



Province of British Columbia  
Ministry of Energy, Mines and Petroleum Resources  
Hon. Jack Davis, Minister



# **GEOLOGICAL SURVEY BRANCH**

## **1989 - 90 PLAN**

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Information Circular 1989-24

# 1989-90 GEOLOGICAL SURVEY BRANCH PLAN

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## PREFACE

This plan is a summary of the Branch's business and what it intends to accomplish in the 1989/90 Fiscal Year. It outlines our mandate, key functions, organization, 1989-90 Action Plans and new initiatives. It should be used in conjunction with the Branch's project inventory, which details all the major projects the Branch will undertake this year. The plan and the inventory are developed by Branch staff to help us translate our goals and objectives into measurable, achievable outputs.

## MANDATE

Assemble, maintain, and disseminate an up-to-date, comprehensive geoscience database for British Columbia so as to provide a sound base for private sector exploration and development of the Province's mineral resources and for resource management decisions by Government.

## KEY FUNCTIONS

### DATA COLLECTION

- Data are collected in two ways. Firstly, by the Branch through its programs of integrated geological and geochemical surveying and secondly, by way of information made available by legislation under the *Mineral Tenure Act* and the *Coal Act*. Published geoscientific maps and data sets are the most important products of research and related studies undertaken by the Branch.

### DATA CURATION AND RETRIEVAL

- Curate and store the confidential and non-confidential geoscience information coming to the Branch so that it can be readily retrieved in an appropriate form by users.
- Maintain a manual assessment report library, a manual file on mineral properties, three computer files - MINFILE, COALFILE, and Regional Geochemical Survey Data (RGS), for rapid retrieval and use by industry and government.

### DATA ANALYSIS AND INTERPRETATION

- Synthesize, and interpret the variety of data received, from prospectors' reports to mining company reports, in the most cost effective way, to provide a quality provincial geoscience database and publish an annual summary in the volume *Exploration in British Columbia*.
- Provide timely analytical laboratory services in support of Branch survey activities.
- Assemble and maintain a file on the quality of B.C. coals to promote their use, raw or blended, in new markets.

### PROVISION OF SERVICES

- Provide geological services to the public and government from five district offices (Smithers, Prince George, Kamloops, Nelson, Victoria), a branch office in Vancouver, and headquarters in Victoria. Disseminate information through publications, publically available databases, scientific meetings, trade shows, and an annual open house in Vancouver. Provide prospector training courses throughout the Province. Manage government exploration incentive programs such as F.A.M.E. and Prospectors Assistance and Training.

## **MARKETING INFORMATION**

- Market the Branch's geoscience databases and publications in innovative ways to respond to users' needs and to raise revenue.

## **REGULATION**

- Verify company work assessment reports submitted in compliance with the *Mineral Tenure Act* and *Coal Act* within 60 days of receipt. Verification ensures quality data is submitted to Province's geoscience database.
- Certify assayers in B.C. as required under the *Ministry Act*. Hold up to four examinations annually.

## **POLICY**

- Improve the effectiveness for exploration for mineral, coal and industrial mineral resources through development of integrated, geoscience databases.
- Promote exploration and mine development and attract mineral investment in B.C. Favourable geology and a comprehensive geoscience database are the first drawing cards to attract private sector mineral exploration investment in an internationally competitive area.
- Provide geological information and advice on land use issues; conduct geological surveys to determine mineral potential as required. Information on the subsurface is required by many Government departments involved in land administration.
- Provide advice on provincial mineral and coal resource supplies and related technical matters as input to provincial regional economic development initiatives.

## BUDGET

The base budget of the Branch in fiscal year 1989-90 is \$6,224,850. This is a decrease of \$403,596 over 1988-89 due mainly to the transfer of all employee benefits to the Assistant Deputy Minister's budget.

The MDA budget is \$1.06 million in fiscal year 1989-90. The 1989-90 F.A.M.E. Program only includes the Prospector Assistance and Training Component, with a budget of \$500,000.

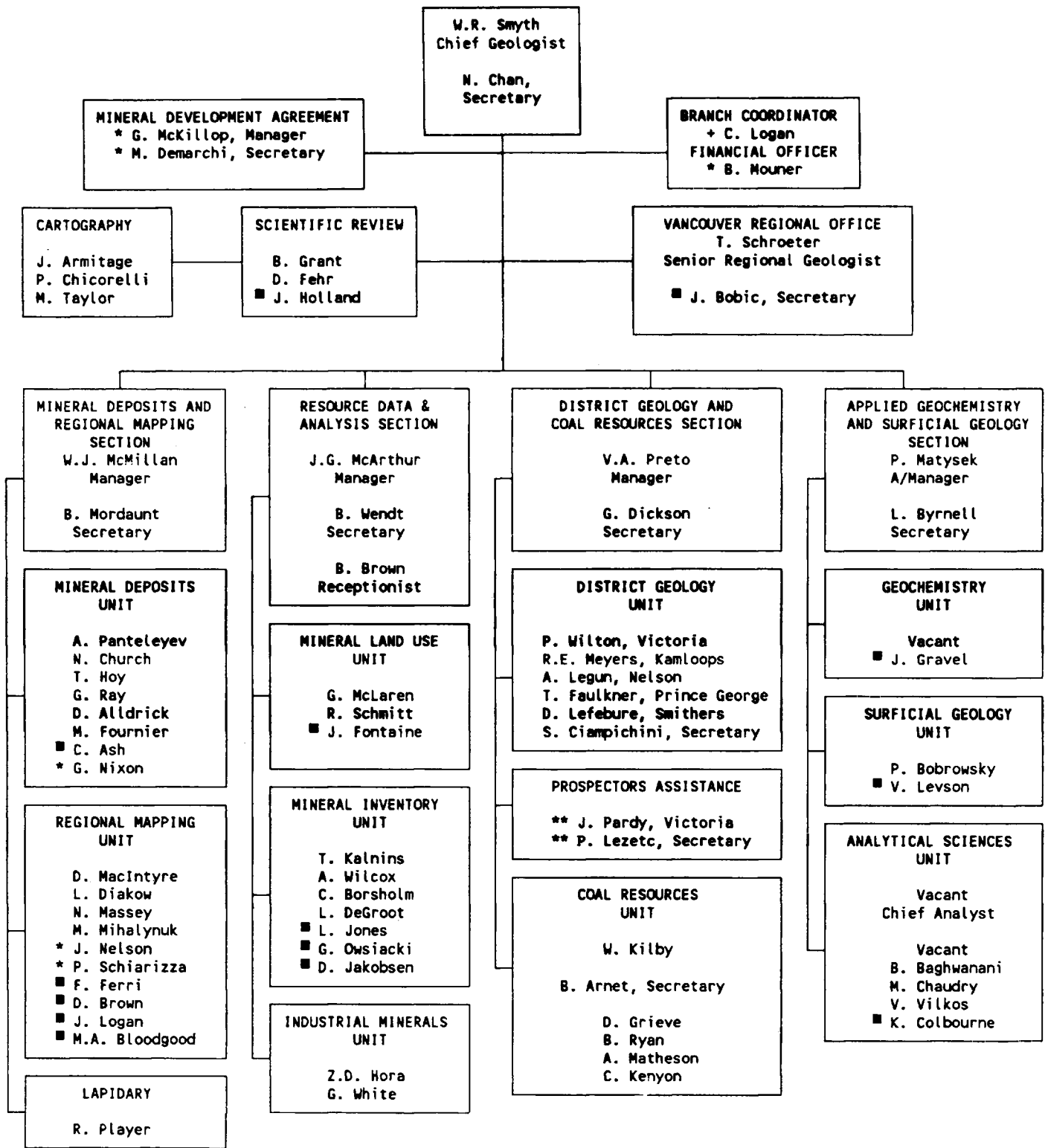
### 1989-90 GEOLOGICAL SURVEY BRANCH BUDGETS

OPERATIONAL GROUP	BASE	MDA	FAME	TOTAL
Chief Geologist	386,614			386,614
Scientific Review	404,000	69,000		473,000
Vancouver Geologist	135,700			135,700
Regional Mapping	1,170,335	418,000		1,588,335
Mineral Deposits	922,000	185,000		1,107,000
Geochemistry	510,000			510,000
Surficial Geology	100,000			100,000
RGS		185,000		185,000
District Geology	691,700	10,000		701,700
Coal Resources	484,100			484,100
Industrial Minerals	191,125	95,000		286,125
Land Use	191,788			191,788
Assess. Reports/RDA Mgmt	338,666			338,666
MINFILE	351,420			351,420
Lab	347,402			347,402
Overhead/Support		105,000		105,000
FAME			500,000	500,000
	<b>6,224,850</b>	<b>1,067,000</b>	<b>500,000</b>	<b>7,791,850</b>

## STAFFING

The Branch has 97.5 FTEs in fiscal year 1989-90. This is an increase of 46 FTEs over the previous year to legitimise staff hired on personal service contracts over the last two years as a result of recent budget increases. Approximately 24 of these positions will be filled on a permanent basis during 1989-90, the remaining 23 person years will be filled with shorter-term auxiliary senior and junior assistants. The MDA program is providing approximately 17 person year equivalents in personal service contracts in addition to the base budget staff.

# GSB ORGANIZATIONAL CHART



- \* MDA Contract
- \*\* Contract
- Auxiliary
- + Temporary Secondment

## ORGANIZATION

The Branch is organized into four sections; Mineral Deposits and Regional Mapping Section, Resource Data and Analysis Section, District Geology and Coal Resources Section and the Applied Geochemistry and Surficial Geology Section.

All four sections report directly to the Chief Geologist's office; as well, the Mineral Development Agreement (MDA) manager, the Scientific Review Senior Geologist and the Vancouver Regional geologist report to the Chief Geologist.

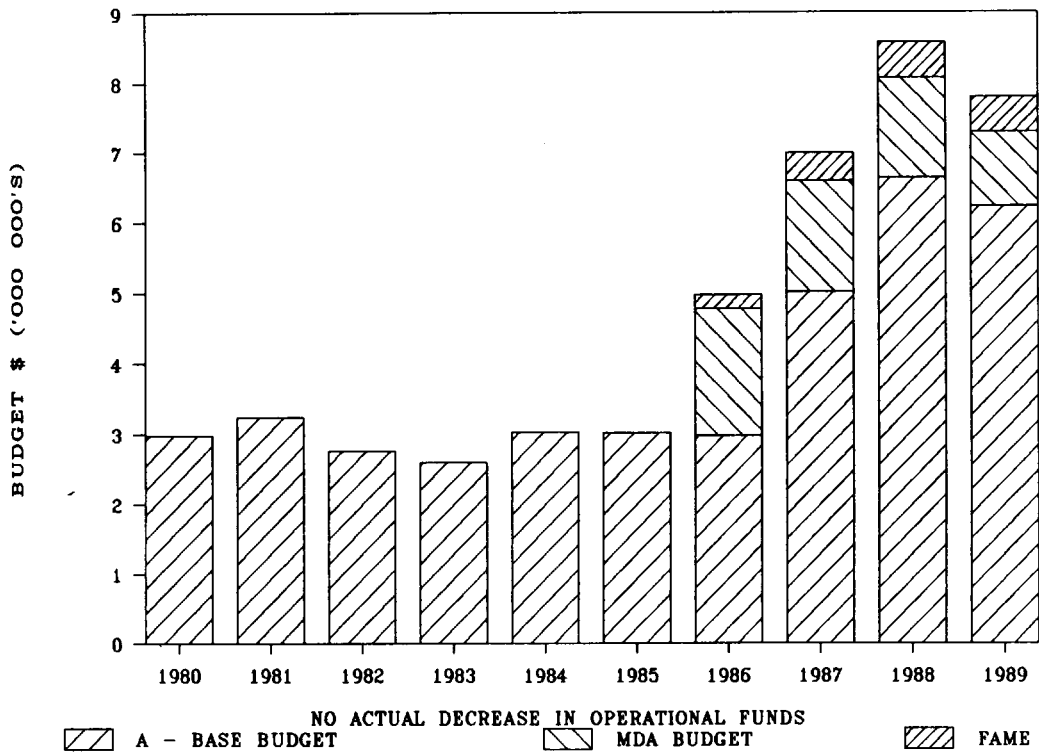
Organizational changes from the previous year include the formation of the Applied Geochemistry and Surficial Geology Section. It contains a previously existing section - the analytical lab, the geochemistry unit, which was formerly in the Mineral Deposits and Regional Mapping Section, and a new surficial geology unit.

Staffing changes in 1989 have included the addition of 50 full time equivalents. These will replace project leaders, support staff and summer assistants previously working on contract basis. Not all the positions will be filled on a full time basis, hiring will extend into 1990.

Following is a list of the sections, outlining the objectives, resources, action plans and new initiatives of each of their units.

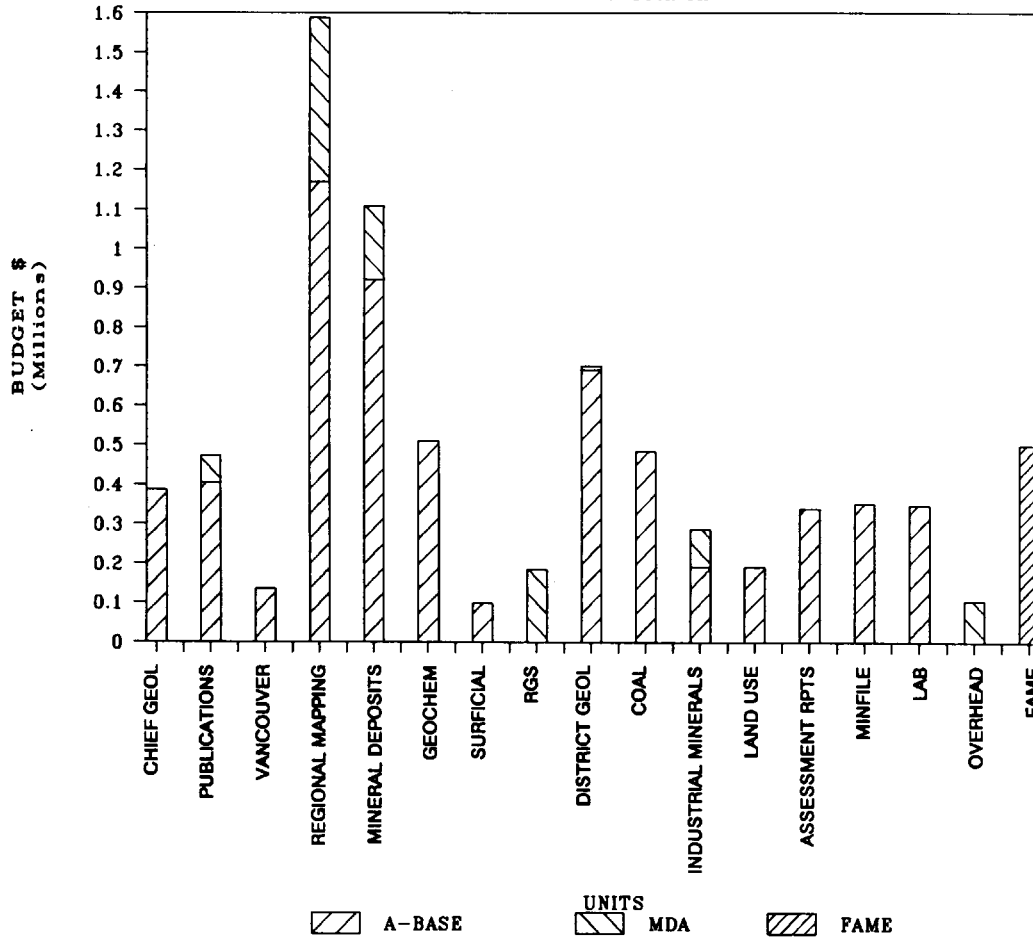
# GEOLOGICAL SURVEY BRANCH BUDGETS

1980 - 1989



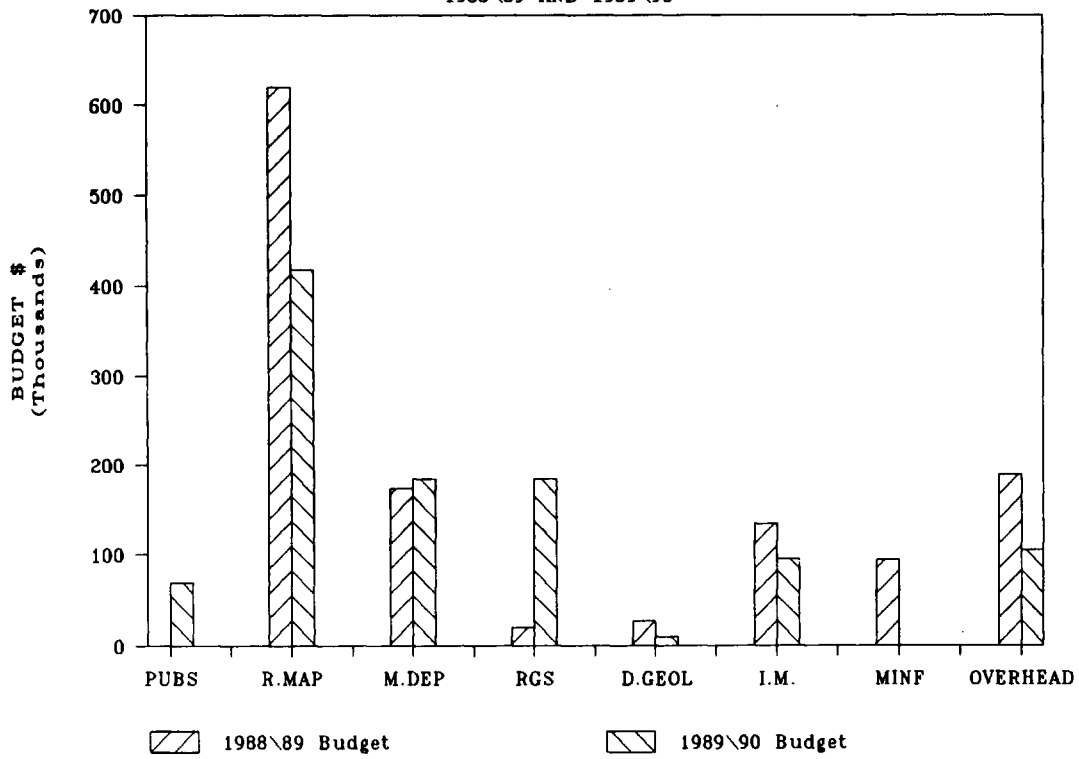
## UNIT BUDGETS, 1989

GEOLOGICAL SURVEY BRANCH



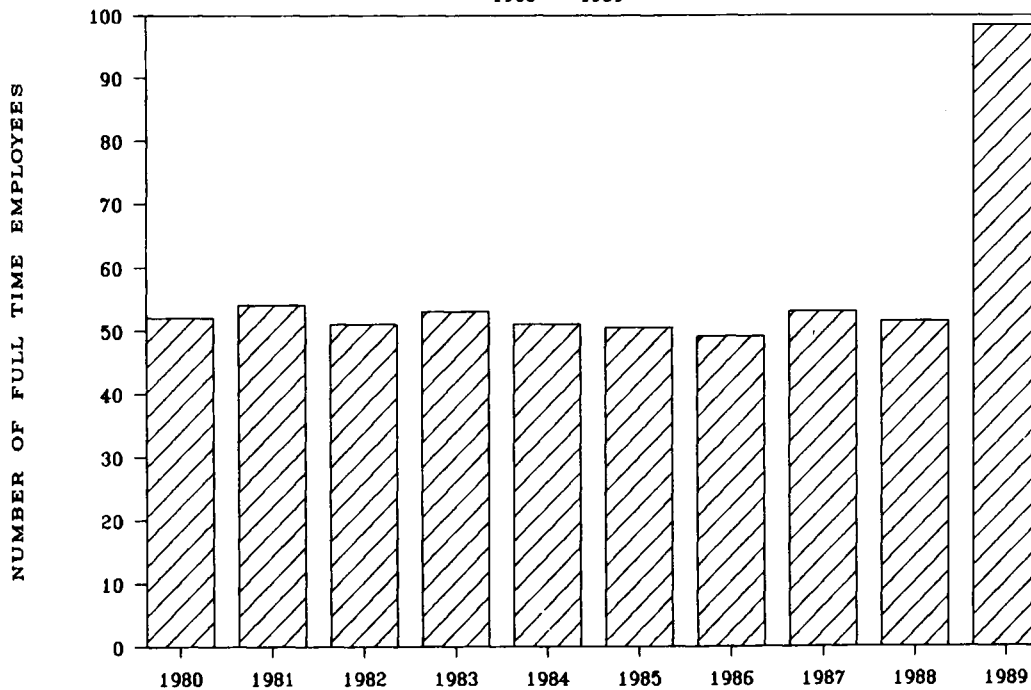
# MDA BUDGET

1988\89 AND 1989\90



# GEOLOGICAL SURVEY BRANCH STAFFING LEVEL

1980 - 1989





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## MINERAL DEPOSITS AND REGIONAL MAPPING SECTION

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### OBJECTIVES

- Produce the modern mapping, mineral deposits and geochemical databases through integrated geoscientific surveys that are essential for successful private sector exploration and government planning and policy making.
- Carry out followup scientific studies to produce internal and external reports and computer-accessible output that will stimulate exploration.
- Maintain a presence within the exploration community through talks, visits and consultations.

### MINERAL DEPOSITS UNIT

#### OBJECTIVES

- Conduct geologic and metallogenic studies of mineral deposits, mining camps and areas with potential mineral wealth in order to determine the distribution, origin and mode of formation of the deposits. Develop exploration guidelines that will generate activity in the study area and elsewhere in the Province.

#### STAFFING AND RESOURCES

A-Base - 16 FTEs, \$922,000.

MDA - 2 contract geologists, + 2 summer assistants, \$195,000.

#### ACTION PLAN

ACTIVITIES	RESPONSIBILITY	OUTPUT
Field Projects:		
Rossland	Hoy, Andrew	Open File reports and maps, Fieldwork reports, talks, Exploration reports, Annual Cordilleran Roundup
Skarns	Ray, Webster	
Iskut deposits	Alldrick, Britten	
Ultramafic rocks	Nixon, Hammack	
Listwanites	Ash, Arksey	
Final Report Preparation:		
Quesnel	Panteleyev	Bulletin and Paper series, reports, external reports
Bralorne	Church	
Gataga	MacIntyre	
Purcell	Hoy	
Mineral exploration activity enhancement	All Staff	Talks, consultations, visits

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#### NEW INITIATIVES

A study of Listwanitic alteration - its distribution, origin, age and relationship to mineralization and tectonic significance was initiated. It is a planned 2 year program.

## REGIONAL MAPPING UNIT

### OBJECTIVES

- Conduct systematic 1:50 000 scale regional geological mapping and geochemical sampling of selected, poorly understood or underexplored parts of the Province.
- Produce maps of this scale as essential precursors to determining mineral potential for making informed government decisions and aiding discovery of new, employment-generating world class and smaller mineral deposits to replace today's depleting mineable reserves.

### STAFFING AND RESOURCES

A-Base - 18 FTEs, \$1,170,000 (includes summer assistants)

MDA - 4.5 contract years, \$434,000 (includes summer assistants)

### ACTIVITY PLAN

ACTIVITIES	RESPONSIBILITY	OUTPUT
Mapping projects:		
Taseko-Bridge River	Schiarizza, Gaba	Open File maps and reports, Fieldwork reports, Annual Cordilleran Roundup Exploration reports, talks, etc.
Whitesail	Diakow, Timmerman	
Telkwa Range	MacIntyre, Desjardins	
Tagish	Mihalynuk, Mountjoy	
Atlin	Bloodgood, Bellefontaine	
Iskut North	Logan, Koyanagi	
Stikine	Brown, Gregg	
Final report preparation:		
Cassiar-Midway	Nelson	Bulletin and Paper series, reports
Sicker	Massey	

### NEW INITIATIVES

Existing projects are multi-year efforts; no new projects were launched because no new funds were available.

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## RESOURCE DATA AND ANALYSIS SECTION

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### MINERAL INVENTORY UNIT

#### OBJECTIVES

- To review and approve/reject approximately 1200 mineral assessment reports annually for maintenance of mineral claim tenure under the *Mineral Tenure Act*.
- To develop and maintain a mineral exploration report database - ARIS and a mineral inventory database MINFILE/PROPERTY FILE to stimulate and focus evaluation and exploitation of metallic and non-metallic minerals.
- To widely distribute these multi-media databases and related map series to users in industry, government, academia and the public at low cost using distribution and marketing agents.
- To provide advice and application software to users to facilitate ease of use of the databases.
- To promote cooperative technology/software development and transfer through cooperative interagency programs and commercial licencing agreements.
- To provide policy and legislative proposals to government.

#### STAFFING AND RESOURCES

8 FTEs, 2 contract geologists, 2 contract/auxiliary support staff, \$557,220.

#### ACTION PLAN

ACTIVITY	RESPONSIBILITY	OUTPUT
Assessment Report Approval/ARIS database	Kalnins, de Groot	Approvals/rejections Assessment Report distribution, paper/fiche Assessment Report Index paper, diskettes
MINFILE	Jones, Borsholm	Coding/updating occurrence descriptions publishing MINFILE products/ printouts, diskettes, maps application software
Revised Regulations	McArthur, Kalnins	Draft regulations for <i>Mineral Tenure Act</i>
MINFILE Marketing Agreement	Smyth, McArthur Jones	Sales royalties from other agencies Further project development

NEW INITIATIVES	RESPONSIBILITY
Enhancements to ARIS database to remove unused fields/data and develop a portable credit accounting system and automated map production	de Groot
Develop a PC data entry module for MINFILE	Jones, Borsholm

## LAND USE UNIT

### OBJECTIVES

- To ensure Ministry policy "No alienation without Evaluation" is effective in maximizing the area of British Columbia that is open to mineral exploration.
- To conduct field and office studies on both a regional and site specific basis to assess the universal potential of areas proposed to be withdrawn or restricted from exploration.
- To provide policy and legislative advice to government on land use issues.
- To participate in public and interagency planning programs and to develop effective communication with agencies interest groups and the public so that there is a high level of awareness of the importance of including minerals in the evaluation of land use options.
- To provide a "one window" coordination for the Ministry on land use issues.

### STAFFING AND RESOURCES

3 FTEs, 3 temporary field assistants, \$185,388.

### ACTION PLAN

ACTIVITY	RESPONSIBILITY	OUTPUT
Purcell Wilderness Conservancy	McLaren	Fieldwork, Open File, Interval reports
Skagit Recreation Area	Schmitt	Project Proposal Participate in Public Planning
Garibaldi: Park Additions	Schmitt	Open File
Watershed Policy	Schmitt	New Ministry Policy
Recreation Area Policy	McLaren	
Wilderness Area Policy	McLaren	
Land Use Office - Coordination/Research on issues, referrals, correspondance	Fontaine	Revised Areas Alienated from Mining map Briefing/Info Packages Displays

NEW INITIATIVES	RESPONSIBILITY
Contribution to: Ministry Land Use Information paper	Staff
Ministry and Environment paper	Staff

## INDUSTRIAL MINERALS UNIT

### OBJECTIVES

- To maintain an up-to-date inventory of industrial mineral occurrences including geology, resource economics, and specifications to identify opportunities for development.
- To conduct both regional and site specific field studies, office studies and laboratory analysis and testing.
- To monitor activity by the industrial mineral sector to provide timely advice to government.
- To provide timely response and input to industrial mineral project proposals under review in the Mine Development Review Process.
- To promote the industrial mineral development potential of British Columbia.
- To provide advice and information to exploration to explorationists, prospectors, manufacturers, commodity traders, government agencies and the public.
- To provide scientific and technical information and advice to government to formulate policy and legislation for the effective management of industrial minerals in British Columbia.

### STAFFING AND RESOURCES

2 FTEs, \$286,125.

### ACTION PLAN

ACTIVITY	RESPONSIBILITY	OUTPUT
Publishing previously completed projects: carbonatites, kimberlites phosphates, gypsum, feldspar, olivine, fluorspar, tertiary basins	Hora, Authors	Bulletins, Papers Open Files
Barite inventory	Butrenchuk	Open File
Limestone, dolomite inventory	Fischl	Open File
Platinum, chromite, nickel inventory	Hancock	Open File
Perlite, vermiculite, possolan inventory	White	Fieldwork Open File
Sulphur Inventory	Dumais	Open File
Promotion of Industrial Minerals (Market Discovery '89)	McArthur, Hora, White, Dumais	Trade Show Display
NEW INITIATIVES	RESPONSIBILITY	
Planning Industry Mineral Program next decade (McVey study)	Hora, McArthur	

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## DISTRICT GEOLOGY AND COAL RESOURCES SECTION

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### DISTRICT GEOLOGY UNIT

#### OBJECTIVES

- To maintain an up-to-date inventory on the geology, mineral deposits, exploration trends and development in each district.
- To provide a timely response and input to project proposals under review in the Mine Development Review Process, and serve on Mine Review Committees.
- To promote the mineral potential of each district.
- To provide advice and information to explorationists, prospectors, and other agencies, and the general public.
- To assist in the administration and delivery of the Prospectors Assistance and Training Program.

#### STAFFING AND RESOURCES

7.5 FTEs, \$691.700, five district offices: Smithers, Prince George, Kamloops, Nelson and Victoria.

#### ACTION PLAN

ACTIVITY	RESPONSIBILITY	OUTPUT
Geologic and metallogenic studies	Lefebure, Faulkner, Meyers Legun, Wilton	Open File Report and Maps Mineral Exploration Review Exploration Part B reports Fieldwork reports Talks and poster sessions
Mine Development Review and Land Use advice	Lefebure, Faulkner, Meyers Legun, Wilton	MDRP responses
Mineral Potential Promotion, Consultation	All Staff	Regional geological meetings and field trips, talks, posters Producers and Potential Map Consultations
Prospectors Training and Assistance	Lefebure, Faulkner, Meyers Legun	Basic and advanced level courses Prospectors supervision and advice

#### NEW INITIATIVES

NEW INITIATIVES	RESPONSIBILITY
Compilation of geological, geophysical and geochemical data and description of Cu-Au porphyry type deposits in the Omineca Belt between Fort St. James and Germansen Landing.	Faulkner
Metallogenic studies and application of computer based expert systems - North Coast	Lefebure

## COAL RESOURCES UNIT

### OBJECTIVES

- To conduct regional and deposit scale studies so as to determine the distribution, configuration, mode of formation and utilization potential of the Province's coal resources to improve the effectiveness for exploration and development.
- To develop and maintain an up-to-date inventory of the quality and quantity of the Province's coal resources.
- To maintain and curate COALFILE, a computer based file of coal exploration data.
- To promote the development and utilization potential of the Province's coal resources.
- To provide advice to government on coal research and development.
- To participate in inter-provincial coal research projects.
- To maintain and curate a library of coal exploration assessment reports.

### STAFFING AND RESOURCES

6 FTEs, \$484,100.

### ACTION PLAN

ACTIVITY	RESPONSIBILITY	OUTPUT
Regional and deposit scale geological studies	Kilby, Kenyon, Ryan, Grieve	Bulletins, Papers, Open File reports, poster sessions, talks
Coal Quality studies	Grieve, Matheson	Coal quality brochure and catalogue
COALFILE	Kenyon	File data and print-outs
Coal Assessment Reports	Kenyon	Public access
Promotion of development potential	All Staff	Talks and poster sessions, consultations
R & D advice	Kilby, Ryan	Internal briefings and consultations

NEW INITIATIVES	RESPONSIBILITY
Staffing of Coal Project Geologist position and initiation of regional assessment of "frontier coal" in northeastern British Columbia.	Kilby

## PROSPECTORS ASSISTANCE AND TRAINING

### OBJECTIVE

- To implement and administer the prospector grant program in a timely and accountable manner to encourage mine finding.
- To organize and deliver the Advanced Prospecting Course and basic training courses as required.
- To prepare and provide rock and mineral teaching sets for internal and external use.

### STAFFING AND RESOURCES

2 12-month contractors, \$500,000.

### ACTION PLAN

ACTIVITY	RESPONSIBILITY	OUTPUT
Grant program	Preto, Pardy	Review of application and award grants Grantee database and performance reports Field visits to grantees
Advanced and basic prospecting courses	Pardy, Preto, District Geologists	Courses delivered Trained prospectors
Rock and Mineral sets	Pardy	Sets produced



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## APPLIED GEOCHEMISTRY AND SURFICIAL GEOLOGY SECTION

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### SURFICIAL GEOLOGY UNIT

#### OBJECTIVES

- To develop a comprehensive surficial geology database of the Province to stimulate and focus industry evaluation and exploitation of surficial deposits (placer deposits, sand and gravel, etc.) and buried mineral deposits in areas of thick overburden.
- To evaluate/demonstrate the capability of drift prospecting techniques in areas of thick overburden.
- To identify high risk geologic hazards areas related to mass-movement, earthquake and volcanic activity. To coordinate and develop a geologic hazards database.
- To provide advice and information to explorationists, prospectors, government and other agencies, and the general public.

#### STAFFING AND RESOURCES

2.5 FTEs, \$100,000.

#### ACTION PLAN

ACTIVITY	RESPONSIBILITY	OUTPUTS
Mapping and evaluation of placer/surficial	Levson	Open Files Fieldwork reports
Development of a placer deposit database	Levson	Open File
Assessment of drift prospecting techniques	Bobrowsky, Levson	Open Files
Coordinate and develop geological hazards database	Levson, Bobrowsky	Provincial hazards database

#### NEW INITIATIVES

Initiation of Surficial Geology Program responsible for systematic mapping and evaluation of surficial deposits, assessment of drift prospecting techniques, identification of high risk geologic hazards and development of a Placer deposit database.

## APPLIED GEOCHEMISTRY UNIT

### OBJECTIVES

- To provide baseline geochemical data for use by explorationists and government planners by conducting Regional Geochemical Surveys.
- To conduct field orientation studies and complimentary applied geochemical research for more effective use of geochemistry.
- To develop methods in the processing and interpretation of geochemical data by statistical and computer techniques.
- To assist in the delivery of the prospectors training program.
- To provide advice and information to explorationists, prospectors, government and other agencies, and the general public.

### STAFFING AND RESOURCES

4.5 FTEs, \$510,000.

### ACTION PLAN

ACTIVITY	RESPONSIBILITY	OUTPUTS
Regional Geochemical Surveys	Matysek, Gravel Jackaman	
1988 RGS Data Release		Open Files 92E, L, K and 102I
1988 RGS Surveys 92B, C, F, G		Collection and analyses
RGS Archives 92H, I, J, O, P, 103I, J, O, P		Analyses
Orientation Surveys SE British Columbia Vancouver Island		Open Files
Prospectors Training	All Staff	Basic and advanced level courses

## ANALYTICAL SCIENCES LABORATORY

### OBJECTIVES

- To provide analyses of rock, mineral and ores in support of the Branch's geological and geochemical surveys.
- Responsible for the certification of assayers in the Province.
- To provide advice and information to explorationists, prospectors, government and other agencies, and the general public.

### STAFFING AND RESOURCES

7 FTEs, \$347,000.

### ACTION PLAN

ACTIVITY	RESPONSIBILITY	OUTPUTS
Analyses of rock, ores and minerals	Bhagwanani, Chaudry Vilkos	Trace elements Gold, XRD Whole rock
Certification of assayers	Lab Staff	2 examinations per year

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## VANCOUVER OFFICE

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### OBJECTIVES

- To ensure effective communication, consultation and liaison between Geological Survey Branch in Victoria and senior industry, government and university officials in Vancouver.
- To assist in assessing exploration trends and concepts in the Province by conducting field studies and attending meetings.
- To present talks, papers, poster sessions and promote exploration and development opportunities in B.C. at Symposiums and Trade Missions - particularly out-of-province, eg. N.W. Mining Association, Spokane.

### STAFFING AND RESOURCES

3 FTEs, \$135,700.

### ACTION PLAN

ACTIVITY	RESPONSIBILITY	OUTPUT
Geologic studies	Schroeter Staff	Fieldwork reports, Exploration Part B reports Talks and poster sessions
Publish article on Gold in B.C.	Schroeter	Article will accompany Preliminary Map 64
Prepare an annual tabulation of Discovery Methods of B.C. Mines	Schroeter	Publication in the Provincial Geologists' Journal
Review current prospectuses, Stage I and II reports as an advisor to the Mine Development Steering Committee	Schroeter	Monitoring of development

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## SCIENTIFIC REVIEW OFFICE

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### OBJECTIVES

- To compile, edit and ensure the timely and cost efficient publication of all geoscience data generated by the Geological Survey Branch.
- Draft maps and diagrams and input data and text, edit format for approximately 60 publications during the year.
- To promote easier and more convenient access to publications and data from the Geological Survey Branch.
- To coordinate the B.C. Geoscience Research Grant Program and ensure research results are made available to the public and the mining industry.

### STAFFING AND RESOURCES

5 FTEs, \$404,000.

### ACTION PLAN

ACTIVITY	RESPONSIBILITY	OUTPUT
Publication of: Exploration in B.C. Papers - 6 Bulletins - 8 Information Circulars - 30 Geological Fieldwork, 1989 Open File Maps - 20 Open File Reports 10 MINFILE - 20 map sheets Regional Geochemistry Survey - 4 map sheets Release Notifications Promotions - 8	Staff	Publications available to industry, public

NEW INITIATIVES	RESPONSIBILITY	
Implementation of computer-aided drafting	Grant, Drafting Staff	Maps, figures in digital format
Implementation of desk-top publishing technology	Grant, Staff	Improved format and processing of publications