

A RECLAMATION POLICY FOR THE MINING INDUSTRY IN BRITISH COLUMBIA

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Introduction

At the Second Annual British Columbia Mine Reclamation Symposium in Vernon, British Columbia in March 1978, the Ministry presented a paper entitled "British Columbia Ministry of Mines & Petroleum Resources Reclamation Policy". This paper contained a set of preliminary reclamation guidelines. At that time, industry and government agencies were asked to review the draft and provide comments.

Another set of draft guidelines which reflected working policy was circulated within government and to the Mining Association in early 1982. A meeting was held with the Association in April 1982 to discuss the draft.

The present guidelines, we believe, incorporate to the maximum extent possible, input from the industry and government agencies. With the exception of the section on security bonding, there is nothing new here. It is primarily an articulation of working policy and procedures pursuant to Sections 7, 8 and 9 of the Mines Act.

These finalized guidelines provide for high yet reasonable standards of achievement. They follow the philosophy of the Mines Act which allows for programs to be developed by industry for my approval based upon recommendations of the interministerial Reclamation Advisory Committee and upon response from interested parties. The land use and productivity objectives which are referred to are negotiable on a project by project basis.

There has been considerable debate in the mining industry regarding the requirement or need to reslope waste dumps. All waste dump slopes which were created after reclamation legislation was enacted in 1969 must be reclaimed to an approved land use.

Those mines which have undertaken

programs which incorporate recontouring to flatter slopes have achieved excellent results. Therefore, my guidelines are written to require resloping unless proof can be presented that land use objectives can be achieved some other way.

Past bonding practice has been to require funds to be placed in the form of cash or guaranteed securities. This practice has resulted in a "front-end" cash loading to the mining industry which it can ill-afford. This government will still require a security to guard against a default of reclamation, however, I have taken steps to allow the option of other forms of security such as letters of irrevocable credit and bonding company bonds. These forms of security are used widely in the construction industry to ensure performance and their main advantage is that they are paid for by an annual premium based on an insurance risk factor. They will be of particular benefit to those companies with a good performance record.

I have also instructed my staff to ensure that the amount of initial security required will be sufficient to cover reclamation costs if a default occurs during the first three years of operation. The security will be reviewed following the initial three year period and if the permittee is performing satisfactory reclamation in a progressive manner, the security could be reduced.

Although this paper forms the working policy for reclamation in British Columbia, future revisions may be made after consultations with affected parties.

The rapport which has been established in British Columbia between the mining industry and government is an example which is envied elsewhere in Canada and the United States. The fact that the Ministry which is responsible for mining also administers

reclamation is a major reason for this. This situation is unique and places a responsibility on the industry to set reclamation objectives with m staff and develop the reclamation programs necessary to achieve them. My government owes a debt of gratitude to those companies in British Columbia who have developed the reclamation technology which makes it possible for this partnership to be so productive. Many of these companies have been recognized through the annual Mine Reclamation Award.

Mine Reclamation Guidelines

These guidelines outline the criteria for acceptable reclamation by the Minister pursuant to sections 7, 8 and 9 of the Mines Act. Areas disturbed by mining shall be left in a neat and tidy condition and reclaimed so that the land and watercourses are left in a manner which ensures an acceptable productive land use consistent with the safety and health of the public.

Land Use

The surface of the land and watercourses shall be reclaimed to a land use that considers the potential use of the land having regard to its best and fullest use.

Productivity

The level of land productivity to be achieved on reclaimed land shall not be less than existed prior to mining on an average property basis unless the proponent can produce adequate documentation to support the impracticality of this level. Land shall be revegetated to a self sustaining state using appropriate plant species.

Use of Suitable Growth Medium

A growth medium which will satisfy land use and productivity objectives shall be placed on the surface. Where necessary, sufficient topsoil or other suitable growth medium shall be saved for use in reclamation programs.

Treatment of Structures and Equipment

All machinery, equipment and building

superstructures shall be removed. Exemptions may be granted where buildings are maintained and used for another purpose.

Concrete foundations and slabs may be left intact, provided they are covered by overburden and revegetated unless otherwise approved by the Chief Inspector of Mines.

All scrap material shall be disposed of in a manner acceptable to the Chief Inspector of Mines.

Other Provisions

All other provisions of the Mines Act shall be complied with to the satisfaction of the Chief Inspector of Mines.

Waste Dumps

ATP waste dumps shall be reclaimed in accordance with land use objectives. Waste dumps shall be recontoured so that the angle of repose of lift faces does not exceed 27 degrees, unless proved through field-scale trials that land use and productivity objectives can be otherwise achieved.

Watercourses

Drainage of the entire minesite shall be restored either to original watercourses or to new watercourses which will sustain themselves in future without maintenance. The reclamation program shall ensure that long-term water quality is preserved.

Pits

Pits shall be backfilled where feasible, and in accordance with approved plans.

Where the pit area will be a lake, a report shall be submitted to the Chief Inspector of Mines outlining the source of water, drainage area, maximum level of water, water quality and future use.

Where the pit floor will be free from water, overburden shall be used to provide sufficient cover to establish vegetation.

Tailings Impoundments

The Guidelines for the Design, Construction, Operation and Abandonment of Tailings Impoundments issued by the Chief Inspector of Mines on December 30, 1983

outline the requirements for tailings impoundments.

All tailings ponds and impoundment structures shall be reclaimed to the approved land use.

Roads

"Unless otherwise approved by the Chief Inspector of Mines, roads shall be ripped and covered with a suitable growth medium and reclaimed to the approved land use.

Toxic Materials

Waste material which is directly or indirectly harmful to plant and animal life shall be disposed of in a manner which prevents adverse effects. Vegetation shall be monitored for heavy metal uptake to ensure that elevated metal levels do not occur. Completely covering potentially toxic material with glacial till or topsoil may be required.

Disposal of Toxic Chemicals

Chemicals or reagents which can not be returned to the manufacturer are to be disposed of in accordance with the Waste Management Act.

Acid Generating Material

All potential acid generating material

shall be disposed of in a manner which prevents acid mine drainage.

Temporary Shutdown

If a mine ceases operation for an indeterminate period, the owner, agent or manager must either continue to carry out the approved program or apply for an amendment setting out a revised program for approval.

Bonding

Pursuant to section 9 of the Mines Act, sufficient bonding shall be held, to a maximum of \$2 500/hectare for all lands to be used for the mine, to provide the money necessary to perform an carry out properly all the requirements of the approved program should a default occur within the first three years of operation.

The security will be reviewed following the initial three year period and if the permittee is performing satisfactory reclamation in a progressive manner, the security could be reduced.

Security may be in the form of cash, assignable securities guaranteed by a government, certificates of deposit or term deposits guaranteed by a bank, letters of irrevocable credit issued by a bank or bonding company bonds issued by a duly registered company.