reclamation work, and improve access to the extensive cost records the province has built up over time. This is accomplished by: 1) providing common categories of reclamation to minimize problems caused by differences in terminology, 2) separating costs that relate directly to area disturbance for ease of calculation, and 3) better documenting the stream of costs that may extend beyond mine closure, such as acid mine drainage.

The reclamation costing spreadsheet format was finalized in 1995 and is now routinely forwarded to mines applying for permits, renewals, and closure approvals. Larger mines that have developed their own costing systems are able to submit the information in their existing formats.

Discussion Process

The ministry’s reclamation costing spreadsheet was developed in cooperation with the mining industry and has been well received. The spreadsheet method of costing is intended to suit the needs of both small and major mining operations. However, representatives of major mines on the task force stated that large mines require a customized approach to costing due to their size and individuality. Therefore, the industry’s preference is that government standardize the assumptions and categories used in the spreadsheet cost estimating, and allow major mining companies the flexibility of incorporating these standards into their own costing format. The industry also expressed concern regarding the amount of confidential corporate information that would be collected and available to the public through the Freedom of Information and Protection of Privacy Act if standardized spreadsheet reporting were adopted universally. (Section 21 of the Act contains exemptions to the disclosure of confidential business information.)
At the summary meeting it was agreed that, while the spreadsheet is preferable to the ministry, alternative costing models would be accepted as long as the information was consistent with the spreadsheet methodology. It was further recommended that a standardized methodology for estimating ARD costs be developed as a result of a review of ARD mines in the province that is currently underway.

The environmental representatives on the task force requested that information regarding the status of reclamation work at individual mines should be readily accessible to the public. To protect companies' confidentiality requirements, they suggested that a summary or subset of the spreadsheet information become part of the ministry's annual reporting, to which the ministry agreed (discussed later in the report under "Public Involvement and Disclosure").

Policy Recommendations

The Task Force recommends the use of the Ministry’s reclamation cost estimating spreadsheet model by mine companies to ensure that estimating data are consistent and reflect all major cost centres. However, other models will be accepted if all of the estimating criteria contained in the government spreadsheet are met.

The Task Force also recommends the adoption of a standardized framework for estimating acid rock drainage (ARD) costs, which will be developed as a result of the Ministry of Employment and Investment’s review of individual ARD mines in British Columbia.

Transitional Provisions

Cost estimates, based on the reclamation costing spreadsheet criteria, will be required for all new mine applications, amendments, or closures. Existing mines will be given an appropriate amount of time to adapt their cost estimates to government criteria. The review of costs at ARD mines in the province will occur over the next two years.
Issue

Post-closure reclamation standards.

Background

Clear reclamation objectives and standards are prerequisites for determining reclamation liability. The Ministry of Energy, Mine and Petroleum Resources is committed to providing more precise requirements for certain aspects of mine reclamation that are too broad in nature in the present regulations, resulting in uncertainty for both government and industry. Therefore, the ministry is developing site-specific post-closure standards with respect to land use, productivity, resloping of waste dumps, and a detailed manual on soil survey and soil salvage. These will provide more explicit technical requirements and objectives as to the condition to which specific sites must be restored upon completion of reclamation work.

Discussion Process

The subject of developing post-closure standards for mine reclamation evolved during the task force's discussions on cost estimating. In particular, the issue of post-closure standards has significant impact on the determination of the "total estimated liability," which by its definition encompasses future reclamation work associated with each mine. Therefore, the development of more precise reclamation prescriptions in certain areas that are vague in the existing regulations
was supported by the task force members. Site-specific post-closure standards will provide all stakeholders with more accurate and clearly defined objectives in estimating reclamation work, and in assessing reclamation performance and risk.

Policy Recommendation

The Task Force recommends that the Ministry of Employment and Investment proceed to develop and adopt site-specific post-closure standards with respect to land-use, productivity, soil survey and resloping where required. The objective of such specific standards is to more accurately identify and estimate reclamation costs.
**MINE RECLAMATION COST ESTIMATING**

**Issue**

Determination of the "total estimated reclamation liability."

**Background**

The "total estimated reclamation liability" is the total cost of projected reclamation work at any given point in a mine's life. Mining activity and reclamation progress constantly change this liability over the life of a mine. In the larger picture, the total estimated liability refers to the total reclamation work outstanding at any given time for all mines in the province combined.

Historically, government has viewed the total estimated liability as the cost to the province should a mine or company default. Therefore, it has based this figure on its own cost estimates, which are often higher than those used by industry, as government cannot absorb the overhead costs and would use contractors to perform reclamation work. This has been a subject of much concern, as the industry believes it is more realistic and relevant to employ a "going concern" method of cost estimating based on the use of its own personnel and equipment, which would then be the basis for determining liability and security requirements.

**Discussion Process**

The issue of which estimates should be used for assessing security posed difficulties for the task force, as government and industry each felt strongly about their respective approaches. As the
discussions continued it became evident that progress on other issues was contingent upon this being resolved. Through the preliminary recommendation process and the summary meeting, constructive solutions evolved. With certain qualifications, the group was able to reach consensus on determination of the total estimated liability. This was one of the most significant achievements of the task force and facilitated decisions on a number of other important security matters.

The committee ultimately agreed that both estimates are of value depending on the specific situation: industry's cost estimates are more useful in cases of strong companies determined to be at a low risk; and government cost estimates are important in cases in which where there is a high probability of default — that is, a company may not be in a financial position to meet its reclamation obligations. Additionally, there was general agreement that a "risk premium," or additional amount of security over the estimate, may be required as contingency funding in the latter cases, and that the total estimated liability and security requirements would in all cases be determined by a formal risk assessment process.

This solution reflects the consensus among the group that security decisions must be site- and company-specific, and the concept that government risk must be determined on an individualized basis using a consistent risk assessment methodology (addressed in the recommendations pertaining to risk management). It also preserves the ministry's ability to request a risk premium from companies in cases where a high risk to government is identified. Prior to this clear definition and application of the risk premium, it was used by government in a broad and less-defined context, causing concern on the part of industry about its interpretation and potential arbitrary application.
Policy Recommendation

The Task Force recommends that the Ministry of Employment and Investment should recognize two different approaches to cost estimating reclamation liability: one based on government costing, and the other based on industry costing. The Ministry agrees that industry estimates of liability should be accepted except in cases in which a high risk of default is identified based on a formal risk assessment. In such cases, the Ministry will place greater reliance upon government estimates of reclamation liability for determining levels of security. In addition, where cost predictions are highly uncertain, the Chief Inspector of Mines may assess a risk premium as a contingency factor to provide for unexpected reclamation expenses.

Transitional Provisions

Over time, the Ministry will develop a database of information, based on data gathered through industry use of its reclamation costing spreadsheet criteria, that can be used to evaluate and standardize company estimates of reclamation liability.
Issue

Determining long-term acid rock drainage costs.

Background

As discussed earlier in this report, mines with acid rock drainage (ARD) can require treatment for many years after closure, which can be very difficult to predict and therefore to estimate. This is a relatively new issue for the province and one of some urgency, as several ARD-generating mines in British Columbia are expected to close within the next five to ten years, leaving substantial environmental issues to be managed.

As previously discussed, a great deal was learned from the process used at Equity Silver Mines in 1991 where numerous independent estimates had been done of the mine’s projected reclamation requirements by the company, the then Ministry of Energy, Mines and Petroleum Resources and the Ministry of Environment, Lands and Parks. However, these estimates varied widely and the government and Equity remained unable to reach an agreement. Because the mine was nearing closure, the parties agreed to bring in an independent facilitator to assist them in resolving the issues. The process took two months, involved representatives from the company, the Ministry of Energy, Mines and Petroleum Resources and the Ministry of Environment, Lands and Parks, and agreement was reached on an estimate of liability. This was the first process of its kind in the
province which dealt with long-term ARD reclamation cost estimating and security. It is expected that facilitation of this kind will be necessary in only a very few instances. To date, this has been done on a cost-shared basis.

Discussion Process

All participants in the task force recognized the importance of the Equity process. In its preliminary recommendation prior to the summary meeting, the ministry proposed that a process such as that employed at Equity become a formalized approach to be used in negotiating ARD reclamation security requirements at other mines in the province. This recommendation was discussed at length by the task force members, modified slightly, and agreed to.

A key element in the process of dealing with Equity’s ARD issues over the years since the problem was initially identified in the early 1980s was the involvement of the public through a Surveillance Committee which continues to be active. Representatives of environmental organizations on the task force reiterated the need for public involvement to be recognized and designated at specific stages in the reclamation planning and negotiating process. These concerns are addressed later in this report under “Public Involvement and Disclosure.”

Policy Recommendation

The Task Force recommends the adoption of a formalized process to be followed in determining long-term acid rock drainage liability, as well as the development of a timetable for implementation. The first phase of the process involves discussions between the company, the government and the public. While it is most desirable that consensus be reached at this level, if necessary, the next phase would entail the addition of an independent facilitator/mediator to the process.
It is recommended that the mediation process, if required, should be pursued on a cost-sharing basis between Ministry of Employment and Investment and the individual company involved.

If these processes should fail, a decision will be rendered by the Chief Inspector of Mines in consultation with Ministry of Environment, Lands and Parks, under the authority of the *Mines Act.*
MINE RECLAMATION COST ESTIMATING

Issue

Selecting an appropriate discount rate for calculating long-term reclamation liability.

Background

The use of a discount rate for determining the present value of long-term reclamation programs is relatively new. It pertains to mines that will require reclamation work long after the mine closes, usually those with ARD, and is an important component in establishing a fund for long-term post-closure reclamation. Therefore, certain assumptions regarding the time value of money must be incorporated into calculating long-term liability. This issue is of particular importance in the case of single mine companies where the government’s recourse is limited after closure.

As an example, in 1991, the discount rate for Equity was set at 3% based on the historical real rate of return (the realized nominal rate of return less the realized inflation rate as measured by the change in the Consumer Price Index). Historically, risk-free real rates of return have ranged from 2.5% to 4%.

The government’s challenge is to select a rate which is fair to industry and also ensures that sufficient funds will be available to cover all future reclamation requirements. The government is sensitive to the effect of the discount rate on the valuation of long-term reclamation liabilities. Rates
that are too low may unnecessarily tie up scarce operating capital, while rates that are too high may pose excessive risk to the province.

**Discussion Process**

It was the task force’s responsibility to review the issue of the discount rate to be used in assessing the present value of long-term reclamation cost estimates. The industry stated that it would like to see a fixed discount rate set based on historical average rates of return for a mutually agreed upon representative financial instrument. It was agreed by all that the rate should be based on a longer term average to avoid significant fluctuations. It was also agreed that the rate should be determined and negotiated on a mine-by-mine basis and reflect certain parameters such as frequency of review, uncertainty of cost estimates, and observed market returns on appropriate financial instruments.

**Policy Recommendation**

It is recommended that the selection of a discount rate should be part of the process of negotiating long-term reclamation security with mine companies on an individualized basis. Once the Ministry of Employment and Investment has completed this process with a small number of mines, parameters will be established for determining and adjusting the discount rate, which will provide a framework for future negotiations.
RISK MANAGEMENT

• FORMALIZATION OF RISK ASSESSMENT PROCEDURES

• RISK MONITORING AND ONGOING EVALUATION
RISK MANAGEMENT

Issue

The adoption of formalized risk assessment procedures.

Background

Since 1990, when the $2,500 reclamation bonding limit was removed, the Ministry of Energy, Mines and Petroleum Resources has determined the level of security required from each mine on a site-specific basis, considering:

- the projected reclamation requirements: ARD or conventional; technical requirements and costing
- details of the company’s financial history and strength; diversification; liabilities
- the mine’s performance
- the company’s reclamation track record

While these basic criteria have been evaluated, the process has been an informal one. This has resulted in some inconsistencies in the levels of security posted by various companies as, without a formalized rationale and with disparities in cost estimating approaches, the end result has ultimately been determined through one-on-one negotiations.

Consequently, the task force recognized a need to review and formalize the risk assessment process currently being used to ensure all mines are treated consistently according to pre-set
criteria, and establish detailed records which clearly document the rationale for security
requirements.

*Discussion Process*

The task force discussed risk assessment and risk management at length. Ministry of Employment
and Investment personnel stated the need to develop a formalized risk assessment procedure and
criteria for dictating acceptable levels of security. Industry representatives stressed the need to take
a site- and company-specific approach, as well as for ongoing risk monitoring.

An initial list of risk assessment criteria categories was developed by the group, including:

a) Company’s financial viability
b) Residual property value
c) Commodity value
d) Company history and performance of ongoing reclamation
e) Possibility of acid rock drainage potential
f) Environmental standards allowed under the permit
g) Environmental sensitivity of the operating area
h) Company reclamation plan
i) Public concerns

To follow up, a slide presentation was prepared by one of the committee members, a senior mine
economist from the ministry, showing how these criteria might be incorporated into a risk
assessment framework.

After considerable discussion, the task force agreed that further development and refinement of a
formal risk assessment procedure should be pursued by a joint government/industry/environment
committee in consultation with risk management specialists. Industry representatives stated that mine companies should remain able to negotiate with the ministry subsequent to the results of a formal risk assessment. The ministry agreed that there would be time for a company to respond.

Policy Recommendation

The Task Force recommends that a sub-committee, made up of appropriate representatives from government, industry and environmental organizations, with the assistance of a risk management consultant, be formed to develop a mutually acceptable risk assessment methodology and risk management procedures. As a starting point, it is recommended that the Ministry of Employment and Investment, in consultation with the Ministry of Environment, Lands and Parks and the Ministry of Finance and Corporate Relations' risk management department, prepare a discussion paper outlining a proposed risk assessment framework for the review and comment of the sub-committee.
RISK MANAGEMENT

Issue

Risk monitoring and ongoing evaluation.

Background

At present, the Ministry of Employment and Investment performs regular reviews of mine reclamation plans and security. Reclamation programs are revised every three to five years. In general, the risk factors for mines and companies are monitored on an informal basis. However, in formalizing the risk assessment criteria and procedures used by the ministry, the monitoring and review of both mine and corporate risk factors should also be formalized.

Discussion Process

Early on in the task force's discussions, industry representatives stated the need for increased government monitoring as part of a more structured approach to managing reclamation risk. In formalizing its risk assessment procedures, ministry representatives recognize the need for standardized and timely reviews. Rather than establishing firm timelines for conducting such reviews, the task force decided that the frequency of monitoring should be determined by the risk assessment process, that is, the higher the risk, the more frequent the monitoring requirements.
Policy Recommendation

The Task Force recommends the adoption of formalized monitoring and evaluation of mine and corporate performance in accordance with the formalized risk assessment criteria. The frequency of such monitoring of both site and corporate risk factors will reflect the level of risk and security in place on an individual mine basis.
TYPES OF SECURITY

- BROADENING OF ACCEPTABLE SECURITY INSTRUMENTS
TYPES OF SECURITY

*Issue*

Broadening of acceptable security instruments.

*Background*

The forms of reclamation security presently accepted by the Ministry of Employment and Investment are primarily cash, irrevocable letters of credit, and Canadian government bonds with up to three-year terms. Additionally, mine reclamation trust funds have been allowed by the province since August 1994, however, with the current treatment under the *Income Tax Act* of Canada posing a deterrent, this vehicle has been used by only three mines in British Columbia.

Aside from mine reclamation funds, the forms of mine reclamation security which have been accepted to date by the ministry are approved under the *Bonding Act*, other than in the few cases where conventional security proved impossible to obtain. However, the ministry is not legally constrained by the *Bonding Act*, as the *Mines Act* gives the Chief Inspector of Mines discretion over which forms of security to accept.

The financial instruments currently accepted by the ministry are considered “hard” security in that they are reasonably liquid (convertible to cash) and certain in their value. These types of security limit the province’s financial exposure as they provide assurance that the funds required will be
available when needed. However, a policy of accepting only these forms of security can be onerous for industry. Cash and letters of credit tie up a company’s working capital and may significantly impact on project economics. A requirement to post significant levels of hard security can pose a problem during mine start-up, when companies often have limited working capital.

Therefore, the industry and ministry have been working cooperatively over the past few years to review alternative forms of security, including parent company guarantees and pledges of assets, which carry a lower cost to mine companies and are accepted as corporate security by financial institutions. These instruments, which have been referred to in earlier discussions as “soft” security, are less liquid and certain in their value than “hard” security such as cash and letters of credit. Their acceptance is being considered only in the case of companies posing a low risk to government.

Discussion Process

The concept of expanding the acceptable forms of mine reclamation security was discussed extensively by the task force at several meetings. From the outset, the government’s position has been that it is uncomfortable with the present level of potential unfunded reclamation liability and its objective is to increase the existing security. Early in the discussion process, industry representatives were very concerned about the negative economic impact on individual companies and the industry as a whole if government were to move to a requirement for hard security to cover its estimate of the total reclamation liability. They pointed out that a requirement for substantial hard security can limit a company’s ability to raise funds for projects and restrict its working capital. A further issue for the industry was what it termed “double accounting,” whereby mine companies
must put funds on deposit for reclamation and then spend working capital on reclamation prior to having their deposits released. It was suggested that this would become a significant problem if all companies were to be required to place hard security on deposit to cover their total estimated reclamation liabilities. Representatives of the environmental groups at the table emphasized the need to retain the liquidity and value of assets in order to protect taxpayers from potential liability in the case of a company default. They felt that alternatives should be explored that allow companies to adopt favourable financial strategies while meeting the bottom line of public and environmental protection.

The task force reviewed presently accepted and proposed security instruments as to their practicality:

**Bonding Act Securities**

The standard hard security instruments — cash, irrevocable letters of credit, Canadian government bonds — were straightforward. Other Bonding Act-approved securities were then reviewed. Surety bonds, which are project-specific performance bonds guaranteed under specified conditions by a surety company, were deemed unsuitable for long-term reclamation applications: while they do not directly tie up a company’s credit, they are expensive, contracts must be re-negotiated and the risk re-evaluated each time a change in the reclamation program or plan occurs, and there is a potential for the surety company to withdraw at any time.

**Captive Insurance**

Captive insurance, an industry-wide funding concept, was also explored. It was concluded that this option might be viable for multi-mine companies in which case the underwriter could spread its
risk over a portfolio of properties, but that single-mine companies pose excessive risk exposure for an insurer. Therefore, as an industry-wide initiative, a captive insurance fund would only be possible if it were initiated by a major multi-mine company. Large mining companies are reluctant to assume this responsibility. Further, it was evident that the premiums for a captive insurance fund could be prohibitive. It was also concluded that a domestic captive insurance plan does not presently offer any advantages under Canadian tax laws.

Mine Reclamation Trust Funds

Mine reclamation trust funds, approved by the provincial government in 1994, were reviewed at length by the task force members. As discussed earlier, mine reclamation funds are designed to enable companies to set aside funds for reclamation. Contributions to a mine reclamation fund are tax-deductible under federal tax law, however, income earned in the fund as well as monies withdrawn are taxable. While supporting the concept of the mine reclamation fund, the industry’s position is that if it is to become a practical security instrument, income earned in the fund must be sheltered from tax. Therefore, the mining industry does not presently consider this a viable alternative.

Parent Company Guarantees and Pledges of Assets

The group then seriously considered the concept of expanding the acceptable forms of security to include instruments such as parent guarantees and pledges of assets under certain well-defined circumstances. Parent company guarantees were reviewed for their acceptability in the case of mines owned by financially strong, multi-mine companies with proven track records for completing reclamation work. The implications of accepting pledges of assets, which include a company’s receivables, supplies and fixed assets, were also discussed, though no specific applications or conditions were decided upon.
Finally, the key stakeholders agreed* to the acceptance of an expanded range of security instruments under "specific, well-defined conditions." The resulting recommendation is integrally linked with the concept of a formalized risk assessment process: the committee members firmly qualified their agreement to expand the acceptable forms of security as being dependent upon the employment of a stringent procedure for determining and monitoring risk. It is also important to note that the option of additional security instruments was considered by the task force primarily as a method of securing the outstanding potential liability to the province that is currently unfunded, and not as a means of replacing the hard security presently on deposit.

The group recommended that various alternatives should continue to be reviewed for their feasibility. The environmental representatives stressed that they wanted the concept of a pooled fund to be explored further. Industry participants responded that major mine companies in the province are strongly opposed to pooled funds as the concept may suggest to higher risk single mine companies that if they were to default, more financially robust companies would bear the financial responsibility. An industry "superfund" is used to cover the costs of orphan sites in the U.S., however, major mining companies do carry the financial burden in the case of a default.

Policy Recommendation

The Task Force recommends that acceptance of an expanded range of security instruments for mine reclamation be formalized in the operating policies of the Ministry of Employment and Investment. Newly accepted financial instruments would be additional to and combined with presently accepted hard security instruments, and not intended to replace the latter.
More specifically, the Task Force recommends that in addition to the Bonding Act-approved security instruments currently accepted by the Ministry, the following forms of security be accepted under specific, well-defined conditions in accordance with a formalized risk assessment process:

- Parent corporate company guarantee
- Pledge of assets

and that the viability of the following should be further examined:

- Captive insurance
- Mine reclamation funds with expanded portfolio of investments
- Pooled investment funds managed by the Ministry of Finance and Corporate Relations
- Pooled funds modeled on the superfund approach
- Additional financial instruments

* While the Ministry of Finance and Corporate Relations' representatives were supportive of the process and participated extensively in all of the preceding discussions, they could not agree to adopt all of the task force's recommendations. Specifically, the ministry's task force representative had concerns about expanding the range of acceptable security instruments beyond the scope of the Bonding Act. The ministry's representative supported the concept of developing a formalized risk management procedure but could not endorse it at this time without knowing the criteria or how they would be applied to determine how much security is required, what form, and when.
FULL SECURITY

- DEFINITION AND OBJECTIVE OF
  "FULL SECURITY"
FULL SECURITY

Issue

Definition and objective of “full security.”

Background

In the ministry’s previous discussion paper of February 1995, “full security” was defined as hard security to cover the full amount of the expected costs of outstanding reclamation work as well as a risk premium. The paper went on to explain that, to date, the government has accepted “partial security” or less than full security from companies considered to be a low risk and in other individual situations. These terms and their definitions imply assumptions that are problematic for both government and industry. The concept of partial security means that only a portion of a company’s outstanding reclamation liability is secured. This leaves the balance unfunded and therefore the government’s liability in the case of default. Equating full security to hard security plus a risk premium poses problems for the industry: there is no allowance for the possible acceptance of other forms of security, and the risk premium (as discussed under “determination of the total estimated liability”) exists as an arbitrary and somewhat nebulous concept, the requirement for which is not tied to specified criteria or conditions.
Discussion Process

It became evident as the task force’s discussions progressed, that the above pre-existing terms needed to be clearly defined in light of many concepts being considered by the group. A suggested new definition of full security was offered by the Chair as a starting point for discussion, which explained full security as: coverage of the government's estimated reclamation liability, possibly comprising hard and soft security, as determined by a risk assessment and adjusted over the life of a mine according to a risk management process. This definition caused some problems for the task force members. At that point in the discussion process, the ministry had not yet agreed to recognize industry cost estimates, and the industry would not accept a definition of full security based on government’s estimates of the total reclamation liability. Also, the environmental representatives were, at that stage in the discussions, reluctant to agree to the concept of expanding the range of acceptable security under any circumstances.

Through the preliminary recommendation and summary meeting process, the task force was able to reach consensus on the latter issues, enabling the key stakeholders to agree to a definition of full security that includes a broader range of security instruments. The group concurred that under existing government policies and procedures, it would be virtually impossible to achieve full security during the life of a mine and, therefore, that there would always be an potential unfunded liability to the Crown. The inclusion of a wider range of security instruments increases the possibility that full security will be in place throughout the operational life of a mine.
Policy Recommendation

The Task Force recommends the adoption of a definition of “full security” to include an expanded range of specified security instruments, as deemed appropriate, to cover the total approved reclamation liability. Determination of the level and types of security required from individual mining companies will be based on formalized risk assessment and monitoring procedures and ultimately decided by the Chief Inspector of Mines. Alternatives for obtaining security under a formalized risk assessment process will now include: full hard security; full security comprising a mix of approved financial instruments as appropriate; and the staging of hard security arrangements.
TIMING OF SECURITY

- SECURITY REQUIREMENTS AT CLOSURE

AND STAGED PAYMENTS OF HARD SECURITY
TIMING OF SECURITY

Issue

Security requirements at closure and staged payments of hard security.

Background

As stated earlier in this report, a number of major mines in British Columbia are expected to close in the next five to ten years necessitating considerable reclamation work, and several of these will experience acid rock drainage. One of the critical issues regarding the timing of reclamation security, which must be given detailed consideration in light of the acceptance of a broader range of security instruments, is whether or not 100% hard security should be required at or prior to the point of permanent mine closure, or decommissioning. Consideration of this issue entails weighing several factors that represent varying degrees of risk: mines with ARD as opposed to conventional mines; single mine companies as opposed to multi-mine companies.

Another facet of this issue is how to ensure the required level of hard security is obtained from mines whose risk levels increase as they approach permanent closure. There are a number of major mines in the province with whom substantial long-term reclamation security agreements have been established, including the Gibraltar, Equity and Sullivan mines. In the case of Gibraltar, for example, it was negotiated in 1994 that the company would provide staged payments of hard
security to the government according to an agreed upon payment schedule, in addition to a lump sum deposit in the form of a letter of credit. As part of the plan, these security arrangements will be re-evaluated in 1997. It should be noted that Gibraltar's largest shareholder is Placer Dome Canada Limited, whose presence was a factor to the government in making this arrangement. (Gibraltar is a good example of the risk assessment approach that the Ministry of Employment and Investment is already employing on an informal basis.)

Discussion Process

The discussion of the need for 100% hard security upon closure was extensive. Many hours were spent on this issue, including examining graphs and flow charts depicting the actual timing of reclamation work, outstanding liability and high vs. lower risk points in a mine's life. At the summary meeting, these issues were resolved through the development of three recommendations, which address the various risk scenarios that may exist.

In the case of companies required to place substantial hard security on deposit, the representative of Gibraltar on the task force stressed the need to negotiate a program of staged payments in order that hard security requirements not financially disable a company. The task force agreed to this recommendation.

Policy Recommendations

1. The Task Force recommends that 100% hard security be required at or prior to the point of closure (usually the point at which all milling ceases) for all single mine companies.
2. The Task Force recommends that 100% hard security be required at or prior to the point of closure (usually the point at which all milling ceases) for all mines with ARD.

3. The Task Force recommends that for conventional mines operated by multi-mine companies, hard security requirements at closure be based on the formalized risk assessment process.

In the case of mines requiring 100% hard security, the Task Force recommends that a staged payment plan for building the level of hard security be negotiated based on the Ministry of Employment and Investments' formalized risk assessment policies and procedures.

*Transitional Provisions*

The level and types of security at closure for all currently operating mines should be based on the above policy recommendations wherever possible. However, the Task Force recognizes that this would create financial hardship for single mine companies nearing the end of their mine life. Strict adherence to the above policies may make it uneconomical for some mines to remain open. Therefore, it is recommended that the Ministry of Employment and Investment determine an appropriate level of hard security for currently operating mines based on the formalized risk assessment process, but require that 100% hard security be in place for all mines with ARD.
EXIT TICKETS

- EXIT TICKETS, CERTIFICATES OF COMPLIANCE, AND ENVIRONMENTAL LIABILITY
EXIT TICKETS

Issue

Exit tickets, certificates of compliance, and environmental liability.

Background

The mining industry would like a method established for releasing a company from indefinite liability for a mine site. The concept of the “exit ticket” is that a company would be able to surrender to the province the mineral title and all environmental and other liabilities for a property, once all of the conditions of the permit and reclamation plan have been satisfied. However, the government is not willing to release companies from liability because of its concern that environmental problems may surface many years after closure and it does not want taxpayers held responsible. This is particularly the case when ARD is present and ongoing maintenance of a site may be required long into the future.

The Whitehorse Mining Initiative examined exit tickets and concluded that they should be granted under the following conditions: the mining company has completed all work specified in the reclamation plan; adequate security has been provided to cover expected long-term costs; and a risk-based security fund is in place to provide for unforeseen costs and changing standards. The industry’s response is that full financial assurance to this extent cannot realistically be achieved.
The issue of ongoing liability has two components: liability for future contamination, and liability arising from future changes to environmental standards. While there was no agreement reached among the members of the task force regarding the issue of liability for future contamination, the committee was able to address the issue in part. Other multi-stakeholder working groups such as the Canadian Council of Ministers of the Environment Task Group have agreed on the concept of acknowledging a company's compliance with the standards of the day and releasing it from future liability related to changing environmental standards.

Discussion Process

While there was considerable discussion on the issue of exit tickets, the task force came to an impasse, not only because of opposing views among participants, but also because, as the government representatives stated, it is not technically possible for the government to issue exit tickets under the current provincial legislation, that is, the Waste Management Act and Mines Act.

As an outgrowth of the task force's discussion on exit tickets, the government and environmental representatives did agree that it was important to recognize companies for their compliance with environmental standards. The consensus was that a "Certificate of Compliance" should be issued to companies subsequent to mine closure, which would protect them from future changes to environmental legislation, but would not lessen their liability with respect to any future contamination. There is a provision for certificates of compliance contained in new contaminated sites legislation currently being drafted under the Waste Management Act. The industry agreed that this approach addresses one aspect of the exit ticket issue, however, remains adamant that companies must, upon satisfying their obligations, be fully released from all liability. The
environmental representatives stated their opinion that the mining industry should not be treated differently from other industries with respect to liability for future contamination which may arise from a mine site, even if reclaimed fully to the standards of the day.

Subsequent to the summary meeting, the ministry representatives agreed with industry that it may be beneficial to establish a multi-stakeholder study committee to examine the issue of exit tickets in further depth.

Policy Recommendations

While, under present legislation, no provincial ministry is empowered to issue exit tickets, the Ministry of Employment and Investment and industry representatives on the Task Force recommend that a government/industry/public committee be established to further examine the concept of exit tickets. The Task Force recognizes that opposing views on this subject are deeply held and that it is an issue of extreme importance to both the mining industry and environmental organizations.

The Task Force recommends that mining companies should be issued a “Certificate of Compliance” or equivalent which recognizes that they have complied with the environmental standards of the day, once reclamation work at a mine site has been completed. The certificate of compliance would state that an individual company has complied with the remediation requirements of its mine permit under the Mines Act and the Waste Management Act. This would release companies from liability with respect to future changes in environmental legislation but not future contamination.
PUBLIC INVOLVEMENT AND DISCLOSURE

- ACCESSIBILITY OF MINE RECLAMATION SECURITY INFORMATION
- CORPORATE REPORTING REQUIREMENTS
- PUBLIC INVOLVEMENT IN THE PROCESS OF DETERMINING MINE RECLAMATION SECURITY
PUBLIC INVOLVEMENT AND DISCLOSURE

Issue

Accessibility of mine reclamation security information.

Background

This issue concerns both the accessibility and amount of information that is currently available to the public with respect to mine reclamation security matters. Much of the information regarding mine reclamation for individual mines in British Columbia is accessible to the public. Mine permits are public documents, as are the annual and quarterly reports of public companies. However, companies can require that details of their financial negotiations with the government remain confidential in order to protect their competitive positioning and other sensitive aspects of their business.

In its February 1995 discussion paper on mine reclamation security policy, the Ministry of Employment and Investment stated that its objective is to release statistics on mine reclamation in the province on a more timely and comprehensive basis. That discussion paper, the interim report of the Mine Reclamation Security Policy Committee, the ARD Guidelines, and this report of the Mine Reclamation Security Policy Task Force are all examples of recent efforts to inform as well as solicit input from industry, the public, and other stakeholders.
Discussion Process

The issue of public access to reclamation security information arose during the task force's discussion of the use of standardized spreadsheet criteria to achieve greater detail and consistency in mine reclamation cost estimating. The environmental representatives on the task force commented that information regarding the status of reclamation work at individual mines should be readily accessible to the public. To protect the confidentiality requirements of companies, they suggested that a summary or subset of the detailed spreadsheet cost estimating information become part of the Ministry of Employment and Investment's annual reporting of mine reclamation in the province, in order to capture the relevant information in one public reporting document. The ministry representatives on the task force agreed to incorporate summary information into the Chief Inspector's report, Mining in British Columbia. It was agreed that mine reclamation permitting documentation, which is public, should be expanded to provide more detail regarding reclamation cost estimates and security requirements.

Policy Recommendation

The Task Force recommends that mine permitting documentation be expanded to include disclosure of the estimated total mine reclamation liability and the terms of security required. It also recommends that an appropriate summary of the mine reclamation cost estimating information submitted to the Ministry of Employment and Investment be contained in the Ministry's annual report and statistics on mining activity in the Province. Part 10.1.2. of the Health, Safety and Reclamation Code provides for confidentiality of detailed reclamation costs. Accordingly, the Ministry will not release cost estimate information which could compromise any company's competitive position.
Issue

Corporate reporting requirements.

Background

Environmental accounting is an evolving field. This particular issue concerns the formal method of reporting used by companies to inform their stakeholders of the financial effect of their reclamation obligations, and whether or not companies can be required to disclose reclamation information in their corporate reporting documents according to the government’s standardized reclamation costing criteria.

All public companies must follow Generally Accepted Accounting Principles (GAAP), one of the basic principles of which is the matching of costs to revenues. This poses a problem in recording mine reclamation costs that continue long after the revenue stream has ceased. As well, it is the auditors’ responsibility, pursuant to the Canadian Institute of Chartered Accountants (CICA) Handbook, to ensure that management reports corporate financial affairs in accordance with GAAP. As part of financial disclosure for public companies, the CICA Handbook requires that companies recognize mine reclamation in their financial statements, as follows:

"When reasonably determinable, provisions should be made for future removal and site restoration costs, net of expected recoveries, in a rational and systematic manner by charges to income."
It further requires that companies make provision for and accrue mine reclamation costs when there is a likelihood of their incurrence as a result of environmental law or when the company has a site restoration policy. The CICA Handbook also recognizes that a contingent liability for reclamation costs may exist even though those costs cannot be reasonably determined. The accepted procedure is to charge estimated expenses against current revenues, whether or not reclamation expenses are incurred in the current accounting period. This approach is consistent with the matching principle in that all reclamation expenses, whether incurred in the current or subsequent accounting periods, are recorded against the revenue stream.

Discussion Process

It was acknowledged by the task force that companies are not regulated in this regard by the Ministry of Employment and Investment and therefore a policy recommendation could not be put forward. At the same time, with the ministry’s acceptance of industry’s reclamation cost estimates for companies which meet its risk assessment criteria, industry’s and government’s reporting of reclamation cost estimates will become more consistent in the future, thus providing greater certainty in cost estimating.

Conclusion

While companies may choose to report on their compliance with Ministry of Employment and Investment’s standardized reclamation cost estimating criteria, it is recognized that the inclusion of such estimates in corporate financial statements is up to the discretion of individual companies and their auditors, who are regulated through compliance with Generally Accepted Accounting Principles (GAAP), the Canadian Institute of Chartered Accountants Handbook, and securities commissions in their jurisdictions. The Task Force encourages individual companies to be open in reporting their mine reclamation liabilities.
Public Involvement and Disclosure

Issue

Public involvement in the process of determining mine reclamation security.

Background

In British Columbia, when specific mines have developed serious closure problems, public liaison committees have been used to increase public awareness and provide input from the local community. These committees draw their membership from local government and business, environmental organizations, labour, First Nations groups, and other stakeholders. They enable the community to review mine closure and reclamation plans, and to provide input on specific reclamation options and requirements. Public liaison committees are supported by both government and industry and have been used at the Equity, Sullivan, Brenda and Endako mines.

In the case of Equity Silver Mines, which underwent the province’s most extensive reclamation review process to date, a public surveillance committee was formed by the Ministry of Environment in the early 1980s when ARD was first identified. This committee has continued to play a key role in the review of Equity’s reclamation issues. As part of the agreement reached between the then Ministry of Energy, Mines and Petroleum Resources and Equity in 1991, costs are to be reviewed by a separate government and company committee every five years. Consequently, several day-long sessions will be held over the next two months. A member of the public surveillance committee has been invited to become a full member of this committee.
Discussion Process

The subject of public involvement was brought up at various points throughout the task force’s discussions, in particular by the members representing environmental organizations. The pivotal issue put forward was the need to establish clearly defined guidelines which would specify the stages in the process of review of mine reclamation programs and security requirements that the public should be involved. The environmental representatives suggested that this would enable the public to be notified well in advance of the timing of their involvement, thereby encouraging greater public awareness of and participation in issues of public concern. There was also acknowledgement of the industry’s right to maintain confidentiality on certain financial matters. The ministry representatives responded that the government has an open policy regarding public involvement and an objective of better informing the public, as exemplified by the forthcoming Equity review process.

Policy Recommendation

The Task Force supports the Ministry of Employment and Investment in maintaining an open policy with respect to informing the public of all mine reclamation security policies, procedures and activities in the Province. The Task Force recommends that public involvement continue to be encouraged and the public’s role in the review of mine reclamation issues, plans and security requirements be clearly defined and communicated. Under present legislation, the Chief Inspector of Mines has ultimate authority with respect to the issuance and conditions of mine permits in the Province.
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