Coal Mining In The Green Area

J. E. Benson

Introduction

I am pleased to be here this afternoon to discuss the role of Energy and Natural Resources - in particular the Alberta Forest Service - as it relates to the administration of coal development projects on public lands that we administer.

The department is divided into two areas: the renewable resource sector and the non-renewable resource sector. The renewable resource sector is responsible for the management of public lands and its associated resources such as timber, range, watershed, fish and wildlife, recreation, etc., while the non-renewable sector is responsible for the administration and management of mineral and energy resources.

The Alberta Forest Service is responsible for managing the public lands in the Green Area. The Green Area consists of non-settled forest lands and covers 51% of the total land area of the province. Management in the Green Area by the Alberta Forest Service has a basic objective of ensuring a perpetual yield of forest products and benefits, while maintaining a forest environment of high quality. Certainly the multitude of resources in this area requires an integrated management approach, frequently in conjunction with other government agencies or departments. The management approach must consider timber production, watershed protection, recreation, fish and wildlife habitat, grazing, fire protection, along with the development of the various non-renewable resources such as coal, oil and gas, sand and gravel, oil sands, etc.

The public sees us as the protector of the forest resource but our role is much more involved than protecting timber from fire, disease, and insects. In recent years, the demand for the diverse resources of the Green Area has increased, with disruptions caused by land use conflicts between developers and their impacts on the environment. This resulted in the AFS taking the lead role in reducing these land use conflicts by applying a multiple-use

concept which allows development to proceed within the Green Area, but still protects the aesthetic and environmental aspects of our forested lands.

Predevelopment Planning

The key to protecting the various resources is to have a strong resource management policy to reduce land use conflicts and protect sensitive resources. These are:

The Eastern Slopes Policy
Integrated Management Plans
The Coal Policy
Fish & Wildlife Policy

While I am sure you are aware of these documents and processes, I would like to explain how they assist in the predevelopment planning of resource extraction activities.

Information collected from the Foothills Resource Allocation Study, along with public concerns, expressed a desire to protect the unique nature of the Eastern Slopes and recognize that land use zones were required to effectively provide benefits.

The basic policy guidelines contained in the Eastern Slopes Policy 1984 are:

- To put the highest priority on managing and protecting the watershed

- To develop, manage, and protect the natural resources, consistent with the principles of conservation

- To protect the character and uniqueness of the Slopes for its aesthetic qualities

- To develop and maintain the recreational resources

- To manage the renewable resources while encouraging the development of non-renewable resources in areas where this priority can be maintained

- To provide a framework, based on an integrated planning process, so that decisions can be made on the development, management, and protection of natural resources. All levels of this process will include public involvement.

The integrated management process was designed to complement the Eastern Slopes Policy to ensure that there would be co-ordination of land and resource management programs so that conflicts are minimized. It encourages multiple use but recognizes that, for some areas, management may require a single use.

The integrated management process attempts to include all concerned agencies so that their respective expertise and disciplines can be fully utilized in effective resource management. Industry and the general public are also invited to become part of this process so that their concerns and viewpoints can be represented and incorporated into the various plans.

In the past few years, attention has been focused on the disturbance to the land surface by the coal industry. While it was recognized that there were only a few coal mines in the province, surface mining along its infrastructure requirements, including access roads, railways, plantsites, and powerlines, cause extensive land disturbance and unique environmental problems to the local region. This has resulted in the formation of "A Coal Development Policy" which was set up to deal specifically with the orderly development and administration of coal resources. It also gave priority to protecting the land and its resources, and ensuring that these resources would be restored to their original state. It is the objective of the Alberta Forest Service that lands disturbed for coal mining be restored to a condition which will again produce a land base that will support the various land uses and resources.

Now that we have looked at the broad aspects of the various policies and processes that generally categorize the land surface, we get down to the actual site being considered for development.

Once the various policies and regional plans have given the green light to a coal mine proceeding, predevelopment planning for the site-specific area should include:

1) The inventory of renewable and non-renewable resources

2) Analyses and mitigation of environmental problems

3) The reclamation and restoration of the site.

Inventory of the various resources is required to effectively put together a development and reclamation plan that ensures that land use conflicts are minimized, land and water resources protected, and the area restored to its original state, as indicated in the Coal Policy.

In reference to capability assessment in the Green Area, the Alberta Forest Service is in the process of looking at various systems that can be used to give an accurate assessment of various sites to support forest growth. Its application to the predisturbance reclamation planning is obvious, since it allows a decision to be made on land allocation for commercial timber production against other uses such as agriculture, wildlife habitat, etc.

In predevelopment planning, the coal operator should take into consideration the environmental aspects of their site and the mitigation measures that will be required. We have various guidelines and documents that can be used to eliminate environmental problems before they occur. These operationsl tools are:

The Resource Handbook
The Resource Road Planning Guidelines

In the planning stages are:

Stream Crossing Guidelines (going to print)
Operational Guidelines (being developed)

To further protect the site, all land users in the Green Area (as well as the White Area) are required to submit an application for the rights to a disposition under the Public Lands Act. The most common disposition known to coal operators is the Mineral Surface Lease which allows them to operate within certain well-defined boundaries under site-specific conditions that will ensure that the land and water resources are protected and restored to their original state, after mining has been completed. Within the boundaries of the MSL, once the operator has received approval for his development and reclamation program, the Alberta Forest Service limits its involvement to ensuring that timber and topsoil is salvaged, erosion control is enacted, and reclamation is proceeding on schedule.

One concern that we have that overlaps with Alberta Environment mandate is water management. While it is Environment's mandate to protect the water quality of the lakes and streams, we also have a responsibility as it relates to the watershed. Our experience over the last years with coal operations indicates that, when a fisherman sees his favorite stream running black with coal fines and silt, the first person he usually contacts is the local forest officer. While it would be easy to pass the individual on to Environment, we feel that it is our responsibility to take action and resolve the situation where we can.

In regard to reclamation, the predisturbance inventories carried out as a function of the EIA or D&R Approval, dictate to a large extent the vegetation cover or land uses that will be established. As a general rule, those lands considered to be productive, as defined by our Alberta Forest Service Phase III Specifications,

will be required to be reforested. This would mean that, if predisturbance inventories indicate that a certain percentage of the land base contains productive forest land (as defined by our Phase III), this same percentage must be restored. At present, while we have strong reforestation guidelines for the forest industry that clearly outline their responsibility, we do not have the same for lands being reclaimed. We are presently requiring productive forest lands to be restocked with acceptable tree species as specified by the Timber Management Regulations. The minimal stocking standard, as specified in the regulations, would require 1000 seedlings per hectare to be established before the end of a ten-year period. Our experience to date indicates that, in order to meet this standard, an average of 1250 seedlings per hectare for average sites and up to 1700 seedlings for harsh sites would have to be planted.

It is important to interject that predisturbance inventories and their assessment are invaluable in reclamation planning since site and soil factors need to be known to ensure success. A great deal of time and money may be wasted in reforesting areas where site conditions are not suitable. In addition to the stocking standard being applied, the AFS is looking at growth performance standards that could be applied in the certification process to ensure that reforested lands have been successfully reclaimed. To deal with this situation, a committee was put together in 1982 with respresentatives from the Alberta Forest Service, Public Lands, and Fish and Wildlife to formulate Revegetation Guidelines dealing not only with growth performance standards for forested lands, but other vegetation types serving land uses such as wildlife habitat, watershed protection, and grazing. While the committee was able to make progress on the guidelines, it became difficult finding growth performance standards that could be applied in the certification process.

It is for this reason that the AFS is participating in the joint government/industry Mountain Foothills Reclamation Research Program, which is conducting a literature review of data that could be used to develop standards expected of the various land uses in the Eastern Slopes of Alberta.

Once the Mountain Foothills Reclamation Research Program has completed the literature review of all data pertinent to developing these standards, the committee is hopeful that there will be enough information available to put these guidelines together. We appreciate the positive response that we have received from the coal industry in conducting research into reclamation concerns, and their participation in the Mountain Foothills Reclamation Research Program. This information will prove invaluable to both industry and government in putting together realistic guidelines that will be acceptable to both parties.

On the subject of research, I would like to make a general statement. We recognize that research is important and necessary, but the state of the art has progressed to a point where the coal industry should be in a good position to start serious reclamation. More effort must be made in development planning in restoring disturbed lands as quickly as possible. A lot of research has already been done to prove reclamation success and, as I have stated before, if the operators would give more serious consideration to predisturbance site factors in their planning, they could minimize the risks involved with restoring the site to its original state.

It should be mentioned that while we are developing guidelines and standards to evaluate reclamation success, Reclamation Certificates have been given to some lands previously mined. These lands, however, were mined prior to the 1976 Coal Policy and were based on a minimal standard of erosion control, with a self-maintaining plant cover. The new policy will require that mined lands be returned to the same productive state it was prior to disturbance. Growth performance standards were not applied to these lands prior to the 1976 Coal Policy.

In closing, one of the major concerns we have with existing mines is the stability of the coal market and the relationship with reclamation. We understand that during periods of economic hardship costs have to be kept down, but we are concerned that, when expenses are being looked at, reclamation is the first area where cutbacks will occur. It is obvious that reclamation is not generating any income for the coal operator, but it is important that there be a commitment to reclamation during down markets. This will require useful planning and co-operation with government to ensure that reclamation proceeds, even at a reduced rate, to maintain good public relations and avoid massive reclamation having to be done by the company or government. Certainly it will not help the image of the coal industry if reclamation is not done on a progressive basis and becomes impossible to rectify. This will only result with higher performance bonds being applied, and tougher regulations.

PROCEEDINGS

ALBERTA RECLAMATION CONFERENCES

1985
Planning and Certification
of Land Reclamation
April 16-17, 1985
Edmonton Inn, Edmonton

1986
Reclamation in the
Eastern Slopes of Alberta
September 25-26, 1986
Overlander Lodge, Hinton

C.B. Powter
R.J. Fessenden
D.G. Walker
Compilers

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P R O C E E D I N G S

1985 AND 1986
ALBERTA RECLAMATION CONFERENCES
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For more information on the Alberta Chapter of the Canadian Land Reclamation Association please write to CLRA, Box 682, Guelph, Ontario, Canada N1H 6L3.

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