

A black and white photograph of a stone statue of a man with a beard, wearing a long robe and holding a book. The statue is set in a classical architectural niche with columns and a pediment. The background shows the facade of a building with arched windows.

ANNUAL REPORT

MINISTRY OF ENERGY, MINES AND PETROLEUM RESOURCES

1992/93



PROVINCE OF BRITISH COLUMBIA



*To
The Honourable Anne Edwards
Minister of Energy, Mines
and Petroleum Resources*

Minister:

*I have the honour to submit the Annual Report
of the Ministry of Energy, Mines and Petroleum
Resources for the period of April 1, 1992 to
March 31, 1993.*

A handwritten signature in cursive script that reads "Brenda Eaton". The signature is fluid and elegant, with a large initial 'B' and 'E'.

*Brenda Eaton
Deputy Minister*



*To
The Honourable David C. Lam
Lieutenant-Governor of British Columbia*

May it Please Your Honour:

*I respectfully submit the Annual Report of the
Ministry of Energy, Mines and Petroleum
Resources for the period of April 1, 1992 to
March 31, 1993.*

*Anne Edwards
Minister*

1992/93 ANNUAL REPORT

Ministry of Energy, Mines and Petroleum Resources

Mission

The Ministry, acting on behalf of present and future British Columbians, ensures that the Province's energy and mineral resources are developed and used in a safe, efficient and environmentally sound manner for the economic benefit of the Province.

Core Values

In pursuit of its mission, the ministry adheres to the following core values:

- **Efficiency and Effectiveness**

We strive to ensure that the taxpayers' money is used carefully and that the public receives the maximum benefit from our programs and activities.

- **Service Quality and Excellence**

We strive to achieve the best possible performance in the delivery of our services to the general public, industry, elected officials and Cabinet.

- **Open Communications**

We deal openly with our clients in a courteous, responsive and helpful manner.

- **Staff Commitment**

Our achievements depend on our people. We are committed to employment equity and will continue to develop the knowledge and expertise of our staff to enhance service to our industry clients and to members of the public.

TABLE OF CONTENTS

The Years Highlights

Energy	1
Minerals	2

Our Resources at a Glance

Energy	4
Minerals	5

Ministry Accomplishments

Jobs and the Regions	7
Good Government	13
Planning	19
Resource Management	23
The Environment	32
Energy Efficiency	36
Client Service	37

Appendix

Ministry Overview	45
Legislation	46.....
Ministry Expenditures	47
Ministry Contacts	48.....

ENERGY

Industry Activity

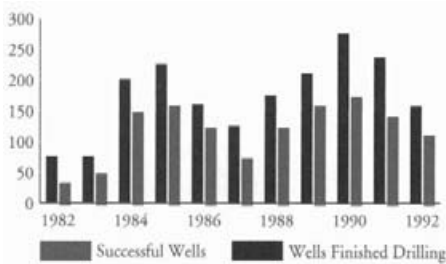
- The number of producing natural gas wells in the province rose to more than 885, an all-time record, and 50 more than the previous year.
- Oil and gas industry expenditures stayed at the previous year's level of \$1.1 billion while drilling activity declined, with continuing emphasis on core properties rather than riskier "frontier" areas.
- Natural gas production and exports maintained their upward trend, with favourable markets in B.C. as well as the U.S. Pacific Northwest, Ontario and California.
- Electricity production and export were at a higher level than in the previous two years with electricity exports reflecting both streamflows and market conditions.
- The B.C. Utilities Commission issued guidelines for electric and natural gas utilities to implement cost-effective, integrated resource planning.

Ministry Accomplishments

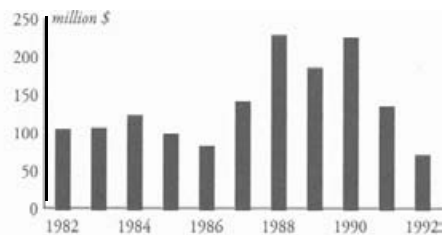
- A new government policy was announced to provide opportunities for private power development in B.C.
- Three long-term natural gas export sales received energy removal certificates.
- The B.C. Energy Council was created to advise on specific energy issues, beginning with long-term electricity exports, and to develop a provincial energy plan.
- Consultation with First Nations and the public in the province's project review processes (both energy and minerals) was enhanced.
- The ministry (energy and minerals) took part in provincial land use planning processes including Commission on Resources and Environment (CORE) and the Protected Areas Strategy (PAS).

WA new multi-agency review process for oil and gas tenures came into effect.

- Three small hydroelectric power plants, a natural gas pipeline and an electricity transmission project were approved under the Energy Project Review Process.
- A new policy for domestic natural gas supply was introduced.
- The ministry carried out a number of initiatives to promote cleaner alternative transportation fuels.
- The province's energy **efficiency** standards for new appliances and equipment were enhanced.
- Ministry audits resulted in the collection of \$6.7 million in additional energy and mineral revenues for the benefit of British **Columbians**



Oil and gas drilling activity fell in 1992



Mineral exploration investment has fallen from its peak years of 1988 and 1990

MINERALS

Industry activity

- B.C.'s mineral sector continued to face depressed prices and strong global competition.
- Exploration spending continued a downward trend with most activity **centred** around existing mines.
- The coal industry completed a major restructuring in 1992 that witnessed the **Westar** Mining bankruptcy, the Fording Coal **labour** dispute, and ownership changes at four of eight mines.
- Three mines closed permanently, and one new mine opened.

- Economic recovery, lower interest and exchange rates, and several new mining projects under provincial review will improve the industry outlook for 1993/94 and beyond.

Ministry Accomplishments

- A new Mineral Strategy was announced to revitalize the B.C. mining industry.
- Two major new mineral deposits and two extensions to existing mines were approved for production under the newly formalized Mine Development Assessment Process.
- The minister led a trade mission to Japan and Korea to promote B.C. coal, minerals and energy.
- The government managed the **Westar** Mining bankruptcy, providing community assistance and helping with resale of the coal mines.
- Industrial minerals were jointly promoted by the ministry and B.C. Trade Development Corporation.
- Two forums were held on participation of Aboriginal peoples in mining.
- Ministry geologists increased their focus on land use planning.
- A multi-year geological project was started to define B.C.'s mineral potential at the regional level.
- British Columbia's Health, Safety and Reclamation Code was revised, including a new threshold limit on respirable combustible dusts.
- The ministry launched a review of acceptable financial instruments for holding mine reclamation security.
- Research continued to address the environmental and safety problems of acid mine drainage and waste rock dump stability.
- A public brochure on landslides was produced, as part of a series on natural hazards and emergency preparedness.

OUR RESOURCES AT A GLANCE¹

ENERGY

Facilities:

Producing oil wells	692	Producing natural gas wells	886
Electric power plants	88	Biomass facilities	14

Reserves²:

Domestic oil	17.3 million m ³	Hydroelectric power	10 000 MW
Marketable natural gas	239.2 billion m ³	Energy from wood residue	900 MW

Production³: Total 909 PJ

Oil	2.0 million m ³ \$260 million	Natural gas	17.8 billion m ³ \$619 million	Electricity	63.6 TWh \$1.8 billion
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Domestic use³: Total 821 PJ

Oil	9.0 million m ³ \$3.6 billion	Natural gas	7.0 billion m ³ \$939 million	Electricity	57.3 TWh \$2.7 billion
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Trade: Total 88 PJ

Oil	7.0 million m ³ \$910 million	Natural gas	8.7 billion m ³ \$470 million	Electricity	6.8 TWh \$194 million
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Oil and gas activity:

Total wells drilled	157	Successful wells drilled	94
Geophysical crew weeks worked	144	Net industry expenditures	\$1.1 billion

Regulatory:

Oil & gas tenure dispositions	245	Electricity ERCs issued	1
Natural gas ERCs ⁴ issued	93	Energy projects approved	5
Projects under review ⁵	21		

Revenue:

Oil royalties	\$53.9 million	Fees, rentals, etc.	\$29.4 million
Tender bonuses	\$39.6 million	B.C. Hydro payment	\$244 million
Natural gas & by-products royalties	\$73.9 million		

Employment: Total -25 000

One gigajoule (GJ)

- = 278 kilowatt-hours
- = 0.16 barrels of oil
- = 915 cubic feet of natural gas
- = 29 litres of gasoline
- = 940 000 British Thermal Units (Btus)
- One GJ will:
 - light your house for three months
 - power your car for 250 kilometres

One terrawatt hour (TWh)

- = 10⁶ kw.h
- B.C. produced 63.6 TWh of electricity in 1992

One petajoule (PJ)

- = 1 million gigajoules
- = 278 gigawatt-hours
- = 163 500 barrels of oil
- = 915 million cubic feet of natural gas
- = 940 billion Btus
- The City of Vancouver uses about one PJ of energy every day

One megawatt (MW)

- = 1 million watts
- = 1 000 kilowatts
- Total installed electricity generating capacity in B.C. is 13 000 MW

MINERALS

Facilities:

Major operating metal mines.....	14	Major operating coal mines	8
Industrial minerals operations	36	Sand & gravel pits	2 000

Production: Total \$2 534 million

Copper.....	316 million kg \$892 million	Gold.....	16 million g \$219 million	Other metals	— \$326 million
Coal.....	18 million tonnes \$747 million	Industrial minerals	— \$45 million	Structural materials	— \$305 million

Metal markets: Total \$1 433 million

Canada \$302 million	Asia.....	\$974 million	Europe	\$96 million
USA.....	Other.....	\$23 million		

Coal markets: Total 18.0 million tonnes

Canada	0.8 million tonnes	Asia	14.0 million tonnes
Europe.....	1.9 million tonnes	USA.....	0.6 million tonnes
Other.....	0.7 million tonnes		

Activity:

New renews ⁶	7 512	New mines	1
Free miners certificates issued ⁶	5 490	Mine closures	3

Regulatory:

Inspections.....	2 859	Notices of work	1 769
Mine projects approved.....	4	Projects under review ⁷	15

Revenue:

Taxes revenue ⁶	\$5.5 million	Mineral royalties.....	\$29.7 million
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Employment: Total 14 200

Major metal mines	4 700	Major coal mines	3 500
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¹ All data for calendar year 1992

² At December 31, 1992

³ Does not include coal, wood waste, pulping liquors and other energy sources

⁴ Energy Removal Certificate

⁵ At March 31, 1993

⁶ Fiscal year 1992/93

MINISTRY ACCOMPLISHMENTS

The ministry's mandate is to ensure that B.C.'s energy and mineral resources are developed and used in a safe, efficient and environmentally sound manner for the sustained economic and social benefit of the province, its regions and communities. To meet that mandate, we perform day-to-day administrative and regulatory duties to manage provincial resources. We also develop proactive policies and programs to serve the government's wider economic and social objectives. In what follows, our accomplishments for 1992/93 are outlined under some key government and ministry goals-jobs and the regions, good government, planning, resource management, the environment, energy efficiency and client service.

JOBS AND THE REGIONS

One of the government's pivotal goals is to pursue a strong, diversified economy with opportunities for all regions. The ministry supports this goal through proactive policies to ensure a competitive resource sector. We create and initiate procedures to regulate resource development and use in a timely, efficient manner. We supply information on energy and

mineral resources, so that industry can better target exploration and development activity. We also promote mineral exports, fund research and infrastructure, and take action to protect resource communities.

Jobs and Investment

B.C.'s energy and mineral industries provide a source of highly skilled jobs and economic spin-offs. There are opportunities for job creation through new development and "value-added" investment to upgrade our raw resources. Much attention was focussed in 1992/93 on the competitiveness of the B.C. mineral sector.

Energy

Oil refinery strategy prepared In March, the ministry completed a discussion paper on the state of the B.C. oil refining industry. The paper looked at the impacts of Lower Mainland refinery closures on employment, consumer prices, oil field activity and other areas of concern. Employment losses were estimated at up to 350 jobs. Policy options to address the closures will be discussed with other ministries in 1993/94.

Private power policy released. Minister Anne Edwards announced a new policy on Independent Power Producers (IPPs) in October. This policy makes sure that private sector proposals for new electric power plants are evaluated in the same way as B.C. Hydro projects. Electricity consumers will benefit from a competitive bidding process to select the lowest cost (including environmental costs) electricity resources. Encouraging private power generation will create jobs and investment in B.C.'s regions.

New natural gas pipeline to go ahead. In June, the Surrey-Langley gas pipeline project was approved under the province's Energy Project Review Process. The 24-kilometre pipeline will carry natural gas to the Vancouver Island gas pipeline, as well as to local gas users. Aside from being a source of construction jobs, the pipeline is a major investment in infrastructure for the rapidly growing Lower Mainland.

Fraser Valley transmission project approved. This project will provide electricity transmission reinforcement in the Fraser Valley. It includes an upgrade of the Clayburn substation near Matsqui. Jobs and environmental quality were major issues in B.C. Hydro's extensive public consultations. Approval was granted in March.

Minerals

Mineral Strategy announced. In March, the minister announced a new plan to revitalize the B.C. mining industry. A Mineral Strategy for British Columbia sets out goals to restore mineral exploration, improve industry competitiveness, and add value to our mineral resources. This strategy provides an agenda of actions covering land use planning, resource management, Aboriginal interests, economic development and other key priorities. It will be circulated for comment to industry, the public and other government agencies.

Four mine developments approved. This year saw the first mining projects certified under the province's newly formalized Mine Development Assessment Process. Two of the four projects approved in 1992/93 were major new mine developments: the Mount Polley copper-gold project east of Williams Lake and the Stronsay lead-zinc project in northeastern B.C. Another six projects were in advanced stages of review, including the Eskay Creek gold-silver project northwest of Stewart. Together with the approved developments, these proposals represent potential for over 1 000 new jobs during mine operation.

Task force on mineral investment

climate. Ministry staff contributed to a series of studies by the federal Mineral Industry Task Force on Canada's Investment Climate. These studies on competitiveness and taxation issues are meant to guide the development of mineral policy. In September, the Task Force reported its findings at the 49th Annual Mines Ministers' Conference in Whitehorse.

Industry competitiveness studies.

Building on the task force work, the ministry launched its own competitiveness study for the B.C. mining industry. A major part of the study compared provincial taxes with those in other provinces and countries. Although not conclusive, the results suggest that B.C.'s competitive position has slipped compared to other jurisdictions. The government will look for ways to redress this problem, while meeting other provincial goals such as sound fiscal management.

"Whitehorse Initiative" on industry

future. The province is taking part in a national initiative on the future of mining which emerged from the September Mines Ministers' Conference. This effort will define the issues facing Canada's mining industry and provide some direction for its future development. Input will be gathered from all

jurisdictions, in cooperation with industry and other stakeholders.

Studies on rail costs and coke plant.

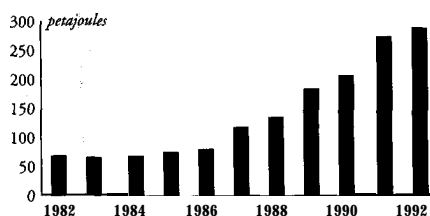
As part of its Coal Strategy, the ministry commissioned a study on the rail costs of shipping coal from southeastern mines to Vancouver terminals. The study showed that, per dollar paid to the railway, coal shippers paid more of the system costs than shippers of other products. Another ministry-sponsored study investigated markets for a new coke manufacturing plant in B.C. According to the report, if coke prices rise substantially in response to expected coke shortages, coke making will provide an opportunity for adding value to B.C. coal.

Promotion of industrial minerals.

The ministry and B.C. Trade Development Corporation launched a new joint initiative to promote development of industrial minerals. B.C. is richly endowed with some 18 of these minerals including granite, limestone, gypsum, garnet and talc. Promotional activities will be carried out in B.C., the Pacific Rim and Europe to attract investors and develop markets. Initial efforts will focus on dimension stone and manufactured refractory and ceramic products.

Trade Opportunities

Exports of energy and minerals generate jobs and government revenues, and improve the efficiency with which resources are developed and used. The ministry regulates all energy exports to ensure that domestic needs are met first and that environmental impacts are fully accounted. We also actively promote exports through trade missions, market studies and other efforts.



Natural gas exports have been expanding in the wake of deregulation

Energy

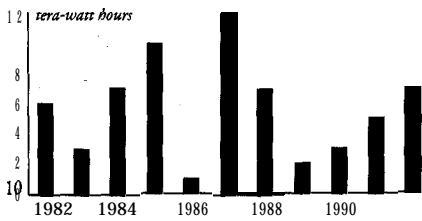
Three long-term gas export sales approved. In November, the ministry issued two long-term energy removal certificates (ERCs). Excel Energy Inc. received approval for a 15-year gas sale to a combined electric cycle power plant in the US. Northeast, representing a cumulative export volume of 119 million cubic metres. Canadian Hydrocarbons Marketing Inc. received approval for a 10-year sale to a gas distributor in northwest Washington

State for 1.0 billion cubic metres. In December, CanWest Gas Supply Inc. was issued a 15-year ERC of 1.44 billion cubic metres for export to a cogeneration (power and heat) facility in Bellingham, Washington.

Restructuring of gas supply for export. Gas deregulation rules in California forced a restructuring of the long-term contracts between Canadian producers and Alberta & Southern (A&S) Gas Co. Ltd., a gas aggregator serving 40 percent of the northern California market. Negotiations between A&S and individual B.C. producers began in April. Ministry officials took part in talks on a government agreement with Alberta and the California Public Utilities Commission. At fiscal year-end, the restructuring process was still going on.

Short-term electricity exports approved. In September, a five-year Energy Removal Certificate was issued to B.C. Hydro and its export subsidiary, POWEREX. This ERC authorizes continued exports of short-term firm and interruptible electricity from B.C. Hydro's system. The export of surplus power provides revenues to both B.C. Hydro and the province. It also makes for more efficient use of the hydroelectric system, as power

output varies from year to year depending on streamflows.



C.'s net electricity exports vary from year to year with streamflows and market conditions

Long-term electricity export policy review. In June, the government's new advisory agency, the B.C. Energy Council, launched a review of provincial policy on long-term firm electricity exports. These exports represent an untapped opportunity, in particular for private power developers. To date, the issue of long-term firm exports has never undergone a comprehensive public review. The Council issued an interim report in December, with a final report and recommendations expected for early 1993/94.

Options for Columbia Riverpower.

The Columbia River Treaty signed in 1961 allowed for the coordinated development and operation of Canadian and U.S. portions of the Columbia River. B.C. is entitled to one-half of the extra U.S. power produced downstream as a result of

upstream Canadian storage dams. These downstream power benefits (DSBs), sold under long-term contract to the U.S., are due to be returned to the province starting in 1998. Ministry officials are involved in ongoing international discussions to decide on the best use of the DSBs from a provincial viewpoint.

Minerals

Minister visits Japan and Korea. In December, the minister led a six-day trade mission to Japan and Korea, where she promoted B.C.'s coal, minerals and energy. A key objective was to show support for the province's coal industry to Japanese steel producers and government leaders. The mission also let potential investors know of the government's interest in a proposed copper smelter for B.C.

Foreign coal subsidies and GATT.

Coal subsidies in Germany and other western European countries shut B.C. producers out of an important market. In some cases, the subsidies approach \$100 (\$U.S.) per tonne. The province continued to pressure the Canadian government to work, through the General Agreement on Tariffs and Trade (GATT) negotiations, to reduce foreign coal subsidies. Lobbying also focussed on the federal government's

monetary policy which has kept the Canadian dollar high and coal export prices low.

Regional Development

Energy and minerals stimulate economic growth throughout B.C., from the corporate centres of the Lower Mainland to exploration and development in remote northern areas. The ministry supports regional development through research funding and community assistance. As in the past fiscal year, considerable effort in 1992/93 went to helping distressed coal communities in the province's Southeast region.

Energy

No finding for natural gas extensions.

In previous years, the Power and Gas Extensions Program (PGEP) provided subsidies for extending gas service to rural areas. PGEP is meant to lower consumer energy costs, promote economic development and clean energy, and reduce reliance on imported oil. In 1992/93, the program was not funded because of the province's higher spending priorities. Instead, provincial ministries, gas distributors and local communities pursued alternative funding routes.

Interest in coalbed methane. There is growing interest in coalbed methane; that is, natural gas found in coal seams. Recent ministry estimates place the province's coalbed methane potential at over 4.2 trillion cubic metres, some six times our total reserves of conventional gas. This year, **Norcen Energy Resources Ltd.** drilled one test well in the Elk Valley (Mist Mountain Formation), but abandoned operations after poor production rates. In early 1993, **Fording Coal** also drilled a well in the Elk Valley in an attempt to produce coalbed methane for its local mine.

Minerals

Coal **strategy** proceed. The ministry worked on a strategy to help in solving the problems facing the British Columbia coal industry. In June, a Coal **Strategy News Update** presented the results of public forums held in **Sparwood** and **Tumbler Ridge**. The well-attended forums produced a range of views from industry, **labour** and the public on industry competitiveness, new markets and the coal industry's image. In other coal-related business, the ministry appointed a mediator for the **Fording Coal** strike which lasted from May until the end of December.

Managing Westar bankruptcy.

Throughout the summer, financial and

labour difficulties continued to plague Westar Mining, owner of the Balmer and Greenhills coal mines. In July, a special provincial Job Protection Commissioner recommended remedial measures ranging from tax relief to community assistance. When Westar went bankrupt in September, the ministry helped coordinate social services and retraining in Elk Valley communities. Later, we helped with resale of the mines to Teck Corporation (Balmer, now Elkview) and Fording Coal (Greenhills).

Cassiar mine closure. After more than 40 years of production, the Cassiar (McDame) asbestos mine shut down in February 1992, laying off over 300 workers. The government responded by providing assistance to local residents through house buybacks, relocation allowances, retraining and counselling. The minesite and assets have since been bought by an Australian company that plans a smaller-scale operation.

Geoscience for economic development.

An important element of the government's new Mineral Strategy is a targeted geology program to combat the serious decline in B.C.'s base metal (e.g., copper and zinc) reserves. The program has an economic development focus, designed to help prospectors and

mining companies find new resources. Three projects were conducted under the Mineral Development Agreement: northern Vancouver Island, the Interior Plateau (southwest of Prince George) and the northern Quesnel Trough (Aitken Lake). The latter two projects were jointly planned with complementary geophysical and mapping projects by the Geological Survey of Canada.

Mineral Development Agreement.

The federal-provincial Mineral Development Agreement is designed to coordinate efforts to strengthen and diversify B.C.'s mineral sector. Under the current \$100-million agreement (1991-1995), funding is provided for enhanced geoscience programs, technological research, demonstration projects and strategic institutional studies. In 1992/93, a total of \$1.2 million was spent in areas ranging from geoscience projects and acid mine drainage research to Aboriginal involvement in mining.

GOOD GOVERNMENT

Government that serves the needs of British Columbians at lower cost and with greater effect is a key policy priority. The ministry works to make its operations more streamlined and

efficient. We strive for more openness in our policies and procedures, through public consultation and access to information. We advance the government's goal to forge a new relationship with First Nations. We also make sure that the province shares in energy and mineral revenues, in the interest of publicly-owned resources and government-wide fiscal management.

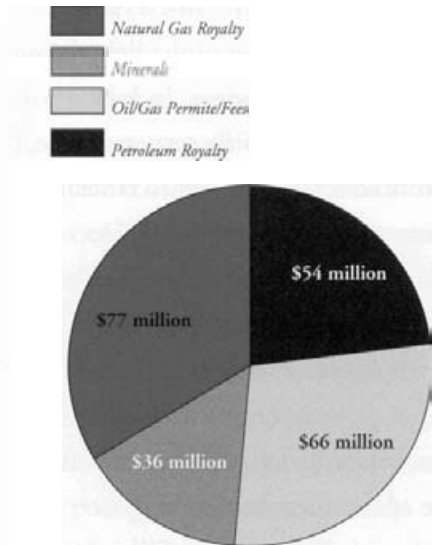
Efficiency

The ministry makes all efforts to ensure that our programs and processes run smoothly and cost-effectively.

Improvements are continually sought in the delivery of service to clients in industry, government and the public. A good organizational structure and efficient working environment are also important for employee productivity.

New head office nearing completion.

Construction proceeded on the Jack Davis Building which will consolidate eight of the ministry's Victoria offices into one headquarters. The new building will combine energy efficient and "employee friendly" design including high, state-of-the-art lighting, showers, a bike lockup, a barrier-free floor layout and other features for persons with disabilities. It is scheduled to open in July 1993.



The ministry collected some \$233 million in energy and mineral revenues in 1992/93

Management structure review. The ministry's management hierarchy was reviewed to see where layers could be cut to flatten the reporting structure and increase delegation. On the basis of this review, the ministry will implement some restructuring in early 1993/94

New Environmental Assessment

Process. The government is developing legislation that will combine the existing review processes for new resource developments—the Energy Project Review Process and the Mine Development Assessment Process—into one larger, comprehensive Environmental Assessment Process. The new process will provide "one-stop shopping" for project proponents,

and will allow for more consultation with the public and Aboriginal groups. In 1992/93, the ministry began work on integrating its review processes into the larger scheme.

Ministry-BCGEU joint committee formed. The new collective agreement with the B.C. Government Employees Union calls for more emphasis on ongoing management-union consultation. As a result, in 1992/93 the ministry established a joint committee with BCGEU representatives. The committee meets on a monthly basis to resolve issues before they become disputes.

Acting on Korbin Commission Review. The Korbin Commission review made recommendations on converting the status of on-site contract workers to full government employees. To meet the government's objectives in this area, the ministry reviewed all contract positions and converted a limited number of them to full employees.

Cost-cutting measures. The ministry has been taking action to cut discretionary spending and expand the number of functions that are cost-recovered. In 1992/93, grants for extending natural gas service under the Power and Gas Extensions Program

were not provided. The ministry also reduced its fleet by 38 percent.

Energy

Automated accounting for titles revenue. The ministry implemented a new computerized system called "PARS" (Petroleum Accounts Receivable System) for keeping track of revenues from oil and gas tenures. The system now accounts for \$63 million in revenues.

Minerals

Title data system enhanced. In February 1992, the ministry completed its three-year TITLES 2000 project to modernize information systems for recording mineral titles and mapping claims. Up-to-date mineral tenure information is now readily available on the Mineral Titles Data Administration (MiDA) system at over 60 offices around the province. In the summer, a number of enhancements were made to MiDA including setting up a Helpdesk for tracking system problems and adding over 3 000 reverted crown granted mineral claims to the database. This computerized system provides better service to industry and government clients.

Efficient resource assessments. Under the government's Protected Areas Strategy (PAS), the ministry introduced new mineral assessment policies that will significantly reduce costs and staff time (see section on Planning). Cost savings over the next ten years are estimated at \$20 million overall.

Open Government

Open government means better access for the public to both information and decision making. It also means greater accountability on the part of provincial agencies. In 1992/93, the ministry supported the government-wide Freedom of Information initiative and worked on procedures to enhance public consultation.

Improving freedom of information.

The ministry developed a strategic plan to prepare for the upcoming Freedom of Information and Privacy legislation. As well, a Freedom of Information manager was hired. The government legislation is scheduled to be proclaimed in October 1993.

Energy

Enabling participant funding.

Participant assistance provides funding support to interest groups and the public, so that they can take part in government consultation and public

hearings. A committee chaired by ministry officials developed guidelines to be used in assessing requests for participant assistance across government. The guidelines released in March set out eligibility criteria for receiving assistance, as well as a listing of eligible expenses. The ministry has an ongoing role as a contact for the guidelines' interpretation.

Minerals

Consultation in mine project reviews.

The new *Mine Development Assessment Act* contains stronger provisions for public and Aboriginal consultation in project reviews. During 1992/93, consultation was enhanced with the use of public advisory committees for two projects under review, Eskay Creek and the Hedley Gold Tailings proposal. These committees provided a forum for ongoing dialogue between the mining company and the public throughout project development.

First Nations

Advancing the government's goals with respect to First Nations is the responsibility of the ministry's new Aboriginal Affairs Unit. The unit participates in land claim negotiations by supplying resource assessments in affected areas, ensuring the role of First Nations in exploration and closure activities, and

promoting opportunities for First Nations in the resource sector. The Energy and Minerals Divisions sections, responsible for the review of major projects, also consult with Aboriginal groups on all new proposals.

Involvement in project reviews. Under a 1991 B.C. Supreme Court ruling, the ministry must consult with Aboriginal groups on energy and mining projects proposed in areas traditionally used for hunting, fishing, cultural or social activities. In practice, the ministry routinely goes beyond the minimum “fiduciary obligation”. Ministry staff are often called upon to inform First Nations about regulatory and review procedures, and to provide resource information. Where requested, staff will also act as facilitators for the private sector and Aboriginals in arriving at agreements on contracting, training and employment opportunities. In 1992/93 Aboriginal groups were consulted regarding 16 energy and mine development proposals.

Energy

Seven energy resource assessments performed. During 1992/93, the ministry provided assessments of oil, gas and geothermal energy potential for the following Reserve and land claim areas: Tahltan, Liard River, Fort

Ware, Ingenika Point, Sechelt, Nisga'a and Blueberry-Doig.

Minerals

In 1992/93, the ministry received nine new mining proposals. Consultation on these projects took place with the Ktunaxa/Kinbasket, Cariboo, Kaska Dena, Carrier-Sekani, Carrier-Chilcotin, and Nlaka'pamux Nation tribal councils and their appropriate member bands.

Aboriginal involvement in mining.

Two one-day forums were held on Aboriginal participation in mining, one in December and the other in March. The first forum brought together representatives from Aboriginal groups, the mining industry and the government to gain a better understanding of their various perspectives and policies with respect to mining. The second was attended by First Nations and ministry representatives and resulted in a draft Memorandum of Understanding.

Federal-provincial working group.

The ministry takes part in an intergovernmental committee, chaired by the federal government, to find concrete ways to increase Aboriginal involvement in the mineral sector. Staff provided information for the

committee's fourth report released in September. Among other things, the report documents successful examples of Aboriginal involvement in mining and profiles of people working in the industry,

Advisory group on Nisgaa negotiations.

The mining industry has a strong interest in the ongoing Nisgaa negotiations which could set precedents for provincial land claim settlements.

In September, an advisory group was formed to keep industry apprised of progress in the negotiations. Interests represented on the committee include the Mining Association of B.C., B.C. and Yukon Chamber of Mines, several mining companies, and B.C. Hydro. The group meets monthly to hear reports from provincial and federal negotiators.

Revenue

B.C.'s energy and mineral industries are an important source of government revenue, accounting for more than \$1 out of every \$10 collected by the provincial Treasury. The ministry assesses and collects various royalties, rentals, fees and other revenues. Revenue levels are set to adequately compensate British Columbians, as owners of the resources, while not placing an undue financial burden on industry.

Energy

Self-funding of B. C. Energy Council.

Under its own enabling legislation, the new B.C. Energy Council is allowed to "self-fund" through a levy charged to public utilities. As approved in December, the levy rate was set at \$0.004 per gigajoule of gross utility energy sales to recover the year's \$1.5-million budget over the remainder of 1992/93. The levy will ultimately be passed on to utility customers, amounting to less than one dollar per year per customer.

Some oil and gas rentals increased. In May, the annual rentals for petroleum and natural gas permits and drilling licenses were increased by 50 percent and 40 percent, respectively. These rentals had remained unchanged since 1982. The recent adjustments were made to account for inflation and rate increases in other jurisdictions. No changes occurred to the rentals for oil and gas leases.

Special Directions on B. C. Hydro earnings. Cabinet is empowered, by law, to issue "special directions" to both B.C. Hydro and the Utilities Commission. In November, Special Directions #2 and #8 to the Commission required that an appropriate rate of return on equity

be set for B.C. Hydro to determine the annual dividend be paid to the province. This requirement was meant to ensure British Columbians a reasonable return on their investment in the Crown corporation..

Petroleum audits performed The ministry performs audits to ensure that resource royalties are paid in compliance with legislation. Each month, there are about 125 payers of oil and gas royalties from about 800 production facilities. In 1992/93, the ministry validated each report and completed 14 field audits, generating additional revenues of \$2.3 million. The payback to the province on oil and gas audits is greater than 8: 1.

Minerals

Mineral titles fees and rentals up.

The recording and maintenance fees and lease rentals for mineral titles were increased in July. This increase puts B.C. on par with fees charged in other jurisdictions. Until this time, mineral titles fees and rentals had been unchanged since 1964.

Property tax relief for mine access

roads. Mine access roads, which connect minesites to public highways, are generally built and maintained by mining companies themselves. Unlike

other resource industries (i.e., forestry and petroleum), companies have been required to pay full property taxes on these roads, without being able to recoup any of their costs from non-mining users. Faced with low profitability, industry singled out property taxes as a major component of its fixed tax burden. In recognition, the spring 1993 Budget exempted mine access roads from property taxation.

Mineral audits performed. The ministry receives around 100 mineral tax returns annually, half of which are from operators of producing mines. In 1992/93, 28 desk reviews and eight field audits were completed, yielding extra revenues of \$4.4 million. The payback ratio to the province on mineral audits exceeds 20: 1.

PLANNING

Changing public values with respect to land use and the environment are altering the way in which resource decisions are made. The government has made a commitment to better land use planning and integrated resource management. In support of that commitment, the ministry takes an active role in provincial resource management and land use planning processes. We provide mineral and

energy resource inventories and information on administrative and regulatory procedures. We “sit at the table” to ensure that energy and mineral interests are effectively represented and adequately balanced with forestry, recreation and other values. In addition, the ministry pursues comprehensive energy planning that weighs the broad economic, environmental and social values and impacts of energy resource development.

Energy Planning

Comprehensive energy planning means considering the broader impacts of all resource options, including conservation and energy efficiency. It also calls for effective public involvement up-front in the planning process. A significant accomplishment in 1992/93 was the creation of a new energy planning agency,

B.C. Energy Council created. The ***Energy Council Act*** was proclaimed in June, establishing a new advisory agency to the minister. As part of its responsibilities, the B.C. Energy Council will prepare a provincial energy plan based on public consultation. The plan will provide general direction regarding energy supply and energy efficiency options for the province. It will also help guide

government decisions on specific new energy developments.

Integrated resource planning launched.

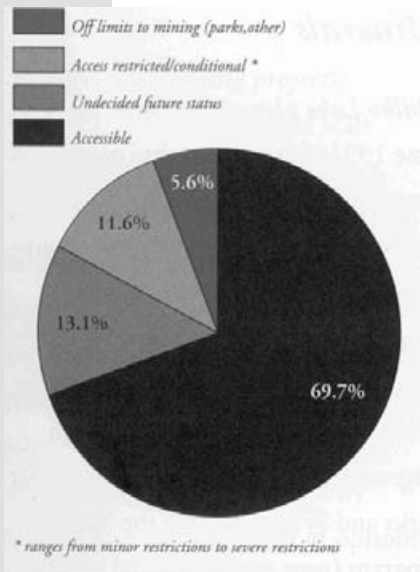
In February, the B.C. Utilities Commission issued guidelines for electric and natural gas utilities to implement integrated resource planning. Under these guidelines, utilities will be submitting resource plans that put demand-side resources on an equal footing with conventional supply options. The ministry will have a role in evaluating utility plans, through a review process conducted by the Commission. Ministry staff are also helping to develop a social costing methodology to rank resources in B.C. Hydro’s plan, with possible future use for other utility integrated resource plans (see section on the Environment).

Land Use Planning

A new Land Use Section within the ministry coordinates the ministry’s involvement in various planning processes around the province. The 1992/93 year was largely one of establishing a presence on technical evaluation and planning committees and redirecting staff to perform the work required for specific processes, in particular CORE, Forest Land

Management Planning (FLMP), and PAS.

Commission on Resources & Environment (CORE). CORE was created in January 1992 to develop a province-wide resource management and land use plan, and undertake planning at the regional level. Early on, the ministry took part in preparing CORE's principles for fully-integrated, consensus-based land use planning. Later, regional processes were initiated for three priority areas: Vancouver Island, the Kootenays and the Cariboo/Chilcotin region. Ministry staff worked on these planning processes along with other government representatives.



* ranges from minor restrictions to severe restrictions

B.C.'s land base accessible to mineral exploration is shrinking, but more than 85 percent remains available for staking

Forest Land Management Planning (FLMP). FLMP is the subregional component of the provincial land use plan. This planning scale considers all resource values and requires public participation, interagency coordination and consensus-based land and resource management decisions. There are a number of FLMP's currently underway in the province

Protected Areas Strategy (PAS). In May, the government announced its intent to set aside 12 percent of B.C. for the protection of the province's diverse cultural heritage and recreational values. So far, Cabinet has approved 197 study areas to be considered for protected status. Throughout 1992/93, senior ministry officials were involved in developing a strategy for achieving cabinet's 12 percent protected area goal. Ministry regional staff were represented on seven regionally-based interagency management committees which reported to the senior committees.

Other land use planning The ministry was also represented in local planning initiatives related to protected areas and resource management issues. These included the Clayoquot Sound Sustained Development Strategy and the Chilko Lake Planning process.

Ministry staff reoriented. Staff priorities were redefined to deal effectively with these planning processes. The Geological Survey's district geologists and Victoria staff spent more time on land use issues. Both mineral and petroleum geologists devoted considerable effort to resource assessments for the PAS study areas.

Energy

Oil and gas resource assessments.

Evaluations of oil, gas and geothermal energy potential were made to help with CORE, other planning processes and PAS evaluation. The assessments completed in 1992/93 were for the Prophet River and Sikanni Chief Old Growth Areas and the Bullmoose-Sukunka-Grizzly and West Clarke-Milo production areas. Energy data were also compiled for the three regions in the CORE mapping project (see next section on Minerals).

New oil and gas tenure review process.

In May, a new process went into effect that provides for multi-agency reviews of oil and gas tenure requests. This process allows provincial agencies to identify areas where exploration access will conflict with other land uses, and to ask for conditions on that access. The new tenure referral system will let industry plan its exploration activity

more effectively. The public will benefit from better environmental and land use planning.

Oil and gas rights in protected areas.

The ministry developed interim guidelines to manage oil and gas tenures in the PAS study areas. The guidelines prohibit new tenures from being issued in categories 1 and 2 study areas, but allows them in categories 3 and 4 study areas. Any proposal for exploration or development must be referred to a regional protected areas committee for an enhanced referral process. The new guidelines are meant to ensure that exploration work goes ahead, where it can do so without compromising other land use values.

Minerals

Chilko Lake planning process. Since June 1991, the ministry has co-chaired a study of the Chilko Lake area southwest of Williams Lake; other co-chairs include the Nemiah Valley Indian Band and the Ministry of Environment, Lands and Parks. Chilko Lake, an area of high mineral potential, had been targeted under the government's earlier Parks and Wilderness for the 90's program (now replaced by PAS). The study team worked on a draft land use proposal that is scheduled for public review in June. The Chilko Lake study

marks the first time that the ministry has taken a lead role in a land use planning process.

Mineral potential mapping project.

Ministry geologists launched a new three-year project to produce regional scale (1:250,000) maps of B.C.'s mineral potential. This innovative project is part of an interministry initiative to produce up-to-date resource information for CORE and other planning processes. In April, a workshop was held in Victoria to determine a methodology for preparing the mineral potential maps. Maps were then prepared for the Vancouver Island, Kootenay and Cariboo/Chilcotin regions currently under CORE planning.

Subregional mapping projects.

Mapping at the subregional scale (1:50,000) is also performed on a selective basis for land use initiatives. Ministry geologists carried out a project to map the Tatshenshini area in B.C.'s extreme northwest corner. This region contains the Windy Craggy copper deposit. Information on mineral potential was needed by CORE in its development of options to cabinet for the area.

Mineral rights and protected areas.

The ministry conducted a study to

identify mineral, coal and placer tenures located within the PAS study areas. In November, an order was passed preventing new tenures from being established in categories 1 and 2 PAS study areas while claim-staking is still permitted in categories 3 and 4 study areas. Existing tenures were not affected by the order. The ministry developed interim guidelines for and enhanced review of any work proposals within all study areas, similar to those established for oil and gas rights.

Mineral tenurepolicy review.

During 1992/93, the ministry began a review of tenure reform possibilities to better mesh with other land use and resource management policies. The review was later identified as part of the Mineral Strategy released in March (see section on Jobs and Investment). It is expected to lead to a public consultation process and eventual reform of the ***Mineral Tenure Act.***

RESOURCE MANAGEMENT

Central to the ministry's mandate are some core administrative and regulatory duties designed to ensure that energy and mineral resources are developed and used for the overall social good. We produce resource inventories and evaluations for use by government,

industry and the public. We manage Crown energy and mineral rights to promote exploration and development, while protecting the public interest. We also regulate resource development and use to see that it is efficient, orderly, safe and environmentally sound.

Resource Evaluation

High quality, timely and comprehensive resource data are needed to better target industry exploration activity.

These data are also important inputs into government regulation, management of resource rights, land use planning, revenue collection and policy making. A highlight of 1992/93 was the redirection of ministry geological work towards land use planning and economic development concerns.

Energy

Oil and gas evaluations. In 1992/93, ministry geologists evaluated about 290 oil and gas wells to map their subsurface geology and quantify hydrocarbon reserves. Nine new gas fields were designated: **Brazion**, **Buckinghorse**, **Chowade**, **Thunder Mountain**, **Redwillow River**, **Red Deer**, **Milo**, **Moose** and **Briar Ridge**. Major geological evaluations were completed in the **Southern Foothills**, **Northern Foothills** (**Pocketknife-Buckinghorse**), **Buick Creek-Rigel** and **Oak-Owl** oil

and gas plays, and in the **Aitken Creek** gas storage and oil zone. Significant schemes for **conservation** and recovery were reviewed in the **Beaver River**, **Wildmint**, **Owl** and **Adsett** fields.

Minerals

Geological mapping activity. To provide information for land use planning, a multi-year project was started to update the province's obsolete regional scale (1:250,000) mineral potential maps (see section on Planning). Subregional scale (1:50,000) mapping programs include the **Stikine**, **Tatlow** (Coast Mountains) and **Tatshenshini** areas of northwestern B.C. After seven years, the **Peace River** coal field mapping project was completed, with a total of fourteen 1:50,000 map sheets produced. To address the growing need for geological information in urban settings, surficial mapping was conducted for southeastern Vancouver Island and the Gulf Islands, and aggregate potential was mapped for Squamish.

Regional geochemical surveys. Since 1976, the Geological Survey Branch has carried out regional stream sediment and water sampling in areas of high base and precious metal potential. The geochemical data produced by these surveys are used in mineral

exploration, environmental studies and land use planning, The 1992 Regional Geochemical Survey program featured the release of geochemical data for areas covering more than 50 000 square kilometres of southwestern B.C. Also, an extensive survey was conducted of the Skagway, Yakutat and Tatshenshini areas in the province's extreme Northwest.

Other geoscience work. Examples of other geoscience activity during the year include:

- a placer program to locate buried deposits in the Cariboo, using radar and follow-up drilling to test ministry models of placer deposition;
- drift prospecting studies at the Highland Valley Copper mine and Galaxy property, both near Kamloops, to help develop exploration techniques for drift-covered terrains; and
- assessments of mineral potential for graphite deposits in the Coast Plutonic Complex and talc in the Rockies.

Resource Rights

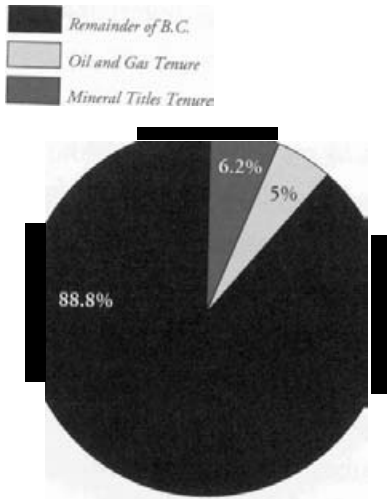
The ministry manages Crown mineral, coal, petroleum, natural gas, underground storage and geothermal energy rights in the province. We administer title to Crown resources in a clear,

efficient manner to encourage industry exploration and development. At the same time, we protect the public interest by ensuring that tenure is disposed of with proper concern for other land and resource uses, impacts on the environment and economic benefit to British Columbians.

Energy

Regulation for drilling licenses amended. In April, the petroleum and natural gas drilling licence regulation was amended to allow the terms of licences to be extended under certain circumstances. Specifically, the minister can now extend a drilling licence to permit the completion of environmental or socioeconomic studies, public hearings or investigations.

Permit awarded for geothermal exploration. In B.C., exploration for geothermal energy-or energy from hot water and steam trapped beneath the ground-has focussed on the Upper Lillooet River area near Pemberton. In February 1992, a permit was awarded to explore on the north slope of Mount Meager for up to eight years, depending on the fulfillment of a program of work commitments accepted by the ministry as a condition of awarding the permit.



About 11 percent of B.C.'s land base is currently covered by some form of oil and gas or mineral tenure

Minerals

Claim staking activity. Claim staking activity was down by 20 percent in 1992/93. The main area of new staking interest was the Christina Lake/Rosland area, where diamonds were the exploration target. The release of regional geochemical survey data for an area stretching from the North Thompson River to Mount Waddington in south-central B.C. led to an estimated 830 claims staked. Two new areas were opened up for placer claim staking, Bob Creek in the Omineca Mining Division and Owl Creel in the Lillooet Mining Division.

Misuse of mineral tenures. A number of mineral tenures throughout B.C. are being held for purposes other than

mining such as for recreational or residential sites. The ministry inspects such cases and, where an abuse exists, takes action to cancel the title or recommend that the use of the surface be restricted. New owners of mineral and placer tenures located on a lake or creek were notified by letter of the rights and limitations associated with mineral tenures. In addition, more than a dozen titles were cancelled due to inappropriate use.

Claim staking disputes resolved Under the **Mineral Tenure Act**, the ministry is responsible for reviewing and resolving disputes between free miners. In 1992/93, 87 new complaints were received. This represents a decrease of 57 percent in complaints received over 1991/92, reflecting the increased visibility of ministry inspectors and greater enforcement of regulations. In total, ten actions were initiated against free miners, resulting in the suspension of ten certificates.

Opening reverted Crown land. The ministry continued its policy of opening lands covered by reverted Crown granted mineral claims (RCGs) to normal staking. A total of 788 lots were disposed of in two dispositions held in June and October. Staking of these lands is now permitted, subject

to compliance with *the Mineral Tenure Act* and regulations.

Cream Silver loses appeal for compensation. B.C.'s Court of Appeal overturned a lower court's ruling and denied Cream Silver Mines Ltd. any compensation for 106 claims located in Strathcona Park. Since 1973, all mineral exploration in Class 'A' provincial parks has been frozen. The court decision held that mineral claims were a chattel interest in land and, as such, were not subject to compensation under the *Park Act*. Further, the court determined that mineral claims recorded after a park was created were not entitled to compensation.

Resource Development and Use

As one of its key responsibilities, the ministry conducts referral and approval processes for new energy and mining developments. We oversee production and ensure that provincial consumers are guaranteed secure energy supplies. We also set and enforce standards governing health and safety, environmental protection and mine reclamation.

Energy

Energy projects in review. At fiscal year-end, over 20 electricity generation, natural gas and power transmission

projects were at various stages in the province's Energy Project Review process. Government review activity continued at a strong pace from 1991/92, due to numerous proposals for private power projects. Three hydroelectric projects received approval during the year: **Doran** Lake at Port Alberni (5 megawatts), **Morehead** Valley Ranch at Williams Lake (62 kW) and Mamquam near Squamish (50 MW). In addition, the **Surrey-Langley** natural gas pipeline and Fraser Valley transmission reinforcement projects were approved.

Kemano review announced In

January, the Premier announced that a public review would be held for **Alcan's** Kemano completion project in which Alcan plans an expansion of its existing hydroelectric facilities. The Utilities Commission will conduct hearings to assess the project's impact on river hydrology, fisheries, Aboriginal communities and other issues.

Fraser Valley drilling approved Last year, the government restated its policy not to allow drilling for underground storage of natural gas in the Fraser Valley. Permission was given for the drilling of one gas exploration well in East Delta. This year, Conoco Canada Ltd., BC Gas Inc., and Dynamic Oil Ltd. received approval to drill two

exploratory wells in the Langley area. Stringent conditions have been placed on the drilling including extensive groundwater and noise monitoring, prompt site reclamation and a local-area public advisory council.

New rules for domestic natural gas supply. In November, the minister announced a revised policy framework for B.C.'s natural gas utilities, marketers and consumers. The new Domestic Natural Gas Supply Policy replaces the province's 1988 Core Market Policy. It gives smaller consumers more flexibility in arranging their own gas purchases, while ensuring that security of supply is preserved. In March, the Utilities Commission released new rules to implement the policy, including a requirement for marketers and utilities to maintain a minimum four-year rolling gas supply for core market (residential, commercial and small industrial) customers.

Minerals

Mineprojects in review. During 1992/93, nine submissions were made to the province's newly formalized Mine Development Assessment Process. Four developments were approved: the Mount Polley copper-gold project near Williams Lake, the Line Creek coal

mine extension, the Hedley gold tailings project and the Stronsay lead-zinc development in B.C.'s northeast. At year-end, there were 1.5 projects in either the application or pre-application stage of the process.

2 881 mine inspections made. The ministry inspects mineral and coal mines, exploration sites, placer mines, rock quarries and sand and gravel operations. These inspections cover all aspects of health and safety, environmental and mine reclamation concerns. Health and safety inspections are carried out by specialists in mining, mechanical and electrical engineering and occupational hygiene.

Health and Safety Code update. B.C.'s Health, Safety and Reclamation Code, proclaimed in 1990, contributes to mining's record as the safest heavy industry in the province. The *Mines Act* requires that a committee review the Code annually to ensure that it keeps abreast of changes in technology, workplace hazards and public environmental concerns. The first annual review, completed in early 1992, was conducted by a tripartite committee of labour, industry and academic experts, chaired by the ministry's Chief Inspector of Mines. A revised version of the Code was released in April.

Mine safety audits Launched. In late 1992, a program of mine safety audits was initiated to evaluate the safety programs in place at all major mining operations. The audit allows recommendations to be made for improving safety programs, so that the frequency and severity of mine accidents can be reduced. Audits were completed at the Gibraltar and Byron Creek mines,

Accident reporting system improved.

The ministry's new computerized Mine Accident Reporting System (MINACC) provides comprehensive reports on mining-related accidents and dangerous occurrences, for use by mine managers and the Chief Inspector of Mines. In the summer, workshops were held with several mines to gather comments on this innovative software. Based on industry suggestions, a new version of MINACC was released in February with an on-line help system and fewer accident codes. Over 40 people attended training sessions at different locations across the province to learn the systems new features.

Emergency preparedness plans

completed During 1992/93, the ministry finalized emergency preparedness plans for providing additional aid and assistance to mines when an emergency occurs. The plans include

valuable information for mines about how to set up organizational structures and procedures for use in emergencies. Regional mine rescue stations are located at Fernie, Kamloops, Smithers and the Victoria airport. These stations are under the supervision of the Regional Office Administrator/Resident Engineer in each region and the Mine Emergency Preparedness Coordinator in Victoria.

Mine rescue competitions. The ministry sponsors mine rescue and first aid competitions that simulate actual emergencies in open pit and underground mines. Westar Mining's Greenhills operation, Cominco's Sullivan mine and Fording Coal's Fording River mine were the winners in this year's provincial competition held in Fernie in June.

Highland Valley tops safety awards.

Awards are presented annually by the ministry to those operations with the lowest frequency of injury in various categories based on hours worked per year. In 1992, the Highland Valley Copper mine won the John Ash Award for the safest open pit operation running at more than a million worker-hours per year. Highland Valley Copper also received the Occupational Health and Safety Committee trophy, as the mine with

the best overall health and safety program. The winners in other safety award categories were International Corona Corp., **Steelhead** Aggregates Ltd., and Continental Lime Ltd.

Health impacts of diesel emissions.

Over the past several years, **ministry** staff have researched the effect on workers' health of particulate emissions from diesel engines, with a **special** focus on underground mines. In an underground environment, there are substances classified as "respirable combustible dusts"—for example, organic vapors from drill lubricating oils, spilled diesel fuel and **micronic** fractions of coal dusts—which add to these **particulates**. In the revised Health, Safety and Reclamation Code issued in April, **respirable** combustible dusts **were** assigned a threshold limit value to control worker exposure. B.C. appears to be the only mining **jurisdiction** in North America to limit this particular group of contaminants.

Runaway truck crash test. On June 2, a **100-ton** haul truck **was** deliberately crashed into 20 stacks of tires filled with crushed rock at the Bell Copper mine. The purpose was to test the effectiveness of the tire barrier, designed by a mine employee, in **stopping** large mining trucks when their brakes fail. Ministry staff organized

the test which went smoothly and produced **favourable** results.

B.C. innovation wins national award

J.S. Redpath Ltd., a mining contracting firm, won an award for best innovation at the Occupational Safety and Health '92 Conference. The company developed a portable refuge station that can save lives in underground mine emergencies. The "Mobile Safety Base" comes equipped with piping to hook up telephones, lights, water and compressed air. **Development** assistance was provided under the federal-provincial Mineral Development Agreement.

Mine reclamation to date. Since 1969, B.C. mining companies have been required by law to reclaim **all** lands disturbed by mining. Major **coal** and metal mines now cover **a** total of 32 247 **hectares** in the province, compared to less than **200** hectares in the late 1960s. **Of this** total, 9 418 hectares (29 percent) have been reclaimed. Most of the remaining disturbance consists of active mining **areas** that cannot be reclaimed until mining has ended.

Reclamation security held. All mines operating in B.C. must deposit money **with** the government to ensure that reclamation costs do not fall on provincial taxpayers (i.e., if a mining

company goes bankrupt). In the past few years, the value of security deposits has increased to reflect more closely the true costs & reclamation. The total value of securities held by the province rose from about \$10 million in 1985 to \$102 million at year-end 1992. Despite this increase, several provincial mines remain underfunded for their planned reclamation work.

Review of security instruments. Under current policy, the ministry accepts reclamation security in the form of cash, certain types of bonds and other financial instruments that meet general government guidelines. The mining industry has suggested that the range of acceptable security be expanded to include new and innovative instruments such as charges on assets and RRSP-type tax-sheltered funds. In 1992/93, the ministry launched a review of security instruments and “reclamation risk,” forming a committee from industry and the Ministries of Environment, Lands and Parks, and Finance and Corporate Relations. The committee released an interim report in March, with final recommendations expected in 1993/94.

Reclamation at specific mines. Activity and events at individual mines included:

- continued public review of mine closure issues, through three public

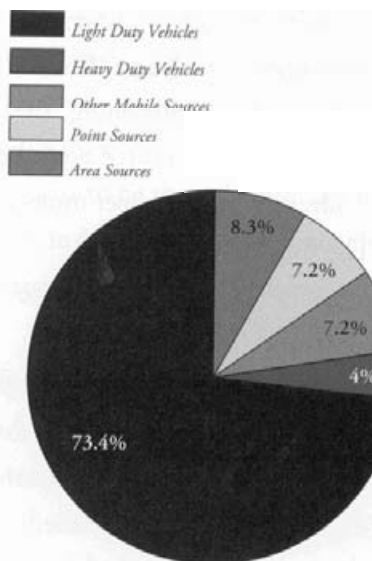
advisory committees at the Equity Silver, Brenda and Sullivan mines;

- ongoing ministry work on reclamation at the abandoned Mt. Washington and Britannia mines;
- the bankruptcy of Westar Mining’s Greenhills and Balmer operations and their subsequent purchase by Fording Coal and Teck Corporation, resulting in the government’s acceptance of unfunded reclamation liability and revised reclamation permits; and
- the bankruptcy of Cassiar Mining’s asbestos operation and sale of its assets.

Mine reclamation symposium. In June, the 16th Annual Mine Reclamation Symposium was held in Smithers, where reclamation programs “from exploration to decommissioning” were discussed. Participants toured both the Equity Silver and Bell Copper minesites. The Annual B.C. Mine Reclamation Award was presented to Highland Valley Copper for its outstanding reclamation program near Kamloops. Citations were awarded to Westar Mining’s Greenhills Operation and Cominco Ltd.’s Sullivan mine.

THE ENVIRONMENT

In the 1990s, decisions about resource development and use must be sensitive to evolving environmental awareness and social values. The ministry pursues this objective through its various review processes and the setting and enforcement of environmental, health, safety and mine reclamation standards. We fund research and demonstration projects to develop new environmental technology. We provide information to the public and industry and undertake leadership programs. We also promote efficiency in the development and use of resources and support pricing policies that reflect the wider “social costs” of energy.



Motor vehicles account for over three-quarters of air emissions in the Lower Mainland

Air Impacts

Environmental impacts on the air we breathe are an important issue for energy development. The burning of fossil fuels makes a large contribution to atmospheric greenhouse gases and urban smog. An important share of the ministry's efforts in 1992/93 addresses the problem of air quality.

Energy

Gas conversion grants total \$2.9 million. The Clean Choice program was introduced in 1991 to help consumers and businesses on Vancouver Island convert heating systems from oil or electricity to natural gas. The program provides grants of up to \$700 for households and up to \$3 000 for businesses. Clean Choice is part of the government's financial commitment to the Vancouver Island natural gas pipeline project. A total of 2 986 grants were paid during 1992/93.

Burrard Task Force Reports. The Burrard Task Force was set up to consider options for reducing emissions of nitrogen oxides (NOx) from B.C. Hydro's gas-fired generating plant in Port Moody. The Task Force report released in March outlines an eight-year plan to cut permitted air emissions by

more than 70 percent. The plan calls for a phased cutback in **NOx** emissions, based on retrofitting the plant's boilers to **best** available control technology standards. Ministry **officials** took part in the Task Force, **as** well as in public forums to discuss **Burrard** and Lower Mainland air quality issues.

Clean air initiatives. The ministry has participated in several federal-provincial environmental initiatives. This included involvement in the National Air Issues Steering Committee which advised the Canadian government prior to the 1992 **Environmental Summit** in Brazil. Ministry **staff are** also contributing, together with the Ministry of Environment, Lands and Parks, to the development of a provincial Clean Air Strategy to address greenhouse gases and urban smog.

State of the environment report. As a result of a commitment made in the spring 1992 Budget Speech, the province, in cooperation with the federal government, produced **B.C.'s first State of the Environment Report**. The ministry helped to prepare the report which **was** released in May.

Social costing for electric power. Social costing means evaluating energy **resources**, not only in **financial** terms, but also in terms of their wider

impacts on society and the **environment**. Ministry **staff were** involved in ongoing work with B.C. Hydro and the provincial Crown Corporations Secretariat to develop a social costing methodology for ranking new electricity supply options. This work came out of the October policy on Independent Power Supply to B.C. **Hydro**.

New focus on alternative energy.

Renewable energy, particularly remote **applications** of solar, wind and other alternative generation technologies, became a growing focus of ministry efforts in **1992/93**. In February, the ministry hosted **Solar Tech '93**, a **solar** technology trade show and conference in Victoria. Discussions were also started with the B.C. solar industry on how to support its development. Training, education and information were identified as important needs by the industry.

Alternative Fuels Task Force formed.

An interagency task force **was** created in the fall to examine alternative fuels policy options and strategies for B.C. The task force is chaired by the ministry, with representatives from ten other ministries and the Greater Vancouver Regional District. In February and March, extensive consultations were held with a

variety of interest groups including the fuels industry, automobile and engine manufacturers, manufacturers and suppliers of conversion equipment, consumer groups and other government agencies.

Support for methanol vehicles. The province provided a \$25 000 grant towards establishing the first methanol refueling station in the Lower Mainland. This station is part of the national Light Duty Methanol Vehicle Demonstration Program which B.C. joined in February. The facility will be located in Burnaby at the Mohawk Oil "Middlegate" station. A refueling facility is seen as essential to a large scale demonstration of methanol as an alternative transportation fuel.

Vans converted to propane and natural gas. The ministry, along with the Jack Bell Foundation (JBF) Vanpool, converted six vans to propane and natural gas to demonstrate best available conversion technology. JBF supplies minivans to groups of commuters who share rides to and from work on a regular basis. Some \$10 000 in ministry funding went towards the conversions and emissions testing. The conversion results showed good performance and emissions levels.

Fleet managers' forums. In the fall, the ministry, along with the Ministry of Government Services' Vehicle Management Branch, held two forums for fleet managers on alternative fuels. These forums brought together managers from B.C.'s major fleets to share information and experiences on alternative fuels issues and technologies. In response to considerable interest, the government plans future forums.

Ministry Clean Air Day. On June 3rd, the ministry held a Clean Air Challenge to encourage employees to use alternative transportation such as carpooling, walking, public transit or cycling for travelling to work. Some 60 percent of employees met the challenge. Draws were held among the participants to receive monthly bus passes.

Land and Water Impacts

If not properly managed, resource development can have impacts on land and water, ranging from the damage caused by oil spills to loss of wildlife habitat from landslides. The ministry's key area of concern for water quality is acid mine drainage, or the acidic run-off from metal mines that can dissolve heavy metals and contaminate streamwater. A major

land impact are the massive waste rock piles created by coal mining which can fail, threatening human safety and the natural environment.

Minerals

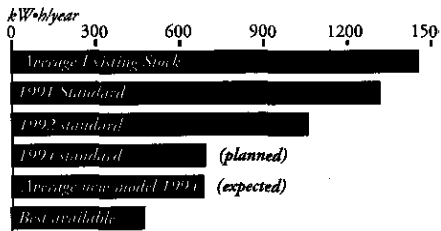
Acid Mine Drainage Task Force. The B.C. Acid Mine Drainage Task Force (BCAMD), chaired and co-funded by the ministry, coordinates provincial research into solving acid mine drainage problems. In 1992/93, the Task Force **shifted** emphasis to work more **closely** with the national Mine Environment Neutral Damage (MEND) **program**, fitting B.C. projects into the national research plan.

Acid mine drainage research. Ongoing research under the BCAMD included work at the abandoned Mount Washington site, where a cost-effective asphalt **emulsion/geotextile** cover has been developed to seal the mine's surface. At the Bell mine, an experiment is continuing on the use of an artificial wetland to reduce dissolved copper levels. The **ministry** is also directing a study using **zeolites** to treat water at the abandoned **Britannia Beach** copper mine. **Zeolites** are naturally occurring minerals found in B.C., whose highly porous nature allows them to absorb heavy metals from water.

Waste rock dump research. The ministry chairs a government-industry Mine Waste Rock Pile Research Committee which supports research towards a common understanding of rock stability problems and **their** solutions. In April, the committee released three consultant studies on methods of monitoring, failure run-out characteristics, and a review and evaluation of all B.C. waste dump failures to date. The studies were introduced at a series of mine dump workshops in Vancouver, **Kamloops**, Tumbler Ridge and **Fernie**.

Landslides brochure prepared. In B.C., there is more loss of life and damage to **property** and the environment from landslides than from other "**high-profile**" natural hazards such as earthquakes and flooding. The ministry produced a six-page **colour** brochure for public information on what causes landslides, where they are likely to occur, and how to minimize their impacts. This brochure is part of an ongoing geological research and public information **program** related to emergency preparedness. Another hazards brochure on earthquakes was released last year.

ENERGY EFFICIENCY



B.C.'s minimum standards have increased the energy efficiency of new refrigerators

The efficient development and use of B.C.'s energy resources saves consumers money, makes industry **more** competitive and, perhaps **most** importantly, offers some of the easiest and most effective answers **to** our environmental problems. The ministry gives a high policy priority to energy **efficiency**. We have a long-term program (Fuel Smart) **to** reduce oil consumption in the transportation sector. We develop energy **efficiency** standards for equipment and buildings. We also show leadership, pursue appropriate pricing policies, and support utility and other outside efforts in energy efficiency.

Equipment standards enhanced. Under its *Energy Efficiency Act (1990)*, the ministry sets minimum energy performance standards for new appliances and equipment sold in the province. In 1992/93, standards were raised for

some products already regulated (clothes washers and dishwashers). As well, standards **were** introduced for newly regulated products—fluorescent lamp ballasts, roadway lighting, **gas**-fired furnaces and water heaters and heat pumps. Over the next 20 years, the total energy savings from higher **efficiency** ballasts alone **could** meet the electricity needs for a city the size of Victoria.

Building standards committee formed.

The ministry has been working for several years to have minimum energy **efficiency** requirements included in the B.C. Building Code. In July, a technical advisory committee was appointed by the Minister of Municipal **Affairs**, Recreation and Housing **to** develop recommendations on new energy standards for **residential** buildings. This committee, chaired by a ministry official, draws its membership **from** key **stakeholder** groups including builders, architects, **building** inspectors, **environmentalists** and utilities.

Second Fuel Smart Challenge held. On March 23rd, the second annual Fuel Smart Challenge was held at Tillicum Mall in Victoria. Over 200 cars took advantage of the free emissions testing offered to the public. Four cars **were** tested over a **57-kilometre** route using both efficient and **inefficient** driving

and maintenance techniques. The superior Fuel Smart techniques demonstrated fuel savings of up to 67 percent.

Tips for Fuel Smart drivers. The ministry developed and published a brochure with tips for Fuel Smart driving, maintenance and vehicle selection. Among the brochure's tips are: check tire pressure regularly, get extra weight out of the vehicle, avoid jack-rabbit starts, and buy lighter front-wheel drive vehicles.

Guide to carpooling launched. In September, the minister announced a new step-by-step guide to setting up, promoting and maintaining a carpooling program. The "Rideshare Tool Kit" shows how to introduce carpools to organizations of all kinds, from offices and hospitals to colleges and factories. It was launched at Simon Fraser University, where a Rideshare carpooling program is already in its second year. SFU's program uses locally designed computer software to match up potential carpoolers based on their postal codes, travel times and other facts.

ProTrucker seminars offered. The ProTrucker program teaches fuel-efficient driving techniques to professional

truck drivers, using a format of intensive two-to three-hour seminars. The program is being co-funded by the ministry and the federal department of Natural Resources Canada, with delivery through the B.C. Trucking Association and driving schools. In 1992/93, seminars were offered free of charge at various locations throughout the province.

Survey of employee travel habits. In anticipation of the ministry's move to out new head office building, the first survey of employee travel habits was conducted. The survey results will be used to develop a trip reduction program for Victoria employees.

CLIENT SERVICE

In meeting our mandate, the ministry seeks to achieve certain core service values. We try to provide prompt, efficient and high quality service to our clients among the general public, industry and government. We deal openly with our clients in a courteous, responsive and helpful manner. We work to ensure that our internal operations run efficiently and effectively. We also strive for a skilled, diverse workforce both within and outside the ministry.

The Public

Ministry services to the public are wide-ranging, from regulation of public safety and the environment to revenue collection and public education. The ministry's Communications and Public Affairs Branch is a focal point for public inquiries, media relations, issues management and advertising. But all staff have a role to play—for example, by assisting in responding to more than 1 000 letters to the minister each year.

Public Affairs active. Communications and Public Affairs continued a high level of activity in 1992/93.

Accomplishments included:

- over 100 news releases and media alerts, 28 industry information letters and 13 advertisements;
- 12 press conferences, receptions and other events;
- over 48 printed brochures, pamphlets, booklets, annual reports and business plans; and
- five conferences, exhibits and trade shows.

The ministry library answered more than 3 000 requests for information.

School visits. Ministry officials visit schools to talk to students about energy and minerals and career opportunities in the sciences and industry. For example, in February geologist

Kirk Hancock spoke at two elementary schools in Comox and Cortez Island, as part of the federal-provincial Scientists and Innovators in the Schools Program. This fiscal year, school visits reached over 2 000 students.

Staff participate in Earth Day. In April, the ministry mounted and staffed a display for Earth Day at the Sanscha Hall in Sidney, B.C. Officials demonstrated technology, such as oil and gas drilling bits, and talked about everyday uses for energy and minerals. Children brought in rocks for the geologists to identify and joined in a crystal-growing experiment.

Emergency preparedness brochures.

Landslides, the second of two brochures on emergency preparedness, was published in April. Together with an earlier release on earthquakes, more than 100 000 of these popular brochures have been sent out. One of their goals is to relay the need for geological research to minimize the effects of natural hazards in B.C.

B. C. jade on display. The ministry was a guest exhibitor at the B.C. Gem & Mineral Show and Gem & Mineral Federation of Canada, Show and Convention in Port Moody in August. Some 3 700 people attended the three-day convention. Ministry geologists

showed a display of B.C. jade, the province's mineral emblem and one of our exports to the Pacific Rim.

Industry and Government

Services to industry and other government agencies range from supplying resource information for exploration and land use planning, to publishing guides and manuals on regulatory requirements, to hosting seminars and conferences.

Energy

Oil and gas well database. Work continued on the **Petroleum Information Management System (PIMS)**, a new database to gather, process and disseminate information on B.C.'s oil and natural gas wells. The software design was completed, with the digitization of drilling and well completion documents continuing through the fiscal year.

Trappers and oil and gas activity

Oil and gas development in B.C.'s Northeast can conflict with the local trapping industry. In 1992/93, ministry officials helped develop a program setting out guidelines for oil and gas companies to notify trappers of their planned activity and to compensate them for losses.

Energy data requests served.

The ministry maintains an extensive database of energy production, consumption, price and other statistics. This database includes over 1 000 time series, most of which date back to the early 1960s. Numerous requests for data were received and filled during 1992/93.

Minerals

Mineral inventory workshops.

The ministry conducted two workshops on MINFILE, B.C.'s computerized mineral inventory system. This system is a "desktop prospecting" tool used for planning mineral exploration programs and investments. The workshops attracted 30 participants representing a wide range of users including prospectors, mining companies, consultants, college instructors and geologists from other governments.

New manual for mineral titles.

Over the past few years, there have been extensive changes to mineral titles administration in B.C. A new automated data system (MiDA) was introduced this year, and in 1991/92 the 24 mining divisions were consolidated into six regions under the TITLES 2000 project. As a result, a new edition of the **Mineral Titles Recording Policy and Procedures Manual** was released in January.

Mineral titles administrators meet.

Given the rapid change happening to mineral tenure policy, titles administrators need to consult with their counterparts in other jurisdictions. In September, administrators for provincial and territorial governments across Canada met in Vancouver and Victoria. A committee was established to make recommendations on a standard format for reporting and recording claim staking activity.

Chief inspector goes to Geneva. The provincial Chief Mines Inspector, Ralph McGinn, spent six weeks in Geneva in the summer to advise the International Labour Organization (ILO) on mine health and safety standards. While there, he prepared a report on mine safety standards which the ILO later endorsed. B.C.'s tripartite approach to setting health and safety standards, involving labour, management and independent experts, has become a working model for other provinces and countries.

International meeting on industrial minerals. The ministry took part in a joint promotion of B.C.'s industrial minerals at the 10th Industrial Minerals International Congress held in San Francisco in May. Seven mining companies and the B.C. Trade

Development Corporation also contributed to an exhibit and poster session. The promotion highlighted B.C.'s exploration and development opportunities, favourable location for international markets, and our growing geoscience database to assist developers.

Placer mining seminar held

Also in May, the ministry hosted a one-day seminar in Wells, B.C., on permitting requirements for placer mining. The seminar was meant to open communications between placer miners and government regulators, in order to reduce conflicts and improve working relationships.

10th Annual Cordilleran Roundup.

More than 1 100 people attended the mining industry's Tenth Annual Cordilleran Geology and Exploration Roundup held in Vancouver in January. The Mineral Division was well represented at the ministry's featured day which included talks, poster sessions and an address by the minister.

Internal Management

The ministry's Revenue and Operational Services Division provides a variety of administrative, financial, personnel and information systems support services.

Internal services activity.

Accomplishments during 1992/93 included the following:

- 44 competitions for staff positions and 69 classification reviews were held;
- the library catalogued over 1 000 journals, answered more than 3 000 reference requests, and acquired almost 200 new publications, journals and periodicals;
- Warehouse Services dispatched 52 field crews and maintained 71 owned and leased vehicles; and
- payroll and contract billing services were provided to over 400 ministry staff and 280 contractors and suppliers.

Decentralized office management. A new computerized Office Management System (OMS) is being implemented that allows individual ministry managers to enter budget commitments and expenditures, run up-to-date financial reports, and make supplier inquiries to determine the status of payments. In 1992/93, staff training sessions and a system manual were completed. Computer enhancements were also made to facilitate the electronic transfer of financial data.

Computer network design. The ministry has initiated efforts to place an intelligent, flexible computer

network for the 1990s. In 1992/93, staff worked with industry and B.C. Systems to design and implement a pilot Local Area Network composed of 13 workstations. This pilot was designed to build internal computer expertise and to evaluate alternative options and technologies. Based on the pilot results, guidelines have been developed for a long-term networking strategy.

Support to B.C. Energy Council.

Administrative Services staff worked with the Chair of the new B.C. Energy Council to establish the Council's offices in Vancouver. On an ongoing basis, the ministry provides administrative and financial support (payroll, budgeting, etc.) to both the Council and the B.C. Utilities Commission.

Staff Development

The ministry's ability to deliver effective programs and policies is due to the quality of our employees. We strive to build a highly qualified, diverse workforce through employment equity initiatives and ongoing staff training.

Employment Equity Program.

The ministry's Employment Equity Program is creating a workplace that is free of all forms of adverse discrimination, that values diversity, and ensures

that no one is denied employment or advancement opportunities for reasons unrelated to his or her **ability** to do the job. In 1992/93, the **program** promoted understanding of employment equity issues and attracted candidates from a wider pool of qualified applicants.

Employment equity training held.

Managers took part in two-day workshops to learn new skills for managing a diverse **workforce**. Some 86 percent of ministry employees attended **two-**hour meetings to discuss employment equity and its impact on the workplace. Several geologists and engineers attended a day-long seminar in preparation for school visits to emphasize the **value** of science education.

Outreach remitment guide developed.

A **recruitment** guide was produced to assist managers in attracting employment applications from qualified women, Aboriginal people, visible minorities and persons with disabilities. Ministry committees, interview panels and nominees to boards and commissions included both men and women, wherever possible.

Deputy Minister's Employment Equity Committee. The deputy minister formed a committee, with membership **from** throughout the ministry, to guide

development of the Employment Equity Program. This committee of 40 participants meets on a quarterly basis.

Finance and administration training.

A core training package was prepared and distributed to ministry employees covering topics such as petty cash, travel expenses, accountable advances and purchasing. Staff received training in the administration of contracts and employee leave.

Staff tours of industry operations.

Ministry staff benefited from educational visits to a number of industry facilities during the year including the Myra Falls, **Quinsam** and Island Copper mines on Vancouver Island, and the Conoco natural gas drilling site in Delta.

Employee Suggestion awards. A record number of suggestions **were** submitted under the ministry's Suggestion Awards Program in 1992. Thirteen employees received **cash** and non-cash awards. In September, ministry employee Stan **Hoffman** received the province's \$25 000 maximum suggestion award for his suggestion to digitize **B.C.'s** 3 000 mineral titles maps.

Training of Others

Where funding permits, the ministry also supports training and development of people outside the government.

UN trainees visit Geological Survey.

In December, minisuy geologists hosted three United Nations trainees sponsored by the Canadian Bureau for International Education. While in Victoria, the trainees received extensive training in the use and construction of geoscience databases.

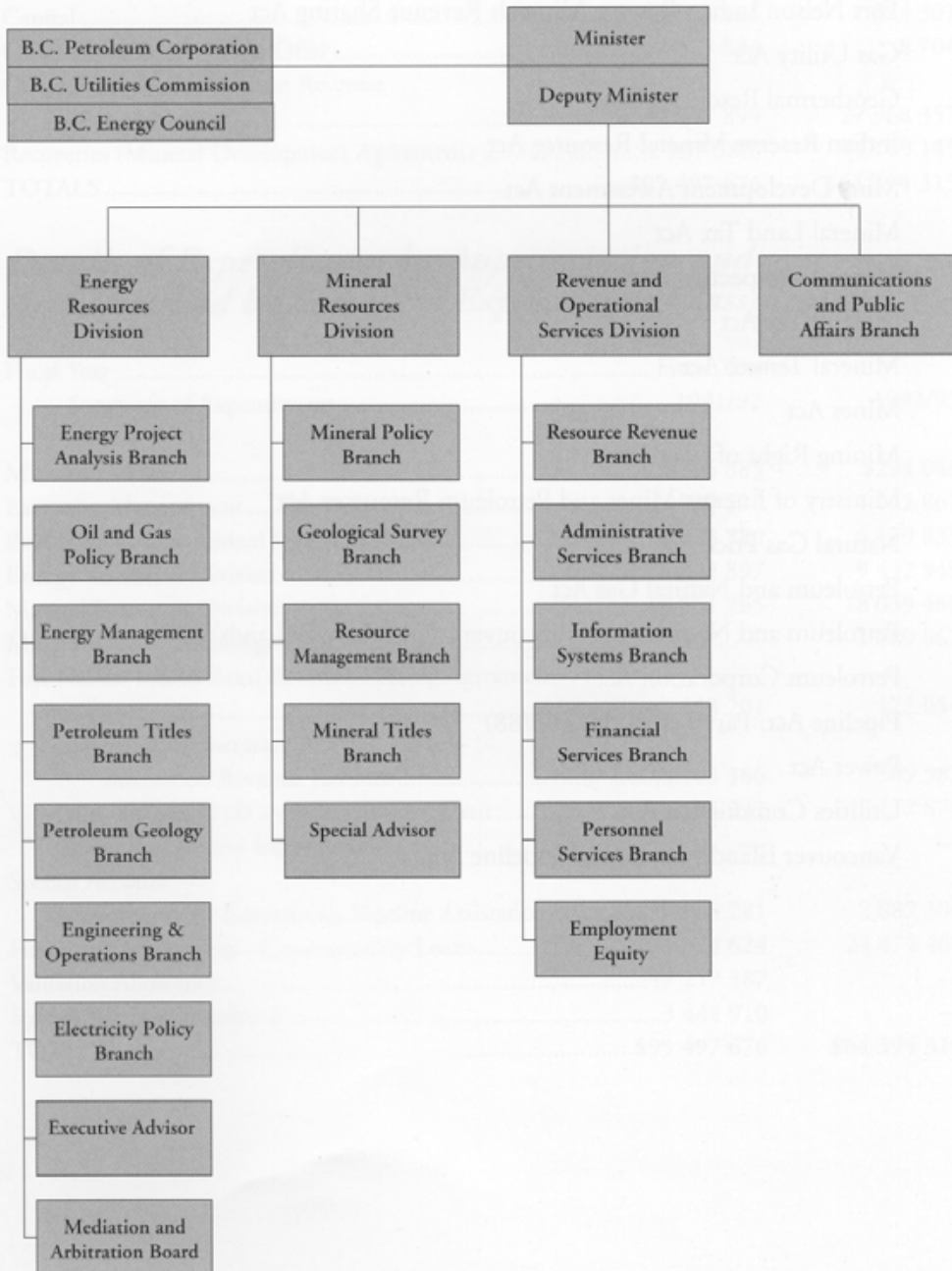
Annual prospecting course cancelled.

The ministry operates a Prospector's Training Program consisting of several

basic, intermediate and advanced training courses. This year, the annual Advanced Prospecting Course was cancelled for lack of registrants, reflecting the downturn in mineral exploration activity in B.C. As an alternative, the ministry provided funding for a Petrology for Prospectors course in Nelson.

University students hired. The ministry continues to employ university and college students from a variety of disciplines in co-op work terms and auxiliary positions. During 1992/93, some 90 people received on-the-job training at our head and regional offices and in the field.

MINISTRY OVERVIEW



LEGISLATION

Legislation administered by the ministry includes the following:

coal Act

Economic Development **Electricity** Rate Act

Energy Council Act

Energy Efficiency Act

Fort Nelson Indian Reserve Minerals Revenue Sharing Act

Gas Utility Act

Geothermal Resources Act

Indian Reserve Mineral Resource Act

Mine Development Assessment Act

Mineral **Land** Tax Act

Mineral Prospectors Act

Mineral Tax Act

Mineral Tenure Act

Mines Act

Mining Right of Way Act

Ministry of Energy, Mines and Petroleum Resources Act

Natural Gas Price Act

Petroleum and Natural Gas Act

Petroleum and Natural Gas (Vancouver Island Railway Lauds) Act

Petroleum Corporation Act

Pipeline Act: **Part 7** (by OIC **468/88**)

Power Act

Utilities Commission Act

Vancouver Island Natural Gas Pipeline Act

MINISTRY EXPENDITURES

Standard Expenditure Classifications

	Fiscal Year 1991/92	Fiscal Year 1992/93
Salaries \$ 2	2 089 045	\$22 978 459
Supplies and Services 1	4 149 858	16 833 639
Capital	2 028 626	1374 301
Other Expenditure (Write Offs) 1	7 225 834	8 704
Grant (Includes Fort Nelson Revenue Sharing Agreement)	941 899	27 968 357
Recoveries (Mineral Development Agreement)	937 586)	(4 769 145)
TOTALS	497 676	\$64 394 315

Details of Expenditures by Appropriation and Activities and by Standard Expenditure Classification

Fiscal Year	Fiscal Year 1991/92	1992/93
Summary of Expenditures		
Minister's Office	\$306 885	\$294 048
Executive Management..920 528	1042 861
Revenue and Operational Services Division..5 883 380	6 439 833
Energy Resources DivisionV 322 897	9 432 949
Mineral Resources Division..18 551 265	18 039 480
Mineral Development Agreement..	—	1089 067
Fort Nelson Indian Band Revenue Sharing Agreement		
Statutory..233,201	172 054
Financial Administration Act, Sec. 24 (c)—		
Interest on Revenue Refunds..103 386	509 387
Mines Act Sec. 17(2) - Mine Improvement..24 932	17 875
Mineral Exploration Incentives Program..	—	—
Special Account —		
Vancouver Island Natural Gas Pipeline Assistance..27 964 281	2 882 300
Financing Transaction—Concessionary Loans..11 524 624	24474461
Valuation Allowance..17 217 387	—
Special Warrant Number 83 444 910	—
TOTALS	\$95 497 676	\$64 394 315

MINISTRY CONTACTS (AS OF MARCH 31, 1993)

Minister's Office

Honourable Anne Edwards

Deputy Minister's Office

John Allan, Deputy Minister

Irwin Henderson, Communications and Public Affairs Branch

Energy Resources Division

Peter Ostergaard, Assistant Deputy Minister

Gordon Douglas, Executive Advisor

Warren Bell, Energy Management Branch

Karen Koncohrada, Director, Oil and Gas Policy Branch

Gordon MacLean, Director, Electricity Policy Branch

Denise Mullen, Acting Director, Energy Project Analysis Branch

Bruce Hanwell, Director, Engineering and Operations Branch

John MacRae, Director, Petroleum Geology Branch

Gerald German, Commissioner, Petroleum Tides Branch

Mined Resources Division

Bruce McRae, Assistant Deputy Minister

Brian Parrott, Director, Mineral Policy Branch

Denis Lieutard, Director, Mineral Tides Branch

Dick Fyles, Chief Inspector, Resource Management Branch

Ron Smyth, Chief Geologist, Geological Survey Branch

Ray Crook, Director, Mine Development Assessment Branch

Revenue and Operational Services Division

Joan Hesketh, Executive Director

Bruce Garrison, Director, Resource Revenue Branch

Timothy Chatton, Director, Administrative Services Branch

Tom Scharien, Director, Information Systems Branch

Jennifer Smith, Director, Financial Services Branch

Barry Turner, Director, Personnel Services Branch

Belinda McLaughlin, Employment Equity Advisor

District Offices

Fernie

Fort St. John-Mediation and Arbitration Board

-Charlie Lake Regional Office

Nelson

Nanaimo

Prince George

Quesnel

Smithers

Vancouver