

MEMBERS' BULLETIN

Box 5253
Vancouver, B.C.
V6B 4B5
Tel: (604) 683 - 5133
Fax: (604) 685 - 8697

B.C. ENVIRONMENTAL INFORMATION INSTITUTE

December 13, 1991

WINDY CRAGGY!

We have prepared a review of the "WINDY CRAGGY PROJECT" that attempts to provide you with detailed and factual information on this project. The reason we selected this particular project is first, the sheer magnitude of the project and second, the complexity of the issues.

During the course of this review many hundreds of pages of documentation were read and in many cases re-read, people were interviewed and facts verified. The report that has resulted is much longer than we would have liked but it seemed impossible to provide a useful level of detail without including rather a lot of material. Our Chairman and Chief Editor, Mayor Gerry Furney insisted on an executive summary, and rightly so.

In any case this is our first attempt at reviewing a major project. A significant problem was dealing with the mining industry "jargon". It is as bad as or worse than the language of the logging industry. It seems at times that a big part of the problem we face in communicating with the public is the language we use. We have tried to keep the language of the report non-technical and have avoided unnecessarily detailed technical explanations.

If you have any comments or suggestions with respect to this report, or anything else for that matter, please let us know. We got some very useful feedback as a result of Gerry's letter in early November.

MERRY CHRISTMAS

and a

HAPPY NEW YEAR

LOG NO:	DEC 19 1991	VAN	5
ACTION:	Bob (FRI) file		
FILE NO:	Windy Craggy		

WINDY CRAGGY

EXECUTIVE SUMMARY

The Windy Craggy project, in the extreme NW corner of B.C., is the subject of international controversy. The issue is mineral development or wilderness. The stakes on both sides are immense.

WHAT ARE THE KEY POINTS?

- 1 Windy Craggy has the potential to become one of the biggest copper mines in the world.
- 2 If the Tatshenshini - Alsek River drainages, where Windy Craggy is located, are combined with the Kluane National Park in the Yukon and Glacier Bay National Park in Alaska the biggest wilderness area in the world would be created.
- 3 The technical aspects of the mine are complex and include controlling acid rock drainage, transporting the copper concentrate by pipeline to Haines, Alaska, mining road construction and waste water purification. Reasonable technical solutions to these issues have been developed.
- 4 Concerns persist that the technical solutions do not offer 100% guarantees and that the salmon fishery, wildlife and the wilderness values will not be adequately protected.
- 5 The mine proposal will create 500 direct jobs and 300 indirect jobs for an estimated 20 year period. The direct economic activity generated in the form of wages, direct taxes and supplies purchased is estimated at 88.9 million dollars per year for the first 10 years.
- 6 The economics of wilderness recreation are difficult to determine but it is estimated that between river rafting on the Tatshenshini and big game hunting the direct economic activity would not exceed 2 million dollars per year.
- 7 International pressure is mounting and groups in the United States and Europe are demanding the area be preserved in its wilderness state.
- 8 The mineral claims were legally staked in 1958. Geddes Resources Limited optioned the claims in 1981 and since then has spent over 45 million dollars on defining the ore body and on engineering and environmental studies.

"WINDY CRAGGY"

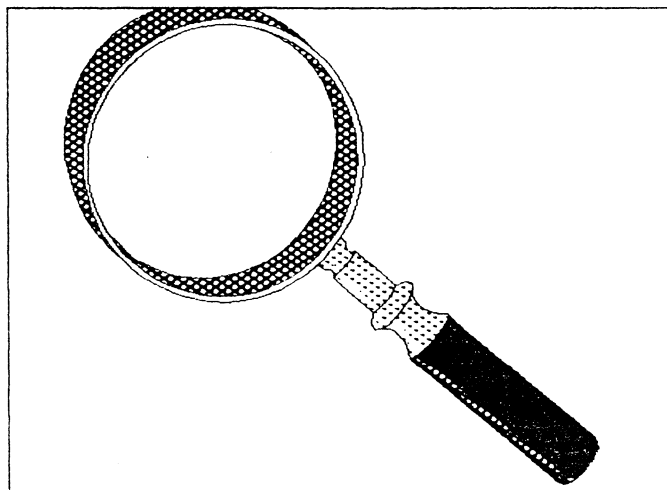
TO MINE OR NOT TO MINE

CAN A BALANCE BE FOUND BETWEEN WILDERNESS, ENVIRONMENTAL PROTECTION AND ECONOMIC DEVELOPMENT? THIS HAS BECOME A FUNDAMENTAL ISSUE IN BRITISH COLUMBIA THAT WILL IMPACT US ALL. WE HAVE RECENTLY REVIEWED THE WINDY CRAGGY PROJECT IN THE EXTREME NW CORNER OF THE PROVINCE AND THE RESULTS OF THIS REVIEW POSE SERIOUS QUESTIONS.

WHAT DOES IT TAKE TO BRING A MINE INTO PRODUCTION THESE DAYS?

Historically mining has been one of the key contributors to the British Columbia economy. Yes, there have been some environmental problems associated with the mining industry. Mechanisms however are now in place to protect the environment and the public interest. Environmental awareness and preservationist pressure have increased over the years to the extent that fundamentally sound projects are now in jeopardy.

We are all aware that our society is dependant on the products derived from our resource industries. What would we do without iron, copper and other mineral products that we depend on? Look around you and visually remove all of the metal, glass, stone, brick, tile, gyproc, concrete etc. and catalogue what is left. Reflect on the machines that mined, manufactured, cut, polished and finished these products. Consider the economic benefits such as jobs, tax revenues, exports and the social benefits.



Windy Craggy - A Closeup!

Wilderness and its "special significance" has become a major factor in the Windy Craggy decision-making process. How do you evaluate wilderness? Is it the tangible value of recreational usage that is important or does wilderness have an intangible, intrinsic value to society?

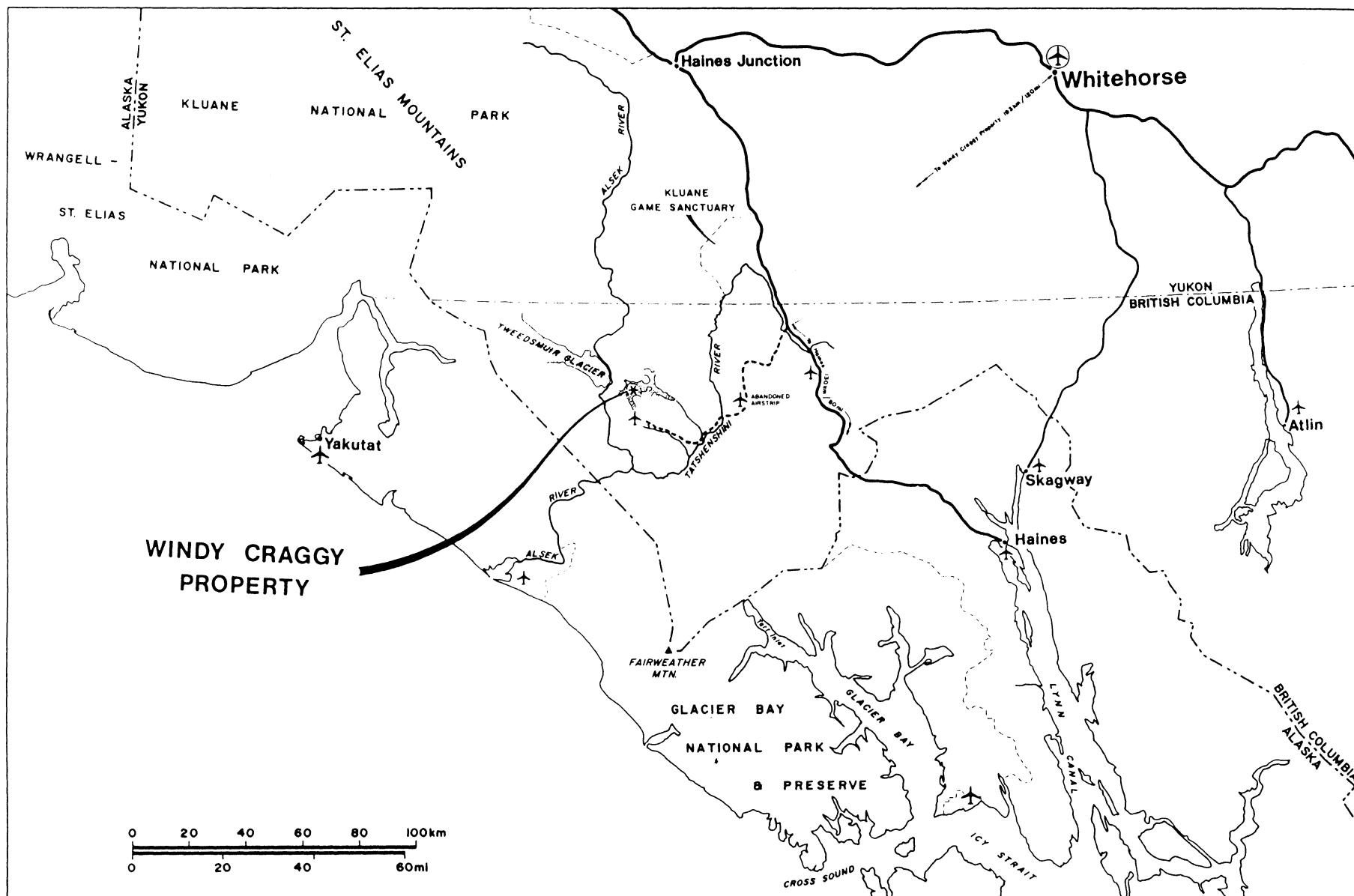
9 British Columbia has a process in place that covers all aspects of mine development and offers a high degree of protection to the public.

Should we forego the obvious economic benefits of the mine development and create a huge wilderness park? Have the environmental issues been adequately addressed? Is there room for compromise? How useful is a wilderness that is locked in snow and ice for most of the year? How would Geddes Resources Ltd. be compensated if the decision is made to preserve the area as wilderness.

We once again face the land use dilemma. This area is still open to mineral exploration and the staking of mineral claims. Is it right to permit individual prospectors and corporations to spend their time and money on legal exploration if there is no intention to permit development of the mineral deposits they discover?

The mining and international investment community can have no confidence in British Columbia until they have a clear understanding of the rules governing land use and mineral development! This problem is not unique to the mining industry and in fact includes all of our natural resource based industries including logging, ranching, oil and natural gas and will, in time, include commercial recreation developments such as ski resorts.

Windy Craggy should go forward. The evidence indicates this project to be sound and the environmental impacts to be minimal.



The B.C. Environmental Information Institute advocates a clean, safe and healthy environment within a framework of sustainable development and a strong economy. In light of those aims let's take a look at the mine development process. Is the mining industry on track? What about Windy Craggy?

"WINDY CRAGGY"

In order to get an idea of what is happening in the mining industry and to gain an appreciation of what is involved in bringing a new mine into production the Institute decided to do a case study. The project selected was THE WINDY CRAGGY PROJECT being planned by Geddes Resources Limited, which is now at Stage 1 in the B.C. Mine Development Review Process.

The name alone has a strong appeal - "Windy Craggy". It just reeks of snow, ice, rugged mountains, grizzly bears and isolation. The name tells it all. This proposed new mine is located in the extreme NW corner of British Columbia, almost surrounded by Alaska. Hidden in the Alsek Range on Tats Creek, a tributary of the Tatshenshini River, it is about as isolated as it gets. However, enough romance - let's get down to some facts.

HISTORY

The mineralization in the area was discovered by prospectors in 1958 at which time the interest was in nickel mineralization. However the early work also showed promising signs of a gold deposit. In 1981 Geddes Resources Limited obtained an option on the property and serious exploration was begun. By the end of 1987 the exploration had confirmed a significant COPPER deposit on the claims.

A tunnel (adit) was started into Windy Craggy Mountain at the 1400 metre level in 1987 and by 1990, 4139 metres of tunnel had been constructed and 61,076 metres of diamond drilling had been completed. The work to this stage includes geological exploration, engineering, environmental and socioeconomic studies and has cost approximately \$45,000,000.00.

THE MINERAL DEPOSIT

The mineralization is centralized in two zones extending about 1500 metres distance just below the peak of Windy Craggy Mountain. For identification purposes these two zones have been designated as the North Zone and the South Zone. The mineralization has a vertical extent of at least 600 metres and a width up to 200 metres.

Dec '91 - ^{new} reserve

The ore reserves were estimated at 210 million tonnes grading 1.66% copper, 0.09% cobalt, 0.2 grams of gold per tonne and 3.5 grams of silver per tonne. New information released on November 25, 1991 indicates an increase in these reserves of 110 million tons. With further exploration there is an excellent chance these reserves may be significantly increased.

This is A VERY SIGNIFICANT COPPER DEPOSIT. With a projected production of 140,000 tonnes of copper per year this amounts to 1% of world copper requirements. Currently identified deposits indicate at least a 20 year life for the proposed mine. As a comparison, in 1990, the total B.C. copper production was 346,132 tonnes.

MINE DEVELOPMENT

The initial mine plan proposes two open pits, one in the North Zone and one in the South Zone. These will be combined with an underground mining operation commencing in the 10th year of operation.

A major goal of the proposed mine plan is to reduce the volume of waste rock and the combined open pit/underground operation is projected to reduce the volume of waste rock by about 50% as compared with a complete open pit operation. The waste to ore ratio is projected at 1.9:1

The plan is to have semi-mobile crushers in the open pits feeding the ore downward through ore passes to the adit (tunnel) where it will be transported by conveyor to the portal and processed through a grinding plant. The resulting slurry will then be transported by pipeline, 13 kilometres, to a flotation plant to be located near Tats Lake. Current testing indicates that the flotation process will produce a concentrate containing 28% copper and some gold and silver values. It is estimated that 88% of the copper will be recovered in this process. The concentrate will then be transported to Haines, Alaska by a slurry pipeline where it will be de-watered and loaded on ships for transport to smelters for final processing.

ENVIRONMENTAL ISSUES

Located as it is, in a remote, little-known area, the Windy Craggy Project presents some complex issues. Concerns with respect to wilderness, wildlife, river rafting, fisheries, water quality, guiding territories, heritage and native issues have been voiced. The extreme weather conditions of the area, the presence of glaciers and the potential for seismic events add to the complexities.

The mine itself and the potential for acid rock drainage appear as primary concerns. Sulphuric acid generation is extremely complex and has been the subject of considerable study, an issue we will explore later. The road to Haines, Alaska is also of concern.

A parallel concern is the issue of wilderness. If the Kluane National Park, and Glacier Bay National Park & Preserve in Alaska were combined with the Tatshenshini and Alsek River drainages in B.C. one of the biggest wilderness areas in the world would be formed.

The slurry concentrate pipeline to Haines, Alaska and the proposed fuel pipeline have been the subject of some controversy. One concern is the treatment and disposal of the waste water from the slurry pipeline in Haines. The consideration here is that small amounts of copper and other pollutants in the waste water may have a deleterious impact on the salmon fishery. This issue is under review by the United States and Alaska authorities.

The mine operation, camp and maintenance facilities have been questioned with respect to waste and sewage disposal.

THE STAGE 1 REPORT

In the work that has been done to date all of the foregoing issues and more have been addressed in some detail. Geddes Resources Ltd. has prepared a 5 volume stage 1 report as part of the Mine Development Review Process. This initial report was submitted on January 31, 1990 to the Mine Development Steering Committee and subsequently to the Federal and Provincial reviewing agencies, the United States Government and the State of Alaska. In addition the proposal has gone to public review in the affected communities. As a result of public input and some preliminary comments from the reviewing agencies supplementary studies and reports have been prepared and incorporated in the initial plan. Geddes Resources Ltd. is now attempting to get clear terms of reference for the Stage 2 report.

SOCIOECONOMIC BENEFITS

Construction of the mine site facilities and the access road will require a labour force of approximately 500 people during construction. Once construction is completed a labour force of about 500 will be required to operate the mine.

In planning the Windy Craggy project the decision was made to transport the mining and supervisory staff in and out on a two week rotation with on-site living quarters being provided. This has the effect of eliminating the need to construct a town site with the infrastructure that would entail and reduces the added environmental impact of a full scale town. This approach also minimizes the problems associated with mine closure and rehabilitation.

It is estimated that the indirect and induced employment that will be created if this project goes forward is about 312 full time equivalent jobs. In total the project will produce upwards of 800 full time jobs.

ECONOMIC BENEFITS - THE FIRST 10 YEARS

Because of construction costs and other factors a more realistic picture is provided if the wages and costs are given for the first 10 years rather than for a single year. Consequently the following figures are for the first ten (10) years of operation.

WAGES	255 MILLION DOLLARS
SUPPLIES	435 MILLION DOLLARS
MINING TAX, B.C.	62 MILLION DOLLARS
CORPORATE TAX, B.C.	58 MILLION DOLLARS
CORPORATE TAX, CANADA	79 MILLION DOLLARS
TOTAL	<hr/> 889 MILLION DOLLARS

Averaged over the first 10 years this amounts to \$88.9 million per year. It should be noted that this is the direct economic benefit and does not include the indirect impacts. If factors such as personal income tax, fuel tax, social services tax and economic multipliers are considered the numbers are much higher.

THE KEY CONCERNS

ACID ROCK DRAINAGE

While numerous issues have been raised the issue of acid rock drainage appears as a major area of concern. The following methods have been proposed to meet this challenge but first some background.

Simplistically, when sulphur bearing rock is exposed to air and moisture a weak sulphuric acid compound is produced. This is a natural process that goes on all the time and is one of the causes of rocks breaking down and soil formation.

Not all rocks contain sulphur. In the case of the Windy Craggy mineral deposit there is sulphidic rock, calcareous rock and rock that is classified as non-calcareous & non-sulphidic. It is only the sulphidic rock that will contribute to "acid rock drainage". In fact the calcareous rock has a neutralizing effect on the acid.

In the selected mining plan the total amount of waste rock is estimated at 243,800,000 tonnes. Of this total amount approximately 100,000,000 tonnes is sulphidic rock.

The crystal size of the sulphides in the sulphidic rock has a bearing on the rate of acid production. The larger the crystal size the slower the rate of acid formation. In the case of Windy Craggy most of the sulphidic rock has a large crystal structure.

The low average annual temperatures and the fact that much of the waste rock would be frozen for much of the year further reduces the rate of acid production. Other factors such as the size distribution of the waste material has a bearing on the rate of acid production. While it is not possible to predict the rate of acid production with absolute certainty, sound waste management practices will reduce the problem to insignificant levels.

WHAT IS THE POTENTIAL ENVIRONMENTAL PROBLEM?

The concern is that relatively weak concentrations of sulphuric acid in a stream or water course can kill the fish, plants and marine organisms. Examples exist where acid rock mine waste has virtually wiped out stream systems. These examples are cases where no preventive measures were taken to control or neutralize the acid rock drainage.

HOW CAN ACID ROCK DRAINAGE BE CONTROLLED?

Acid generation normally occurs when the sulphur bearing rock is exposed to both air and water. If the air is excluded, acid generation does not occur. In the case of Windy Craggy, Geddes Resources Ltd. propose to do two things. First is to separate the acid generating rock from the non acid generating rock as the ore and waste rock are being drilled, blasted and loaded out during the mining operation. The non acid generating rock will be disposed of in a normal waste dump. The composition of the material in the waste dumps will be controlled to ensure that the drainage will not harm water quality.

The acid generating rock will be dealt with quite differently. It is proposed to construct an impoundment in the upper Tats Creek valley and to keep the acid rock submerged in water. Experience and initial studies indicate this to be a feasible and relatively safe solution to the acid rock problem.

It must be noted that Windy Craggy is an area of high precipitation and steep topography and the impoundment area may be subject to snow and rock slides. The area has a high seismic rating and significant earthquakes have occurred in the region. However it is possible to engineer the impoundment and the dams to withstand severe earthquakes and other events.

The engineering solutions appear adequate to all but the cataclysmic event which would, in all probability, cause significant damage in the area with or without Windy Craggy. It would seem reasonable that the environmental assessment of the project be based on sound engineering, constant monitoring and tight controls.

It appears that Geddes Resources has addressed the issue of acid rock drainage with the best available technology. The evidence indicates that the environmental effects can be limited to acceptably low levels.

WILDERNESS

The valleys of the Tatshenshini and Alsek Rivers are wild, remote and beautiful. Someone made the comment that this area is "a voyage back to the ice age". There can be no doubt that during the short summer period the area is spectacular. It is equally true that for most of the year the area is a frozen, inhospitable piece of wild and savage land.

If this area were to be added to the Kluane National Park in the Yukon it would join up the St. Elias National Park and the Glacier Bay National Park in Alaska to form one of the largest wilderness parks in the world. This is a heroic concept. It is an idea that will stimulate the imagination of many people.

The international wilderness aspects of this area need to be considered. It has been stated that a river trip down the Tatshenshini into the Alsek River through the Alaska Panhandle into Dry Bay and the Gulf of Alaska is the longest wilderness river trip in the world. It seems clear that the wilderness values in Glacier Bay National Park in Alaska must be considered when the impacts of the Windy Craggy project are considered.

Both the Tatshenshini and the Alsek Rivers are currently used extensively by commercial river rafters and the upland areas by guide/outfitters. The season for river rafting optimistically runs from June 1 to September 30 with the peak times being from June 15 to September 10. Rafting appears to be highly regulated in Alaska and the maximum number of people permitted to raft the Alsek, including both private and commercial trips, is 1960 people per season. This is based on approximately 1 party per day. It is estimated that up to 450 people currently raft the Tatshenshini each year. River traffic from the Tatshenshini joining the Alsek would have to be severely limited if the wilderness experience is to be maintained. It is noted that the commercial river rafters are one of the strongest proponents of wilderness status for the area. In 1991 the area was still open for hunting and a season was provided for the hunting of Grizzly Bear, Moose, Mountain Goat and Sheep in addition to Ducks, Geese and Grouse. While the season for the different species vary the area was open to big game hunting from April 1, 1991 to November 15, 1991. It may be expected that the guide/outfitters would be active in the area during this period.

It is interesting to reflect on the tight control currently being exercised by the United States and Alaska park officials on the number of visitors permitted. With road access to the area British Columbia could exercise greater management control over this provincial recreational resource.

It is speculated that usage of the area will increase over time and tight regulation will be necessary if the present wilderness experience is to be maintained.

ECONOMICS AND BACK COUNTRY RECREATION

At the present time wilderness river rafting and guide/outfitters using the general area account for a limited amount of seasonal employment and generate some economic activity. This probably amounts to about 2 million dollars per year in Canada not including the multiplier effect. The road to Windy Craggy and the bridge over the Tatshenshini River will have a negative impact on the "purist" wilderness experience for some people. It is not possible to judge how significant this impact will be either emotionally to the rafters or financially to the local commercial rafting industry. There is, however, no clear evidence that this would reduce either rafting or back country recreational activity and in fact there is some evidence to indicate the improved access would increase back country recreation in the area making it affordable and accessible to more than just the "favoured few".

SALMON FISHERY

The salmon fishery in the Alsek - Tatshenshini River system and in Lynn Canal at Haines Alaska has been identified as a concern.

The possibility of acid rock drainage contamination of the Alsek - Tatshenshini as a result of mining activity is a consideration. In the unlikely event this should occur the damage to the salmon fishery and the resident trout population could be severe.

The methods proposed for disposing of waste materials, for controlling drainage at the mine site and for treating water before discharge appear to be effective. In addition the water courses in question have a large dilution and buffering capacity that should be recognized.

Inasmuch as the slurry pipeline and diesel fuel pipeline between the mine and Haines, Alaska could rupture there is a concern that copper concentrate and diesel fuel could be introduced into the river system. The pipe line system however will be designed to include leak detection systems, corrosion and wear monitoring provisions and other safeguards. The pipeline option is generally recognized as being safer than a large scale truck transport operation.

At Haines the plan is to remove the water content from the copper concentrate slurry, purify the waste water and release the water into Lynn Canal. The concern exists that the water released into the Lynn Canal may contain impurities dangerous to fish.

The treatment system that is proposed for the Haines terminal will effectively remove metals and other contaminants in order to meet the criteria required by the discharge permit. In terms of the more toxic metals the required criterion is more stringent than for drinking water. The treated water will be released through a diffuser at depth, thus ensuring fish stocks are not affected.

WILDLIFE

A concern has been expressed that wildlife in the area, primarily grizzly bears, dahl sheep and moose may be adversely effected by the mine operation and in particular by the access road to the mine.

The selection of the pipeline system for transport of concentrate and fuel oil has reduced projected truck traffic to 3 or 4 trips per day during the mining operation. The reduced traffic and associated maintenance should result in minimal effect on wildlife migration and habitation in the area.

THE REVIEW PROCESS

How is the development of new mines controlled and regulated in British Columbia? This is a poorly understood issue that has been of concern to many people.

New developments are controlled through a process that has been in effect since 1976 called the Mine Development Review Process. Recently this process has been given the force of law by the Mine Development Assessment Act.

The Mine Development Assessment Process that is in place in British Columbia is comprehensive to say the least. The stages are as follows;

- 1 Prospectus - describes the project.
- 2 Stage 1 Report - details the development of the project.
 In the case of "Windy Craggy" this is
 5 volumes of details on how the mine
 will be developed and the measures to be
 taken to protect the environment.

 Public hearings - as necessary
- 3 Stage 2 Report - As required. In the case of "Windy
 Craggy" terms of reference will be
 provided that will require expanded
 detail on mine development and
 environmental protection measures.
- 4 Disposition Decision - The development proposal is either
 accepted and a mine development
 certificate is issued, the proposal is
 rejected, or the project is referred to
 an assessment panel for more detailed
 review.

IF NOT REJECTED

- 5 Mine Development Certificate issued once all the questions have been answered.
- 6 Permits, Licences and Approvals are issued. This includes the reclamation requirements.

At the Stage 1 Report stage, where Windy Craggy is now, the project is reviewed by all relevant federal and provincial agencies and in this case by the state of Alaska and the United States federal agencies. In addition the report is made public and is subject to public review. The list of government agencies, organizations and environmental interest groups that have reviewed Windy Craggy to date include;

PROVINCIAL

Ministry of Environment
Ministry of Energy, Mines and Petroleum Resources
Ministry of Parks
Ministry of Tourism
Ministry of Native Affairs

FEDERAL

Environment Canada
Department of Fisheries and Oceans
Ministry of Transport
Energy, Mines and Resources Canada

ALASKA

Department of Fish and Game
Department of Environmental Conservation

UNITED STATES

Environmental Protection Agency
Department of Commerce
Department of the Interior

ENVIRONMENTAL INTEREST GROUPS

Tatshenshini Wild
National Parks and Conservation Association
Sierra Club - Alaska
National Wildlife Federation
The Wilderness Society
Probe International
Lynn Canal Conservation Inc.

Haines Alaska Native Brotherhood
American Rivers
National Audubon Society
Wilderness Journeys
The Sierra Club of Western Canada
World Wildlife Fund
The Sockeye Society

All of these organizations and more have submitted detailed comments and critiques of the project.

The government agencies, for the most part, have identified specific concerns that they want addressed in more detail in the stage 2 report. The environmental interest groups, while expressing many of the concerns of the government agencies, have indicated a preference for wilderness designation. ie. no mine development.

SOME POINTS

- 1 The original claims were staked in 1958. If development had proceeded at that time there would have been few if any constraints on development.
- 2 Since acquiring the claims in 1981 Geddes Resources Limited has spent over 45 million dollars to locate and confirm the size of the ore body, conduct engineering studies, conduct environmental studies and in preparing detailed reports and conducting public reviews.
- 3 The ore deposit has the potential to become one of the largest copper mines in the world providing approximately 1% of world copper requirements for the next 20 years.
- 4 When the mine goes ahead it will create on the order of 500 direct jobs and 300 indirect jobs for the next 20 years and provide 889 million dollars in wages, supplies and services and direct taxation over the next 10 years.
- 5 The issue of acid rock drainage is probably the major technical problem to be resolved. It appears at present that the problem can be resolved with reasonable certainty.

It must be noted that acid rock drainage is occurring naturally on this site and there is little evidence that the mine, as planned, will aggravate the current situation.

- 6 The challenge associated with the transportation of copper concentrate by pipeline to Haines, Alaska and the diesel pipeline to the mine appear to lend themselves to technical solutions.

- 7 Flying the mine staff in and out on a two week schedule will eliminate the need for a town site. This is a responsible approach and will significantly reduce the environmental and social impacts and problems of relocation on mine closure.
- 8 Any negative impacts on fish and wildlife can be minimized and this issue will be addressed in more detail in the stage 2 report.
- 9 If the project goes ahead it will have an impact on the environment. If the environmental protection measures are excessively stringent the economics of the project are such that it may not be feasible to proceed. A key question is whether or not a consensus can be reached on the environmental protection measures required.
- 10 Should any mining development be permitted in the area? Would the best decision be to preserve the entire area as wilderness for future generations?
- 11 If no mining development is allowed should any commercial activity be permitted in the area if it is to be preserved as wilderness? Paradoxically, large numbers of river rafters and guide/outfitters detract from the wilderness experience to a serious extent.
- 12 Can a way be found to develop the mine without significant detrimental effect on the wilderness experience?
- 13 How important are the economic benefits of the mine proposal to B.C., the Yukon and to Alaska?
- 14 Can wilderness recreation ever generate sufficient economic activity, considering the short season and the limits on numbers, to offset the potential economic benefits of the mine proposal? Can both coexist in this vast area?
- 15 If the area is declared a wilderness area who will repay Geddes Resources Ltd. the 45 million dollars plus that they have already spent and how much more should be paid for the lost economic opportunity? They have, after all, been working legally and in good faith on registered mineral claims.
- 16 Where does all of this leave British Columbia in the eyes of the international business community. The credibility of B.C. is at stake.

FOOD FOR THOUGHT

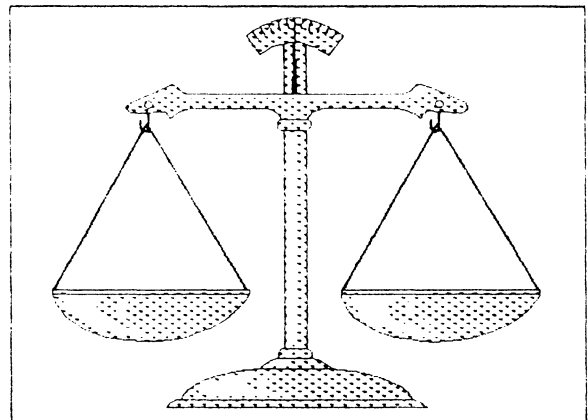
Reflecting on this particular project it seems as if there are at least four specific areas that must be addressed;

- 1 The value that society puts on parks and wilderness needs to be examined;

Should this entire area be preserved as a wilderness area or;

Has enough of this particular landscape and ecosystem type already been set aside in adjacent areas?

- 2 The technical aspects of environmental protection need to be resolved. What degree of environmental degradation, beyond responsible reclamation, can we accept? Some will say - none. Reality dictates that some level of impact must be expected. What is acceptable?



Where Is The Balance?

- 3 Public attitudes towards industrial development, the environment and the economy require clarification. Is it necessary or desirable to put the concept of a pristine environment ahead of reasonable living standards?
- 4 The entire issue of land use and investor confidence must be addressed. When an area is open for mineral exploration and staking there must be reasonable assurance that mine development will be accommodated.

Wilderness, to some members of the public, seems to have an intrinsic value just by being there. People who will never see it support the idea that some areas be preserved in their natural state. There is also the thought that some areas should be preserved for future generations. There seems to be the thought that parks and wilderness can be created and that there will be no social costs. Is this one of those areas or will the costs be too high? Some firm decisions need to be reached.

Man is a natural part of the environment. Man's activities have an impact on the environment. With the current population levels and with the increasing demands being placed on our limited resources it is not realistic to expect that the natural environment will not be altered. The real question is - "what are acceptable levels of environmental impact". If you think about it animals, such as the beaver, have significant environmental impact when they build dams and flood forests and farm lands.

Public, and particularly the urban public, attitudes towards industrial development tend to be negative yet most people want all of the benefits of an industrial society. The fundamental problem is generally a lack of knowledge. Both government and industry must improve the public's knowledge in these areas and make full use of the sophisticated conflict resolution techniques that are available to help arrive at balanced decisions. The key is to start the conflict resolution process at the beginning of a project, not after the problem of lack of public support has developed.

British Columbia has a land use policy. The province has been divided into Parks, Wilderness Areas, Recreation Areas, Provincial Forests, Community Watersheds and other designations and the rules for mining exploration in these various areas have been set. In the case of Windy Craggy the area is still legally open to mineral exploration and the staking of mineral claims. The mechanisms are in place to provide the necessary protection to the environment and the public. The Mine Development Review Process provides the opportunity for government scientists, the public and environmental interest groups to review and debate the benefits and environmental effects of the project.

In addition to all of the foregoing the project is now being subjected to international pressure. International organizations and citizens of other countries are telling British Columbians to forego the economic benefits of development in order to preserve wilderness for the enjoyment of the privileged few.

Two quotes from the Brundtland Commission Report, "OUR COMMON FUTURE" may be enlightening.

"Economic growth and development obviously involve changes in the physical ecosystem. Every ecosystem everywhere cannot be preserved intact..... As for non-renewable resources, like fossil fuels and minerals, their use reduces the stock available for future generations. But this does not mean that such resources should not be used."

"The network of protected areas that the world will need in the future must include much larger areas brought under some degree of protection."

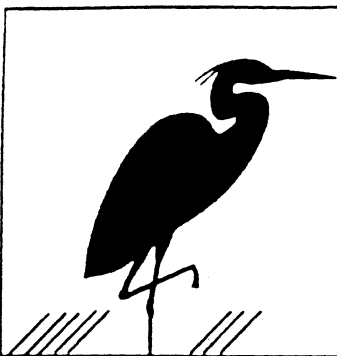
In our reading of the full text three points are made;

- 1 Man's efforts to sustain himself will have an impact on the environment.
- 2 Man requires an adequate supply of natural resources to survive.
- 3 While environmental protection is essential total protection of extensive areas is not essential to man's survival nor, for that matter, the survival of natural systems.

In the light of the evidence it is past the time to move forward with the Windy Craggy project and to bring the process to a logical conclusion.

B.C. Environmental Information Institute
December 11, 1991

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Box 5253
Vancouver, B.C.
V6B 4B5
Tel: (604) 683-5133
Fax: (604) 685-4697

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WINDY CRAGGY

MAR - 3 1993

Geological Survey Branch
MEMPR

C.O.R.E. REPORT HOLLOW!

The Issue Is Land Use

The report on the Tatshenshini/Alsek land use issue was released in early January by the Commission on Resources and Environment. A careful review of the report gave rise to a feeling that the report was incomplete - something was missing.

Volume one of the report purports to provide detailed background information, an analysis of land use objectives and options which lead to some conclusions. Volume two contained the Appendices which consisted of 3 background reports. The report appeared to be subtly slanted towards the wilderness option but most of the information respecting potential economic development appeared to be included, BUT was it all there?

Then the Light Went On!

C.O.R.E. had concentrated almost exclusively on the technical aspects of bringing Windy Craggy into production and the advantages of preservation. They had not dealt with the broader issue of developing all the economic resources of the area as opposed to wilderness preservation. They had not dealt with how the resources of the area could benefit the average taxpaying British Columbian. C.O.R.E. had not dealt with the land use issue!

Windy Craggy is just one of several potential mines in the area. On page 16 of the report the statement is made;

"Geological mapping by the Ministry of Energy, Mines and Petroleum Resources, based on field surveys conducted in the summer of 1992, indicated a belt of ore-rich rock about 7 kilometres wide, extending south from the vicinity of Windy Craggy Mountain. A preliminary assessment concluded that the belt contained several copper ore deposits of a similar magnitude to that discovered at Windy Craggy."

The report goes on to indicate that if these new deposits can be brought into production the values increase considerably. Additional, but as yet unconfirmed, information indicates the new deposits may be from 5 to 10 times the magnitude of Windy Craggy. It must also be made clear that the full mineral potential of the area has not yet been determined.

A Point Not Made!

Nowhere in the C.O.R.E. report was the point made that the mineral deposits in the Haines Triangle - the Tatshenshini - are truly unique and of world class. Windy Craggy has the potential to provide 1% of world copper demand by itself. If the other potential mines come on stream the potential is immense.

It must also be pointed out that in the economic analysis that was done only the economic impact of Windy Craggy was considered. No analysis was done with respect to the total mineral potential of the area.

Neither was it mentioned that if the full mineral potential of the area is considered the life of the mine will not be 20 years but can be extended to 40 years, 60 years or even longer.

Wilderness Not Unique

The point is made several times that if the Haines Triangle is joined to the Kluane National Park, Glacier Bay National Park and the Wrangle-St. Elias National Park it will form the largest wilderness park of its kind in the world. All of this huge area contains wilderness of a similar type to the Tatshenshini. In fact you can travel for hundreds of kilometres in B.C., the Yukon and Alaska in similar wilderness.

The point must be made that Tats Creek, the location of Windy Craggy and much of the mineralized zone, is not a unique wilderness. It is a very small speck in a huge wilderness area of similar type.

Minimal Impact!

The C.O.R.E. report casually talks about preserving the Tatshenshini - Haines Triangle as a protected wilderness area. It also suggests that permitting a mine in one part of it will destroy the wilderness experience and adversely impact the existing biodiversity. Let's take a look at how big an area we are talking about.

It is an area twice the size of the Province of Prince Edward Island. If you include the Tatshenshini with the Kluane National Park, Glacier Bay National Park and the Wrangell-St. Elias National Park you have an area about the size of the Province of Nova Scotia.

The portion to be utilized by the Windy Craggy Mine amounts to 1/10 of 1% of the 1,100,000 hectares in the Tatshenshini/Alsek - Haines Triangle. If the total mineral deposit were developed no more than 1 % of the total area would be utilized. This amounts to 11,000 hectares out of over 1 million hectares. A small portion indeed.

Suggesting that a mineral development taking up less than 1% of the total area will seriously impact the biodiversity of the area is a bit far fetched.

The Land Use Debate

Suggesting that mining may have some adverse effects is valid. This however is a technical issue that is covered by the Mine Development Review Process. It should not be an overriding element in the land use debate.

C.O.R.E. has offered 3 options;

The Preservation Option

The Mining Option

The Delay Option

The Delay Option is not a legitimate option. This is nothing more than defacto preservation. The issue is should the area be preserved as a wilderness park or should economic development be permitted or should we consider a combination of the two?

Considering the immense size of the area ZONING is a distinct option. The map on page 41 of the report identifies areas of - Very High, High, Medium and Low mineral potential. This map clearly introduces the option of zoning but C.O.R.E. has elected to ignore this option.

It is also important to recognize that the Haines Highway cuts through the middle of the Tatshenshini - Haines Triangle. Primary access already exists. Why has C.O.R.E. not explored the full tourism potential of the area?

If the area is as unique and attractive as the proponents of the wilderness option suggest are we to consider a world class tourism development attracting thousands of tourists? Should this include trail rides, All Terrain Vehicle safaris, mountain bike routes, guided hunts, arctic ski adventures, along with the established river rafting and what have you?

Considering the size of the area, the mineral potential and the potential for tourism is ZONING not a distinct option? Why has C.O.R.E. elected to rule out this very viable option in favour of preservation?

Is the goal to kill Windy Craggy without looking at the overall potential of the area? It appears possible that this is the hidden agenda.

A Smelter Proposal

One of the elements we had a concern with was the shipment of the copper concentrate off shore for smelting. Why does B.C. not have a copper smelter, considering the volume of copper being mined in the province?

In January of 1992 the Ministry of Economic Development, Small Business and Trade circulated an "Information Memorandum" titled BRITISH COLUMBIA COPPER SMELTER OPPORTUNITY. This memorandum outlined the opportunity for a copper smelter in B.C. The selected location is Kitimat and a major potential source of raw material is listed as Windy Craggy. None of this information was discussed in the C.O.R.E. report on the Tatshenshini/Alsek. Why?

The Foreign Influence

A major issue is made of the international interest in the area. In fact the C.O.R.E. report suggests that if the area is preserved as wilderness the United States and our own Federal government should make some sort of economic contribution to B.C. Considering the economic situation in the United States it would appear unlikely they would contribute. As far as our own federal government making a contribution is concerned would this not be just adding to our own tax burden?

Perhaps the international community should be invited to get their nose out of our business. British Columbians should make land use decisions that serve our interests, not the interests of foreign extremists. It is time for British Columbia to begin by making its own decisions. Tapping the economic potential of the Tatshenshini would be a good first step!

Some Conclusions

The C.O.R.E. report concentrates more on calling into question the technical feasibility of Windy Craggy and extolling the virtues of wilderness preservation than exploring the social and economic potential of this world class mineral deposit to British Columbia.

If one Windy Craggy has the potential to provide direct employment for 500 people and generate 8.5 billion dollars worth of mineral what is the potential of 5 or 10 Windy Craggy's combined with a smelter at Kitimat employing 450 people. The social and economic impact on British Columbia could be enormous. And we could enjoy this benefit by utilizing only 1% of the area in question. Most of the remaining 99% would remain pristine.

Action

Government needs to be made aware of the shortcomings of the C.O.R.E. report.

The Institute has submitted the attached letter to Premier Harcourt with copies to Commissioner Stephen Owen and to Ann Edwards, Minister of Energy, Mines and Petroleum Resources. We would encourage you to write a letter to government supporting our position.

If possible you should obtain a copy of volume 1 of the report and read it prior to responding. If you do not have the time feel free to use the information in this and our previous report on Windy Craggy. A letter to your M.L.A. and to your local paper may also be in order.

INSTITUTE LETTER

**The Hon. Mike Harcourt, Premier,
Parliament Buildings,
Victoria, B.C.,
V8V 1X4**

Dear Sir,

The report by the Commission on Resources and Environment with respect to Tatshenshini/Alsek Land Use has failed to address the issues fully.

This report has not included an economic assessment of the full mineral potential of the area. It has not included the added benefits of processing the copper concentrate at the proposed smelter in Kitimat. It has not explored the full tourism potential of the area from an economic perspective and it has not provided a realistic assessment of the biological impact that developing approximately 1% of the area may have.

This report fails to address the fundamental issue which is land use. Should the area be used or preserved in whole or in part? The report fails to put forward the concept of ZONING the area which is such an obvious solution. The report is more of a technical critique of the Windy Craggy project than it is a balanced land use assessment.

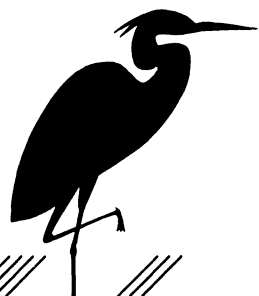
On the basis of the information at hand with respect to the mineral potential of the area and the potential of a new smelter at Kitimat it is evident the social and economic benefits to B.C. could be enormous. The benefits of new sources of real wealth and new sources of government revenues have been glossed over.

It is recommended that government come forward with a balanced proposal to develop the mineral potential of the area in concert with a plan to preserve the main wilderness values of the Tatshenshini/Alsek area. Considering the magnitude of the area it should not be difficult to devise a plan that will satisfy our need for economic development and wilderness preservation. Zoning of the Tatshenshini - Haines Triangle is clearly a solution that would be acceptable to most British Columbians.

Yours truly,

**J.H.Carradice, ASCT
Executive Director**

YES → POST



MEMBERS' BULLETIN

Box 5253
Vancouver, B.C.
V6B 4B5

B.C. ENVIRONMENTAL INFORMATION INSTITUTE

**An Organization Dedicated to Common Sense and Responsible
Natural Resource Management.**

FEB 22 1996

Geological Survey Branch
MEMPR

February 21, 1996

WINDY CRAGGY

Hello Madam Ombudsman Are You There?

Windy Craggy - one of the richest mineral deposits in the world is now part of a provincial park and a World Heritage Site. It is also part of the Champagne - Aishihik First Nation land claim. In the process of making its decision government expropriated legally acquired mineral claims owned by 24 separate claim holders, ignored the 50 plus million dollars spent by Geddes Resources in exploring and confirming this extraordinary mineral resource and generally rode rough shod over the mining industry and individual property rights.

Did Government Follow Due Process?

In August of 1993 the B.C. and Yukon Chamber of Mines asked the Provincial Ombudsman, Ms. Dulcie McCallum, to conduct a formal review of the process followed by government in expropriating Windy Craggy. In a letter dated December 14, 1993 the Ombudsman's office confirmed that they would undertake a formal investigation. To date there has been no report on this issue from our Provincial Ombudsman.

What Are The Issues?

In addition to the fact that mining companies had spent many years and many millions of dollars in legally exploring the area for minerals just to have their work and money wiped out at the stroke of a government pen, there appear to be some fundamental flaws in the process.

- 1 The mineral claims in the area had been legally staked.
- 2 Windy Craggy was allowed by government to proceed to the Mine Development Assessment Process and in January 1990 Geddes Resources filed a detailed report.. This very costly process resulted in a 5 volume report providing in depth information on the project.

This highly scientific report was used by the opponents of the project to mount a campaign of misinformation using selected bits of information and other information out of context.
- 3 In 1992 government directed the Geological Survey Branch of the Ministry of Energy, Mines and Petroleum Resources to undertake a 2 year study of the mineral resources of the Tatshenshini - Alsek area. In the first field season they discovered 5 new copper occurrences. Four of these were in the immediate vicinity of Windy Craggy and were of major significance. Early in 1993 government shut the project down claiming they already had sufficient information on the area.
- 4 Government referred the Windy Craggy project to the Commission on Resources and Environment for review in July of 1992. The C.O.R.E. report was tabled in January of 1993. This report was tabled as an "Interim" report and it was immediately labelled as badly flawed by experts in the mining industry. No opportunity had been provided for the public to participate in the process. It was entirely an internal C.O.R.E. job.

A major flaw was the failure to consider the full mineral and economic potential of the area as revealed by the government survey.
- 5 At the time the area was designated as a provincial park, June 1993, no formal process had been established to address the issue of compensation for the expropriation of the legally held mineral claims from the 24 separate claim holders involved.
- 6 In December, 1994 Chief Birkel of the Champagne - Aishihik First Nation (CAFN) was told by government that "Windy Craggy" was just a promotion and the mineral deposit was minimal. This immediately preceded the government's application to have the park designated as a World Heritage Site by UNESCO.

The primary issues are that in spite of legally staked mineral claims, approval to go forward with the Mine Development Review Process, an incomplete geological survey, a flawed C.O.R.E. report and misinformation being provided to the Champagne - Aishihik First Nation involved with the area, government cancelled the project, expropriated the claims without compensation, declared the area a park and moved forward with World Heritage Site designation.

The Course of Action

When government made the decision to cancel the Windy Craggy project and make a park out of the area involved, a course of action was initiated by the B.C. and Yukon Chamber of Mines on behalf of the mining sector. The course of action decided upon was to ask the Ombudsman to review the process followed by government.

The sequence of events -

June 22, 1993	Park designation by government.
August 17, 1993	The B.C. and Yukon Chamber of Mines (BC&YCM) make a formal appeal to the Ombudsman.
December 14, 1993	The office of the Ombudsman confirms that it will undertake a review.
February 24, 1994	The BC&YCM provide the Ombudsman with a detailed report covering their concerns.
October 25, 1994	The BC&YCM wrote to the Ombudsman expressing concern that government was not cooperating in providing necessary information to the Ombudsman.
December 5, 1994	Chief Birckel advised by government that Windy Craggy was "all promotion" and "a flash in the pan".
December 9, 1994	Start of UNESCO meeting where the Tatshenshini - Alsek Park, containing Windy Craggy and other important mineral deposits, was proposed as a World Heritage Site. World Heritage Site designation granted on December 16, 1994.
January 5, 1995	BC&YCM wrote another letter to the Ombudsman expressing concern with the delays.
January 24, 1995	The BC&YCM was advised by the Ombudsman's office that the Ombudsman expected a response from government by month end.
June 14, 1995	The BC&YCM writes to Ted Hughes, the Conflict of Interest Commissioner, asking for his intervention in this issue.

June 23, 1995	Ted Hughes writes back indicating he has no jurisdiction in the matter but stating that he had a conversation with the "Ombudsperson" Ms McCallum and that she would prepare a progress letter for the BC&YCM.
	No progress letter was ever received.
October 2, 1995	Meeting with Mr. Brent Parfitt of the Ombudsman's office. One of the topics was the misinformation provided by government to the Champagne and Aishihik First Nation. This meeting was a fact finding meeting with no conclusions.
November 10, 1995	The BC&YCM sent a facsimile transmission to the Ombudsman's office by way of a follow up to the October 2, 1995 meeting. This Fax was not responded to.
January 12, 1996	A BC&YCM representative had occasion to meet with senior representatives of the Champagne and Aishihik First Nations. He was advised that to date they had not been contacted by the Ombudsman's office on this issue.
January 14, 1996	The BC&YCM wrote a detailed letter to the Ombudsman questioning the excessive delay in dealing with this issue.
February 12, 1996	To date there has been no response from the Ombudsman.

Over Two Years Have Gone By!

It is now over two and one half (2-1/2) years later and our Provincial Ombudsman has not filed a report. What is the delay? We have heard the Ombudsman criticize other organizations for being slow in responding to legitimate concerns. Why has the Ombudsman spent over two years on this case with no end in sight?

With respect, this Institute requests a formal response to the concerns and questions set out by the B.C. and Yukon Chamber of Mines and urges our members and readers of this "Bulletin" to contact the Ombudsman and ask for a reply.

For the Ombudsman to continue to blatantly ignore this issue, undermines the credibility of the office of the Ombudsman and raises questions about its neutrality and impartiality. This is wrong!!

BRITISH COLUMBIA

A Resource Based Economy

The 1994 British Columbia Financial and Economic Review makes good reading. It is unfortunate this report is always a year or two out of date but that seems to be the nature of statistically accurate reports. This report, prepared by the Ministry of Finance and Corporate Relations and signed off by The Hon. Elizabeth Cull, Minister of Finance and Corporate Relations, clearly spells out the structure of our provincial economy. In a "nut shell" this document states that British Columbia is totally dependent on the natural resource industries and foreign exports. As this is an incontrovertible fact, why do we have such a difficult time convincing government and the public, especially the urban public, that our resource industries are of primary importance?

Some quotations from this report are significant:

Page 65 - Industrial Structure and Performance -

"The province's rich endowment of natural resources and their development form the backbone of British Columbia's economic structure. The economy is largely based on primary and secondary forestry production. Other natural resource sectors, such as agriculture, mining and fishing (including aquaculture) also contribute significantly."

"In total, the goods producing sector,....., produced 28.2% of the provinces total out put...."

"Service producing industries generated a total output of \$57.6 billion in 1993, 71.8% of total provincial gross domestic product."

Then comes a key statement that is of paramount importance:

".... Without the incomes and profits generated by the goods-producing sector, the province's service industries would be much smaller."

Another important statement is made on page 66:

"The importance of natural resources in the British Columbia economy has influenced the composition of the province's service industries. For example, transportation services are highly dependent on the movement of forest and mineral products to foreign markets, while business services, such as customs brokerage, have emerged to facilitate export flows."

When you consider that the service sector includes transportation, consulting services, banking and finance, insurance, legal services, communications, storage, wholesale and retail trade and a host of other services to the goods producing sector the truth becomes obvious. Without our primary economic drivers the service sector will not and cannot sustain our economy. In fact when you consider that sectors such as health and education are included in the service sector as "contributors" to the Gross Provincial Product it becomes evident that a major portion of the so called service sector is a net drain on our economy.

Value Added

A topic of significant interest is "value added" manufacturing in the forestry sector. We have been of the belief that the forestry sector has been addressing this issue for some time. This report seems to support this opinion.

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"... In recent years, there has been less emphasis on the production of commodity-grade lumber products and more emphasis on value-added lumber products such as furniture components and door and window stock."

Mature Timber Volumes

Another topic that has been quite controversial is the volume of mature timber remaining in the province. Some sources would have us believe that we are in danger of falling our last tree. This report addresses this issue and provides some startling statistics.

132 Years Supply of Mature Timber.

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Table A4.1 Volume of Mature Timber, 1993

Coast	3.061 billion cubic meters
Interior	<u>5.527</u> billion cubic meters
Total	8.588 billion cubic meters

At the present rate of harvest, approximately 65 million cubic meters per year, this volume of mature timber will sustain us for 132 years without moving into any of our current second growth stands.

This is a truly astounding statistic. It is not, however, completely realistic. If you consider the constraints being placed on the harvesting of timber by the Forest Practices Code, harvesting economics and the effects of fire, insects and disease over the next 100+ years it is doubtful if 8.5 billion cubic meters of timber can be harvested. The actual volume of timber that is available for harvesting will probably be closer to 1/2 to 2/3 of this amount. It is, however, encouraging to know that the end is not in sight in spite of the doom and gloom type of misinformation being propagated by some environmental zealots.

Tourism

Tourism continues to play an important role in our provincial economy and has an important role to play in the future. The accord recently signed between the tourism sector and the forestry sector is certainly a positive move. There is no doubt that a positive, cooperative approach will pay off for both industries. However, somewhat like the service sector, tourism statistics are deceptive. A quote from this report is enlightening.

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"Overnight trips increased 1.8% in 1993 bringing the total number of trips to 24.4 million. British Columbia residents continued to be the largest group of travellers, accounting for 67.9% of trips taken in the province and 52.4% of the tourism revenue generated. ..."

A major portion of this travel is related to the goods producing industries and to the forestry sector in particular. Without the contributions being made by the goods producing industries in the way of travel by sales, service and supervisory people the tourism picture would not be quite so bright.

Average Weekly Earnings

A comparison of average weekly earnings in the various sectors of our economy is informative. When you compare how these earnings have changed over time they provide an indication of the direction in which society is moving.

Table 3.4 - Average Weekly Earnings - page 58

	<u>1988</u>	<u>1993</u>	<u>% Increase</u>
	(Dollars)		
Logging and forestry	671.29	785.49	17.0%
Mines, quarries and oil wells	823.46	969.28	17.7%
Manufacturing	565.44	689.61	21.9%
Construction	527.72	609.51	15.5%
Average - Goods producing Ind.	585.68	695.80	18.7%
Transport, communications etc	640.63	760.53	18.7%
Trade	352.78	429.72	21.8%
Finance, insurance and real est.	498.05	635.74	27.6%
Community, business and personal	379.38	466.71	23.0%
Public administration, civil servants	570.72	775.62	35.9%
Average - Service sector	423.65	520.55	22.9%

If you examine Public administration it is apparent that wages in the government sector have risen disproportionately between 1988 and 1993. Trade rose by \$76.94 whereas Public administration rose by \$204.90. Logging and forestry rose by only \$114.20 over this same period. This is significant.

Over this five year period Public administration, including the civil service, rose from being below the average for the goods producing sector to \$79.82 per week above the average in the goods producing sector. The indications are that this trend is continuing.

When the regulators make more money than the producers you have a problem.

Conclusion

This government publication is a very useful document. It's a shame government doesn't read it.

F.P.C.

Forest Practices Code Timber Supply Analysis Report

On February 19, 1996 the Ministry of Forests and the Ministry of Environment Lands and Parks released a new report on the projected impacts of the Forest Practices Code on the rate of timber harvest. In the briefing prior to the release of the report it was stated that the average negative impact across the province would be on the order of 6% and that this would vary between regions from between 3.2% and 9.2%, with the 9.2% impact being on the coast.

It was suggested that in order to stay within the 6% guideline the application of the code would require some policy changes and very practical, local decision making. There will be more on this to follow once there has been time to digest the report.

Please make as many copies of this
"Bulletin" as is necessary to distribute to
senior staff and/or elected representatives.
THANK YOU

J.H. (Jack) Carradice - Executive Director
Phone/Fax - 858-7789

The Opinions Expressed In The Bulletin Are
Not Necessarily Those Of The Directors.
