



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



B. C. GEOLOGICAL SURVEY BRANCH

1989 - 1990 Project Inventory

Information Circular 1989-16

PREFACE

This inventory of the major projects the Geological Survey Branch will undertake in Fiscal 1989-90 is primarily designed to inform the exploration industry and interested public of the location and objectives of our 1989 field projects. Project leaders are available for consultation both during and after the field season.

The recently significantly expanded field programs will be continued this year. They are made possible by increases to the base budget of the Branch, to a total of \$6.22 million this year, and by an allocation of \$984,000 from the Canada/British Columbia Mineral Development Agreement (MDA). Projects funded by the MDA are identified by an (M) in the text. This is the last year of field activity under the current Mineral Development Agreement.

The major program for the Branch in 1989 is 1:50 000-scale regional mapping. Maps at this scale have been identified by industry as the fundamental underpinning for exploration work, yet only 5 per cent of British Columbia has been mapped at this or larger scales. Nine mapping projects will be carried out in poorly known, frontier areas of the province. These projects, together with ongoing and new projects in geochemistry, mineral deposits, industrial minerals and coal will be a valuable stimulus and guide to exploration.

Comments, suggestions, and queries regarding the Branch's geoscience program are welcome.

W.R. Smyth
Chief Geologist

**GEOLOGICAL SURVEY BRANCH
Project Inventory**

Year: 1989-90
Section: Mineral Deposits and Regional Mapping
Category: Regional 1:50 000 Mapping

Project Number	Principle Researcher	Title	Project Statement	Area	Fieldwork Days 1989	\$ Budget M = MDA A = A-base
11401	N. Massey	Sicker Project Year 4 of 4	This regional 1:50 000 geological mapping project refined the stratigraphy and structure of the Sicker Group in the Cowichan Uplift on Vancouver Island. Stratigraphic controls on the distribution of polymetallic massive sulphides have been described and a major Tertiary age thrust system has been recognized which hosts important gold mineralization. Final maps and reports for the project will be produced in 1989.	Vancouver Island	0	\$66,000 (A,M)
11402	P. Schiarizza B. Gaba	Taseko-Bridge River Year 4 of 5	Mapping in the Warner Pass (92O/3) and Noaxe Creek (92O/2) map sheets has traced regional structures into the northern Bralorne and Bridge River map sheets (92J/15, 16). Metallic mineral occurrences vary from high temperature porphyry Cu-Mo and mesothermal gold veins to low temperature Hg+Sb veins and disseminations. Mineralization, from Late Cretaceous to Early Tertiary, was coincident with several pulses of igneous activity and strike-slip and extensional faulting. The 1989 field program will complete the mapping of the Bralorne and Bridge River area and will focus on the structural and stratigraphic/plutonic setting of mineral occurrences.	92J/15, 16	90	\$150,000 (M)
11403	L. Diakow J. Drobe	Whitesail Lake Year 4 of 4	The Whitesail Project is a 4-year regional 1:50 000-scale mapping program. It began in 1986 with the mapping of Whitesail Reach map area (93E/10) and continued with the mapping of the eastern half of Troitsa Lake (93E/11), Chikamin Mountain (93E/6) and the	93E/13	100	\$144,000 (A,M)

northern half of Newcombe Lake (93E/14) map sheets. The aim is to assess resource potential and encourage exploration by producing high quality geological maps. The project will conclude in 1989 with the completion of Nanika Lake map area 93E/13.

11404	J. Nelson	Midway-Cassiar Project Year 4 of 4	The Cassiar mining camp has been one of the longest-lived hard-rock mining camps in northern B.C. Asbestos production has been continuous since 1952 and sporadic gold production since 1934; the latter includes the currently active Erickson gold mine, which opened in 1978. In spite of this, little exploration has occurred outside of the main camp. Over the past three years the Midway-Cassiar regional mapping project has provided detailed, 1:25 000-scale geological base maps and rock and stream sediment data for a 2500 square kilometres area around the Cassiar camp. The project is now in the final write-up and completion stage.	104O/16 104P/12, 6, 5	30	\$80,000 (M)
MD403	D. MacIntyre P. Desjardins	Telkwa Project Year 3 of 4	Anomalously high concentrations of gold occur in silt samples collected during the 1986 Regional Geochemical Survey from several drainages in the Telkwa Range southwest of Smithers. There are no known gold bearing mineral occurrences in this area. The Telkwa project will define the sources of gold by detailed silt sampling and geologic mapping of the anomalous area to encourage additional exploration. Geological mapping will help create a genetic model for mineral deposits in the Telkwa Range.	Telkwa Range 93L/6	90	\$169,000 (A)
MD801	M. Mihalynuk	Tagish Project Year 3 of 4	Past producers like the Engineer and Polaris Taku mines lie along a northwest structural trend. The Tagish Project began work along this trend in the Tutshi Lake area and continues to extend mapping southward along this zone of high precious metal potential into the Edgar Lake area. Work will include geological	104M/8 104N/5W	100	\$169,835 (A)

mapping and complementary stream sediment geochemical surveys to define the settings of known mineral deposits and outline areas favourable for exploration for new deposits.

MD901	F. Ferri D. Melville	Manson Creek Year 3 of 4	The Manson Creek-Germansen Landing area is a long known producer of placer gold in British Columbia. It contains bedrock occurrences of precious and base metals, barite and rare earths. This project, currently in its third year, will produce detailed geological, geochemical and mineral occurrence maps that will assist exploration efforts for base and precious metal deposits.	93N/15 94C/2	100	\$169,500 (A)
MD1002	D. Brown M. Gunning C. Greig	Stikine Project Year 2 of 4	The project area, at the eastern edge of the Coast Belt, lies along the northern extension of the Iskut Gold camp. The project provides an excellent opportunity to improve our knowledge of the Permian to Tertiary stratigraphy and structure. Geological mapping will focus on the geological setting of mineral occurrences and their controls. Metallogenic models resulting from this study may be utilized by the exploration community in their search for new skarn, vein gold, porphyry copper-gold and other mineral deposits.	Chutine River and Yehiniko Lake 104G	90	\$170,000 (A)
MD1102	J. Logan	Iskut-North Year 2 of 4	Mesozoic volcanics and sediments of the Stuhini and Hazelton Group underlie a new gold-producing camp that stretches north from Stewart to Galore Creek. The Iskut-North map area covers the north end of this belt and contains Jurassic gold-bearing veins, shears and skarn-type replacement zones. Stratigraphy and areas of high mineral potential, defined in 1988 for the Galore Creek area, will be traced southward into the 104B/15 map area. The focus of this 1:50 000 program is to define alteration, mineralization and structures as important ore deposits controls.	Forrest Kerr map area 104B/15	75	\$170,000 (A)

MD1201	M.A. Bloodgood K. Bellefontaine	Atlin Project Year 2 of 3	<p>The Atlin area has had a long and productive placer gold history, though no bedrock source for the prolific placers has yet been found. Current bedrock exploration has focused on vein-hosted gold mineralization. Other precious metal deposit types include skarns, veins and porphyry systems (related to Cretaceous plutonism) and vein-hosted silver-lead systems with associated copper and gold which may be related to Tertiary igneous activity. Regional mapping south of Atlin will examine the Paleozoic Cache Creek Group sedimentary and volcanic rocks which host gold-bearing quartz veins and stockworks. Mapping of the Cretaceous McMaster stock may define related skarn, vein or porphyry-type mineralization.</p>	104N/5E 104N/6	100	\$160,000 (A)
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**GEOLOGICAL SURVEY BRANCH
Project Inventory**

Year: 1989-90
Section: Mineral Deposits and Regional Mapping
Category: Mineral Deposits and Metallogenic Mapping

Project Number	Principle Researcher	Title	Project Statement	Area	Fieldwork Days 1989	\$ Budget M = MDA A = A-base
MD101	B.N. Church	Geology and Mineralization in the Bridge River Mining Camp Year 4 of 4	The Bridge River Mining Camp remains foremost in historical gold production in British Columbia. Most of the area is staked. The object of this study is to re-evaluate the mineralization and geology of the Bridge River mining camp in the light of new mining activity in the area. Fieldwork is not planned for 1989; efforts will be a toward final report scheduled for completion in 1990.	Bridge River 92I/10, 15 92O/2	0	\$55,500 (A)
MD202	A. Panteleyev	Quesnel Mineral Belt Year 4 of 4	The project studied the geological framework for mineral deposits in the Quesnel Mineral Belt. A summary paper and 1:1 000 000-scale compilation map is being prepared in review of fieldwork and research conducted from 1986 to 1988. The paper describes the geology and mineral potential of the Triassic/Jurassic volcanic arc. Mineral deposits of note are alkalic stock-related porphyry copper-gold deposits, auriferous quartz veins and the QR deposit, a new type of gold occurrence in propylitized basaltic rocks. Bedrock sources of placer gold in the Miocene and younger Horsefly River drainage system are considered.	Quesnel River and Horsefly Lake 93A, B	0	\$55,500 (A)
MD303	T. Höy K. Andrew	Rossland Project Year 3 of 4	The Rossland camp is the second largest historical gold producer in British Columbia. It is hosted by volcanic rocks of the early Jurassic Rossland Group which extend in a belt northeastward to Nelson. This belt has seen a recent revival in exploration activity, which has led to the opening of a	Nelson 82F/3, 4	90	\$147,500 (A)

number of mines, including the Arlington, Granite-Poorman and, in the near future, the Blackcock mine at Ymir. The objective of this project is to better define the controls of precious metal vein deposits, copper-gold and molybdenum porphyries, stratiform sulphide deposits and various skarns, including the Second Relief gold skarn.

MD504	G.E. Ray I.C.L. Webster	Base and Precious Metal Skarns Year 1 of 3	The purpose of this new project is to investigate the origin, distribution, mineralogy and geological controls of B.C.'s base and precious metal skarn deposits and occurrences. The skarn-hosted metal reserves of the province will be documented and ore deposit models defined. Hopefully this will lead to the discovery of ore control guidelines to aid exploration for new deposits. An initial 1:20 000 mapping and mineral deposit study of the Texada Island mining camp will be the first phase of the larger study of the controls and metallogenesis of the province's skarns.	Texada Island (north)	50	\$124,000 (A)
MD604	D.J. Aldrick J.M. Britton	Iskut-Sulphurets Project Year 3 of 4	The Iskut-Sulphurets Gold Belt is one of the most active mineral exploration camps in B.C. Two gold mines have come into production since 1981; three other properties are in advanced stages of exploration, yet the geology of the area is not well known. Parts of it have never been mapped and existing geology maps are 20 to 60 years out of date. The purpose of this project is to fill this gap for the mineral exploration industry.	Boundary Ranges 104B	68	\$196,000 (A)
11330	G. Nixon	Ultramafic Year 3 of 3	The project is intended to make a preliminary evaluation of the economic potential of Alaskan-type ultramafic-mafic intrusive complexes and to establish exploration guidelines for platinum group elements, chromite, Ni-Cu-Fe sulphides and other commodities through geologic mapping and geochemical sampling. The final field phase of this program is in 1989 and will examine	94C, D	90	\$150,000 (M)

ground in the southern Omineca Mountains between Lunar Creek (94E) and Polaris Creek (94C).

MD1301	C. Ash R. Arksey	Listwanite Project Year 1 of 2	This new study will develop a model that relates listwanite alteration in its tectonic and geologic setting to mesothermal gold mineralization. Listwanite is a term for a yellowish-green, schistose rock composed of quartz, dolomite, magnesite, talc, limonite and the green mica, mariposite, it is often formed along major faults. This alteration is caused by carbon dioxide-rich fluids which may have carried gold. This project will examine areas of known listwanite alteration of Bridge River, Cassiar and Atlin, then check areas along the Pinchi Fault, where similar alteration is suspected.	British Columbia	90	\$118,00 (A)
MD1401	J.M. Moore R. Meyers	Thompson Project Year 2 of 3	The Nicola volcanics and related intrusions in south-central British Columbia host major copper and copper-gold deposits. The Thompson Project, evolved from the LITHO-PROBE Project carried out in 1988/89, will compile existing geological information for the area between Merritt and Kamloops, and will map stratigraphy and structure. Most of the work will be in the central and eastern parts of the Nicola belt, where there are copper-gold vein and porphyry deposits. The study focuses on Nicola stratigraphy and tectonism, and their relationship to mineralization.	Parts of 92I/7, 8, 9, 10	60	\$41,000 (A)
Section: Vancouver Office						
G1317	T.G. Schroeter	Gold in British Columbia Ongoing	This project comprises several years' field and office studies investigating the economic geology and exploration potential of gold deposits in B.C. A report entitled <i>Gold Production and Reserves in British Columbia</i> will be published. In 1989, field visits to active gold camps will include: Windy Craggy, Atlin, Tulsequah, Eskay Creek., Stewart area, Toodoggone, Mount Milligan-Tas, Indata, Samatosum, Vault, Debbie and others.	British Columbia	45	\$40,000 (A)

GEOLOGICAL SURVEY BRANCH
Project Inventory

Year: 1989-90
Section: District Geology and Coal Resources
Category: Regional Metallogenic Studies

Project Number	Principle Researcher	Title	Project Statement	Area	Fieldwork Days 1989	\$ Budget M = MDA A = A-base
DL2	D.V. Lefebure	Metallogeny of Northwestern B.C. Ongoing	This is a study of precious metal deposits in the Coast Plutonic Complex south of Prince Rupert and in the Tertiary Ootsa Lake Group volcanic rocks of the Nechako Plateau. These activities will produce mineral deposit descriptions and compilation maps to be used in developing ore deposit models. A knowledge-based computer interpretation is planned for the gold deposits in the Coast Plutonic Complex. Initial research is planned for major volcano-genic massive sulphide deposits within the District.	Douglas Channel, Francois Lake, Northwestern British Columbia	120	\$125,000 (A)
TF2	T. Faulkner	Metallogenic Studies Central B.C. Ongoing	Monitoring exploration activity in the Central District, with detailed studies of 12 to 15 major exploration programs.	Central British Columbia	35	\$62,000 (A)
RM2	R.E. Meyers	Gold Metallogenic Studies South-central B.C. Year 2 of 4	A continuing study of the distribution, setting and character of lode precious-metal occurrences in the South-central District. Geological, geochemical, and petrographic data from a number of occurrences will be documented and published as a regional compilation. Field studies of selected deposits will incorporate exploration data with the local and regional information.	Northern Okanagan and Nicola Regions	150	\$109,000 (A)
AL2	A. Legun	Flathead Syenite Intrusions	Detailed mapping of the alkali intrusives in the Twentynine Mile Creek area will be completed this year. The relationship of intrusive activity,	Howell and Harvey Creeks	10	\$6,000 (A)

		Year 2 of 2	faulting, gold mineralization and hydrothermal alteration will be defined by petrologic and field observations. A compilation of results will be published.			
AL3	A. Legun	Metallogenic Studies Southeast B.C.	A new project initiated to describe mineral properties suggestive of new deposit types in southeast B.C. These will be reported in <i>Exploration 1989, Part B</i> . Fieldwork in 1989 will include the Summit (82F/3), Chapleau Creek (82F/11) and Albert River (82J/12) map areas.	Southeast British Columbia	30	\$104,000 (A)
PW2	H.P. Wilton	Metallogenic Studies Southwestern B.C. Ongoing	This program is to study the relationship between gold metallogeny and Tertiary volcanism, tectonics, and alteration zones on Vancouver Island. A program of sampling of ferrocarbonate alteration zones, initiated in the Mt. Washington area in 1988, will be continued and extended to the south and west. New aspects of the project will include a review of mineralization associated with roof-pendants in the southern part of the Coast crystalline complex, and of the distribution and characteristics of porphyry mineralization and skarn occurrences in the Insular belt.	Southwestern British Columbia	130	\$110,000 (A)

**GEOLOGICAL SURVEY BRANCH
Project Inventory**

Year: 1989-90
Section: District Geology and Coal Resources
Category: Coal Studies

Project Number	Principle Researcher	Title	Project Statement	Area	Fieldwork Days 1989	\$ Budget M = MDA A = A-base
WK1	W. Kilby	Tumbler Ridge Year 3 of 3	The Tumbler Ridge area contains extensive hydrocarbon resources in the form of coal and gas and includes two producing coal mines and several producing gas fields. There is active coal and gas exploration. This project will: (1) update the initial products of the study, four 1:50 000 Open File maps; (2) complete mapping in adjacent areas of the inner and outer foothills; and (3) integrate all existing exploration data from the coal and oil industry. The project will produce comprehensive stratigraphic description of the coal-bearing strata and a structural analysis of the Tumbler Ridge area.	93I/13, 14, 15 93P/2, 3, 4	30	\$45,000 (A)
WK3	W. Kilby	Digital Coal Modelling	Analysis of coal deposits by digitally processing geologic data is a developing field which has significant potential in exploration and development. This project will continue to stress deposit modelling but will expand to include geophysical analysis techniques, automated structural analysis, geostatistics and GIS uses in coal deposit analysis. Project results will include digital deposit models, Open Files of digital data and investigations of techniques which may benefit exploration and resource assessment.	British Columbia	0	\$79,000 (A)
DG1	D. Grieve	Coal Quality Ongoing	Coal quality dictates the ultimate utilization and value of a coal. The project will collect, compile and interpret quality data for B.C. coals and augment this data with analytical	E.Kootenay, Peace River, Comox coalfields	20	\$96,500 (A)

results on samples collected in the field. Specific studies in 1989/90 will focus on: controls on the concentration and distribution of the contaminant element phosphorous in metallurgical coals; controls on the concentration and distribution of sulphur and other potentially deleterious elements in thermal coals; mineral matter (low temperature ash) in thermal coals; impact of the new Universal Classification Scheme on the marketability of B.C.'s coals; and factors influencing vitrinite reflectance (rank) profiles.

CK1	C. Kenyon	Vancouver Island	This project will provide an update of the critical geologic relationships of the Vancouver Island Coal deposits. In addition it will provide data to assist industry and government in assessing the potential of these coals for the production of coal-bed methane, coal-water fuel as well as traditional thermal and metallurgical applications.	Vancouver Island 092	20	\$57,000 (A)
CK2	C. Kenyon	COALFILE Ongoing	COALFILE contains summarized exploration data from coal company assessment reports. This system provides a rapid and efficient method for accessing large volumes of data, both for industry and government agencies. The file is updated on a yearly basis and constantly maintained. Complete file listings or ad-hoc retrievals are available in map or report format, or on magnetic media.	British Columbia	0	\$8,600 (A)
AM1	A. Matheson	Subsurface Coal Sampling Survey Year 2 of 3	Sampling by small diameter coring of unoxidized coals in poorly understood and poorly sampled deposits was successfully tested at the Quinsam Mine in 1988. Core analysis allows detailed correlations between depositional environment and coal quality. Telkwa area deposits will be investigated during 1989.	British Columbia	22	\$55,000 (A)

JK1	Contract	Upper Cretaceous NEBC Year 1 of 1	To assess the coal potential of the upper Cretaceous strata of the outer foothills and plains of northeast B.C. between the Alberta and Yukon borders. These coals are thermal quality with potential markets being primarily local thermal installations, heavy oil projects and domestic heating. The study will indicate if further investigation is warranted.	Northern British Columbia 93, 94	40	\$15,000 (A)
WK4	Contract	Telkwa	Analyze the sedimentology and stratigraphic framework of the Telkwa deposit and evaluate the effect of these controls on coal seam geometry and quality. Information from previous exploration will be augmented by detailed sedimentology and stratigraphic examinations. The project will support a M.Sc. study at UBC and provide a detailed understanding of the deposit geometry and coal quality which may be applied to other similar deposits.	Telkwa	30	\$20,000 (A)

**GEOLOGICAL SURVEY BRANCH
Project Inventory**

Year: 1989-90
Section: Resource Data and Analysis
Category: Land Use Evaluation

Project Number	Principle Researcher	Title	Project Statement	Area	Fieldwork Days 1989	\$ Budget M = MDA A = A-base
06682 PW001	G. McLaren R. Schmitt	Mineral Potential of the Purcell Wilderness Conservancy Year 1 of 2	A large area of the Purcell Mountains (including the Purcell Wilderness Conservancy) is currently being evaluated for Provincial Park status. This project will define mineral potential which may be used for boundary decisions of any future park. The project will include a stream geochemical survey, extensive prospecting and 1:50 000 mapping. Currently there is an indicated potential for Sullivan-type deposits, Pb-Zn-Ag veins, skarn W and Au deposits, porphyry Mo deposits as well as Sn, Cu, rare earth and industrial mineral occurrences.	Purcell Mtns. 82F/15, 16 82K/1	70	\$185,000 (A)

**GEOLOGICAL SURVEY BRANCH
Project Inventory**

Year: 1989-90
Section: Resource Data and Analysis
Category: Industrial Minerals

Project Number	Principle Researcher	Title	Project Statement	Area	Fieldwork Days 1989	\$ Budget M = MDA A = A-base
DH008	G.V.White	Vermiculite, Perlite and Natural Pozzolans Year 1 of 1	At present, only one perlite deposit is in production and all vermiculite and pozzolan consumed in B.C. is imported, mostly from the U.S.A. This project will systematically describe and evaluate these known deposits. Out of ten known perlite occurrences in B.C. only one has been well documented. Three vermiculite occurrences with sizeable tonnage potential were reported by prospectors. A large number of glassy volcanic rocks have been reported in recent years as well as massive zeolite beds and burnt coal seams - none have been tested for pozzolanic properties.	Central and Southern British Columbia	80	\$60,000 (A)
11612	Contract	Limestone and Dolomite Year 1 of 1	The present data base for limestone and dolomite in the province is very poor. This project will produce a comprehensive inventory. At present, there are two major centers for limestone production in B.C. but they have only intermittent operations. There is a local demand for additional small-scale producers. Limestone and dolomite utilization is expected to grow, particularly in relationship to increased number of gold producers in the province. As the pulp and paper industry switch to alkaline processing they will also require limestone/dolomite resources.	British Columbia	25	\$30,000 (M)
11613	S.Butrenchuk	Barite Year 1 of 1	The project will provide an inventory of barite resources in B.C. A number of undeveloped barite occurrences occur in a variety of environments ranging from vein and replacement hydrothermal deposits to shale/carbonate hosted	British Columbia	25	\$30,000 (M)

or volcanogenic deposits. The objective is to assess potential producers by deposit size and their ability to meet industrial and environmental specifications.

11603	P.Read (Geotex Consultants)	Industrial Minerals Potential of Tertiary Basins Year 4 of 4	This project will assess the potential of Tertiary age sediments to host deposits of clay, zeolites, pozzolanic rocks, diatomite, germanium and beryllium. Detailed and regional geological mapping and prospecting is completed. Testing and analyses will be carried out and a final report summing up the results of three field seasons will be prepared.	Central British Columbia	0	\$35,000 (M)
DH0010	K. Hancock	Chromite Occurrences in British Columbia Year 1 of 1	A chromite inventory will be compiled to assist industry identify potential development opportunities for this strategic mineral. The information will be combined with data on platinum group elements (PGE) and nickel which occur in a similar geological environment. This is an office-based project utilizing GSB and other databases.	British Columbia	0	\$15,000 (A)

GEOLOGICAL SURVEY BRANCH
Project Inventory

Year: 1989-90
Section: Mineral Deposits and Regional Mapping
Category: Applied Geochemistry

Project Number	Principle Researcher	Title	Project Statement	Area	Fieldwork Days 1989	\$ Budget M = MDA A = A-base
11101	P. Matysek J. Gravel W. Jackaman	Regional Geochemical Survey Ongoing	Part of a Canada-wide survey, the RGS program produces high quality geochemical data used by the mineral sector to explore for new mines while also providing background data useful to environmental, health and land use studies. The 1989 survey will assess southern Vancouver Island and the lower mainland. Results will be published in the summer of 1990.	92B/C 92F/G	100 Total	\$185,000 (M) <u>\$315,000 (A)</u> \$500,000
MD701	J. Gravel P. Matysek	Geochemical Research Ongoing	Geochemical orientation studies in the eastern Rocky Mountains as preparation for the 1990 RGS program. These studies will define optimum sampling methods to characterize the geochemistry of elements in this environment and define problem areas. The project includes ongoing studies on moss mat, stream sediment and water sampling as well as behavioral analysis of gold, platinum and rare earths in drainage sediments and soils.	82 92	100	\$195,000 (A)
MD403	D. MacIntyre P. Desjardins	Telkwa Project Year 3 of 4	Anomalously high concentrations of gold occur in silt samples collected during the 1986 Regional Geochemical Survey from several drainages in the Telkwa Range southwest of Smithers. There are no known gold bearing mineral occurrences in this area. The Telkwa project will define the sources of gold by detailed silt sampling and geologic mapping of the anomalous area to encourage additional exploration. Geological mapping will help create a genetic model for mineral deposits in the Telkwa Range.	Telkwa Range 93L/6	90	\$169,000 (A)

**GEOLOGICAL SURVEY BRANCH
Project Inventory**

Year: 1989-90
Section: Resource Data and Analysis
Category: Mineral Database

Project Number	Principle Researcher	Title	Project Statement	Area	Fieldwork Days 1989	\$ Budget M = MDA A = A-base
06683	L. Jones C. Borsholm	MINFILE Ongoing	MINFILE is the B.C. Geological Survey Branch's computerized mineral inventory and geology database of over 10,000 mineral occurrences. Coding of the database is 54% complete, of which 20% is released. Coding of 3000 occurrences and the release of 22 map sheets is planned for the 1989-90 fiscal year and this data will cover about 40% of the Province. MINFILE/pc, a search and report program for the personal computer, will be enhanced with a data entry module.	British Columbia	N/A	\$350,000 (A)
06684	T. Kalnins L. deGroot	Assessment Report Administration (ARIS) Ongoing	The Geological Survey Branch reviews assessment reports (approx. 1200/year) for compliance with the Mineral Tenure Act Regulations. An assessment report library of more than 18000 reports is maintained. The ARIS computer database is maintained and an index, (paper, fiche and diskette formats) location maps and summaries of assessment reports are published.	British Columbia	N/A	\$200,000 (A)

GEOLOGICAL SURVEY BRANCH
Project Inventory

Year:	1989-90				
Category:	B.C. Geoscience Research Grant Program				
RG	RESEARCHER (Supervisor) (Institution)	Title	Project Statement	Area	\$ Grant A = A-base
					89/90 Grant
01	S. Kocsis (N. Eyles) (U. of T.)	Cariboo Au- Placers	Stratigraphy and sedimentology of Pleistocene placers in Cariboo Mining District. Project will entail further mapping and use of sonic drill (2 holes) and high resolution seismic to identify economic controls to placer deposits. Will investigate similar deposits in Atlin, Cassiar and Omineca areas.	McBride 93H	\$15 000 (A)
02	P. Thiersch (A.E. Williams-Jones) (McGill)	Shasta Au-Ag	Research will focus on wall-rock alteration, sulphide precious metal paragenesis and physio-chemical controls. Objective is further understanding of Toodoggone style epithermal mineralization and this research will attempt to identify deposit characteristics which could provide useful exploration guides the Toodoggone camp.	Toodoggone River 94E	\$ 2 000 (A)
03	R. Hardy (Bruce Nesbitt) (U. of Alberta, Edmonton)	Sheep Creek Au	Research on the geology and geochemistry of gold mineralization in Sheep Creek Camp near Nelson B.C. Sheep Creek is seventh largest historic gold producing camp in B.C. Objectives are to define ore controls, genesis and distribution of gold within the camp.	Nelson 82F	\$ 5 000 (A)
04	G. Beaudoin (Don Sangster) (U. of Ottawa)	Slocan Ag-Pb-Zn	Research will include a detailed geological evaluation of selected deposits in order to generate common geological, petrological and geochemical data from the Slocan, Sandon and Ainsworth areas. Objective is to describe the metallogeny of the Ag-Pb-Zn vein deposits, produce a genetic model and to identify exploration guidelines applicable in similar settings.	Slocan 82K	\$ 5 000 (A)
05	V. Marcille	Sedimentary	The researcher proposes to investigate the suit-	B.C.	\$ 5 000 (A)

	(U. of Guelph)	Phosphates	ability of phosphates from the Fernie Basin for direct agricultural applications. Complimentary to this is testing to determine if zeolites from the Princeton basin can increase solubility of rock phosphate.		
07	D. MacDonald (Dr. R.W. Hodder) (U. West. Ontario)	Silbak-Premier	Proposal for fluid inclusion studies on material already collected from Silbak-Premier. Research will compliment work being carried out by the GSB in the area and further clarify a genetic model for the Silbak-Premier deposit.	Iskut River 104B	\$ 3 200 (A)
08	P. Bartier (C. Peter Keller) (U. Victoria)	GIS	The research will investigate GIS systems and applications in a geological environment, particularly GSB applications. The project will also include a pilot study in the Stewart area, at 1:50 000 scale to demonstrate applications of a geology based GIS and to identify costs, personnel and other resources needed to support a GIS environment.	B.C. 104B, A	\$ 4 500 (A)
09	J. Knight (K.C. McTaggart) (U.B.C.)	Trace elements in gold	The researcher proposes to fingerprint lode and placer gold samples from various areas in B.C. This research will include sampling in the McDame Creek - Erikson Mine area complimentary to J. Nelson's regional mapping for the GSB.	B.C.	\$ 4 000 (A)
10	S. Cook (W.K. Fletcher) (U.B.C.)	Pt Geochem Tulameen Complex	The project will entail till sampling around the Tulameen Complex to identify mode of occurrence and background concentrations of Platinum. Researcher proposes to identify Pt and associated element distribution and determine the forms in which Pt is present.	Hope 92H	\$ 4 000 (A)
11	L. Currie (Randy Parish/ R.L. Brown) (Carleton)	Nisling Terrane Geology	The research will focus on the origin and tectonic history of the Nisling terrane of northwest B.C. In particular the project will include 1:10 000-scale mapping, petrography, and U-Pb geochronology of detrital zircons from the Boundary Ranges metamorphic suite.	Atlin area 104O, P	\$ 6 000 (A)
12	D.S. O'Hanley (Royal Ontario Museum)	Structure McDame area	Project objectives are to map the structural geology in the Mt. McDame area in the vicinity of the Cassiar Asbestos Mine and to identify ore controls	Mt. McDame 104I	\$ 3 000 (A)

			<p>in the McDame deposit. The Cassiar open pit will also be available in 1989 for mapping (it will close and be flooded afterwards). The information gained will aid design of the McDame mine and identify ore controls. The work will also lead to a fuller understanding of the tectonic contact between the Sylvester Allochthon and the platform sequences of North America.</p>		
13	J. Jackson (Dr. G.E. Gehrels) (Univ. Arizona)	Tectonic Analysis Terrane Boundaries	<p>Project is continuing from previous field-work. It will consist of 1:25 000-scale mapping of the northern Cache Creek Terrane; 1:50 000 scale mapping of granitic plutons that intrude the centre of the northern Cache Creek terrane; and additional studies of Nisling, Stikine and Cache Creek Terrane boundaries to identify geochronology and stratigraphy.</p>	Atlin area 104N, O	\$ 1 500 (A)
15	T. Appleyard (U. Waterloo)	Hedley Skarns	<p>On-site sampling at the Nickel Plate Mine. Objectives are to identify immobile elements, calculate mass-balance systematics for the altered rocks and to identify lithogeochemical parameters that correlate with ore zones. The study proposes to identify mass, density and volume changes during skarnification and to attempt to demonstrate an association between volume change patterns and distribution of economic mineralization.</p>	Hedley 92H	\$ 6 000 (A)
16	T. Calon (J. Malpas) (Memorial University of Nfld.)	Shulaps Ophiolite	<p>A second field season of work with a proposal to extend previous mapping to the east and northeast (Hogg Creek: imbricated zone). Study will focus on structural and petrological relations between the Hurley Formation; East Liza Volcanic Suite and the serpentinite mélange in the East Liza Creek area. In addition the work will include geochemical and structural studies and compilation of the emplacement history of the ophiolite complex.</p>	Pemberton 92J	\$15 000 (A)

17	S.R. Clark (A.E. Williams-Jones) (McGill)	Au-Ag ages Toodoggone Camp	Proposal to determine the age of epithermal related Au-Ag mineralization in the Toodoggone district and to place the mineralization within a lithotectonic framework of relevance to the mining industry. A large part of the research is lab based $^{40}\text{Ar}/^{39}\text{Ar}$ isotopic age determinations.	Toodoggone River 94E, L	\$ 5 000 (A)
18	H. Marsden (J.M. Moore)	Shasta	Study objectives are to define the local volcanic stratigraphy, geologic setting and structural style of the rocks containing the Shasta deposit. Products should include detailed geology, ore controls and a deposit model for the shasta.	Toodoggone River 94E	\$ 4 500 (A)
21	J. Oliver (J. Hodgson) (Queen's)	Muddy Lake	This project will continue the study of the geology and ore controls of the Muddy Lake/Golden Bear deposits. Objectives are to complete surface and U/G geological mapping and to identify the structural and lithologic controls on ore mineralization.	Tulsequah 104K	\$ 17 000 (A)
23	D. Archibald (Queen's)	Taseko Lakes	Proposal to define a tectonothermal history for part of the Taseko Lakes area, Southwest B.C. using $^{40}\text{Ar}/^{39}\text{Ar}$ dating techniques. Proposed study area experienced intermittent igneous and tectonic activity in the Mesozoic and Cenozoic. Detailed mapping indicates several episodes of magmatism, in part structurally controlled. Dating and step-heating research will yield age brackets for fault movements, and will define a chronological framework for magmatism, tectonism and mineralization in the area.	Noaxe 92J	\$ 3 600 (A)
24	J. Riddell (J. Sears) (U. of Montana)	Lillooet Lake	This project will focus on mapping the geology in the area west of Lillooet Lake. Primary objectives will be to define the structure and stratigraphy of the Cadwallader and Fire Lake groups. This will include correlations with equivalent stratigraphy in the Coast Belt.	Lillooet 92J	\$ 4 000 (A)
26	B. Johnson (R. Brown) (Carleton)	Eagle River Fault	Research will continue a program of geological mapping which will focus on tectonics of the Eagle River Fault, Shuswap Highlands. Primary objective is to trace the extent of the fault and determine its tectonic history and role in Tertiary extension. Researcher will attempt to construct a restorable crustal cross-section of the Omineca Belt.	Vernon 82L	\$ 5 000 (A)

**GEOLOGICAL SURVEY BRANCH
Project Inventory**

Year: 1989-90
Category: MDA Research Grants to the Department of Geological Sciences,
The University of British Columbia

Project Number	Principle Researcher	Title	Project Statement	Area	Fieldwork Days 1989	\$ Budget M = MDA
11324A	K. Fletcher	Seasonal variations in gold content of streams	Study of seasonal variation transport and accumulation of gold in stream sediments which may lead to recommendations for design and interpretation of exploration geochemical surveys for gold.	Okanagan	75	\$10,000 (M)
11324B	K. Halleran	Mt. Bisson Alkaline Complex	Igneous petrology relating the origin of the complex to its rare earth mineralization.	Manson Creek	20-30	\$3,000 (M)
11324C	M. Lamberson R.M. Bustin	Gates Formation Coal	Sedimentology of coal in Gates Formation is being investigated. The results of this study will lead to a better understanding of those factors that effect the quality and mineability of coal.	Northeast British Columbia	25	\$9,000 (M)
11324D	G.E. Rouse	Palynology-dating	Distinguishing and dating the various gold-bearing sands using assemblages of spores and pollen and reconstructing the environment. Dating is applied to Miocene to Recent sediments.	Quesnel, Prince George	14	\$10,000 (M)
11324F	C.I. Godwin	Galena-lead isotopes	Analysis of galena-lead isotopes from joint projects with the B.C. Geological Survey Branch as a method to optimize exploration decisions.	British Columbia	0	\$6,000 (M)
11324G	G. Dawson	Good Hope-French deposit	Detailed mapping and petrography of the Good Hope-French deposit area in the Hedley skarn camp.	Hedley	20	\$14,000 (M)

11324H	M.J. Orchard	Conodonts	Age and CAI determinations of conodont collections made by B.C. Geological Survey staff throughout the province.	British Columbia	N/A	\$5,000 (M)
11324I	A.J. Sinclair A. de Rosen-Spence Z. Radlowski	LITHCHEM	A micro computer-based system for filing, editing and interpretating chemical analyses of volcanic rocks, especially altered versus unaltered.	British Columbia	0	\$3,000 (M)