

092K/11
Bute Inlet

ARCHER, CATHRO

& ASSOCIATES (1981) LIMITED

CONSULTING GEOLOGICAL ENGINEERS

1016-510 WEST HASTINGS STREET
VANCOUVER, B. C. V6B 1L8

820769

(604) 688-2568

PROPOSED 1983 EXPLORATION
FOR BULK TONNAGE AND HIGH GRADE GOLD DEPOSITS
IN BUTE INLET AREA,
BRITISH COLUMBIA

APRIL, 1983

INTRODUCTION

Archer, Cathro & Associates (1981) Limited is seeking financing for a \$198,000 program to explore for bulk tonnage and/or high grade gold deposits on two recently acquired claim blocks in the Bute Inlet Area of British Columbia. At least eleven small mines have operated in this area up to the early 1940's, including the Doratha-Morton Mine which produced 10,000 tons of ore grading 0.44 oz/ton Au and 1.0 oz/ton Ag in the late 1890's and was the site of the first cyanide plant in British Columbia. Most of the past production came from sulphide-bearing quartz veins developed intermittently along the contacts of metamorphic rocks that form two narrow northwest-trending belts within the Coast Plutonic Complex. Although the terrain is steep, an irregular blanket of glacial till and thick vegetation made conventional prospecting difficult. This is reflected in the distribution of old workings, most of which are clustered along shorelines and ridge tops where outcrop is abundant. There is no evidence that the area has been explored for precious metals using modern techniques.

The Archer, Cathro claims cover the favourable belts between the former producers. They mostly cover areas of poor exposure that are well suited to modern geochemical and geophysical exploration methods. Further extensions of the favourable geology should also be explored and, if necessary, staked as part of the program. Our research and preliminary exploration suggest that, in addition to high grade Bonanza-type veins, the area has potential for bulk tonnage deposits either in breccia and/or stockwork zones on or peripheral to the structures hosting the veins, or in alteration zones developed in chemically reactive strata peripheral to the structures.

PROPERTY, LOCATION AND ACCESS

In late March, 1983, Archer, Cathro staked 253 units (the Eagle 1-5 and Strider 1-10 claim blocks) to cover extensions of the belt hosting the mineralization. The properties are located on the peninsula separating Loughborough Inlet and Phillips Arm, approximately 210 km northwest of Vancouver and 50 km north of Campbell River, as shown on Figure 1 on the following page. Access is by boat or scheduled float-equipped fixed wing aircraft. The area is presently being logged and crossed by an extensive road system, particularly on the Strider claims. No part of the area is more than 3 km from a good all-weather road or tide-water.

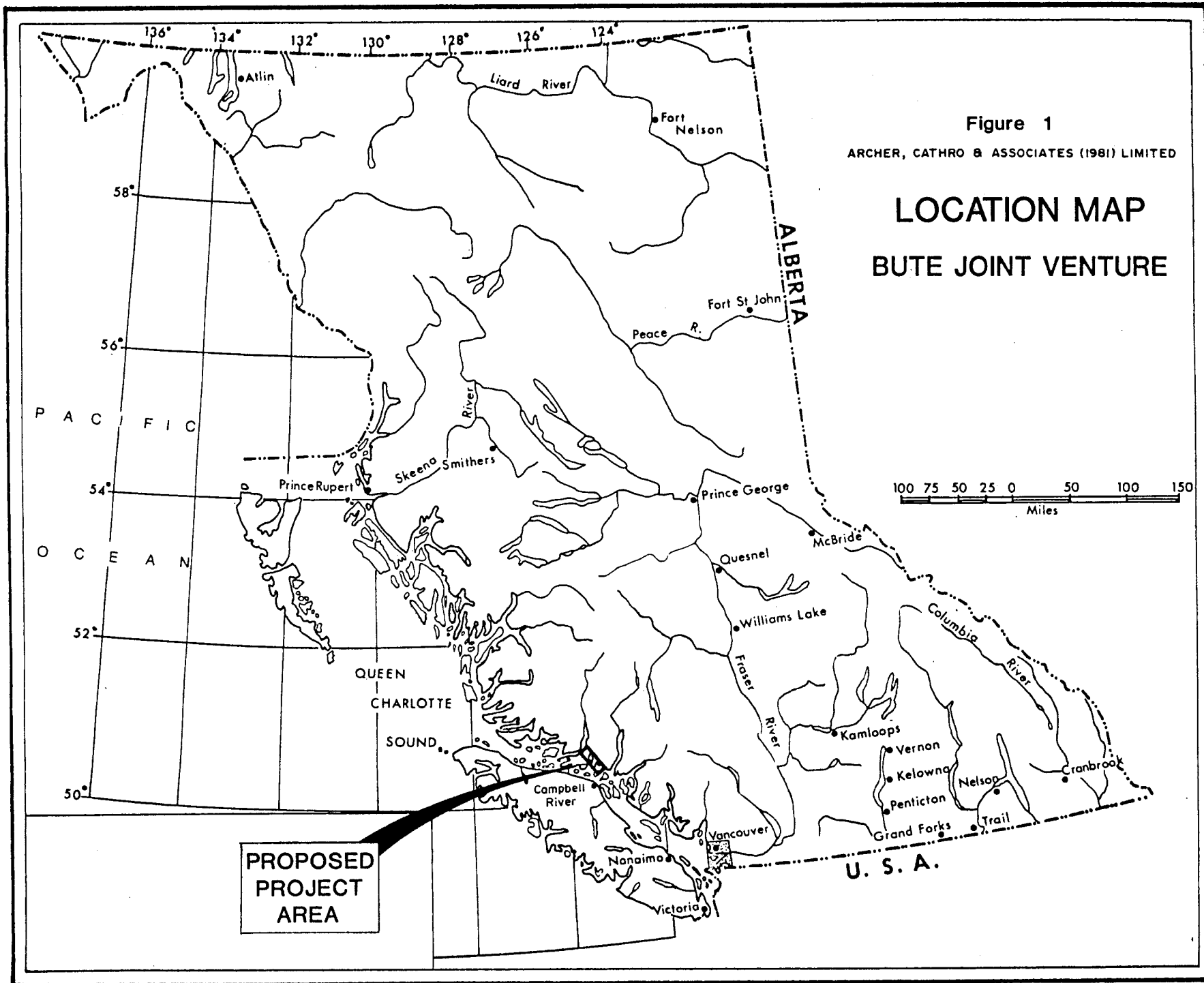


Figure 1

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

LOCATION MAP

BUTE JOINT VENTURE

GEOLOGICAL SETTING AND MINERALIZATION

The area of interest lies within the Coast Plutonic Complex and covers a series of northwest-trending bands of metasedimentary and metavolcanic rocks that separate intrusive rocks of variable composition. GSC geologists suggest that these "screens" are actually fault-bounded blocks and that the plutonic rocks on either side are likely uplifted to different levels. The stratified rocks include fine-grained clastic sedimentary rocks, limestone and volcanic and volcanoclastic rocks of probable Paleozoic to Triassic age. These underwent regional metamorphism and deformation during early Jurassic accretion of the adjacent Wrangellia terraine and later thermal metamorphism during emplacement of the intrusives. Common metamorphic equivalents range from silicified argillites, phyllites and marbles to hornfels, skarns, biotite schists, and amphibolites. The Coast Plutonic Complex rocks were intruded from late Jurassic to Eocene time, although most of those dated in the area of interest are of upper Cretaceous age. Rare dacite flows, tuffs and breccias similar to the lower Cretaceous Gambier Group may be related to this event. As the faults cut both the intrusive and stratified rocks, they are at least in part post-Cretaceous.

Gold occurrences are closely related to these structurally controlled belts and are in the form of sulphide-bearing quartz veins and silicified zones developed near the screens' contacts.

Mineralized veins have been found in both metamorphic and intrusive rock but are more common in the stratified rocks. Some of the veins are persistent over considerable lateral and vertical distances, for example the structure hosting the Doratha-Morton, Enid Julie and Alexandria Mines can be traced for a length

of 3.5 km and through a vertical range of 900 m. Sulphide occurs as irregular disseminations and pods, and includes pyrite and pyrrhotite with lesser arsenopyrite and rare chalcopyrite, galena and stibnite. Slickensides and breccia zones are common suggesting that some of the veins and silicified zones occupy pre-existing faults. In some occurrences (notably the Alexandria) assays up to 5.25 oz/ton Au and 10.2 oz/ton Ag were obtained from grab samples taken from pyrrhotite-bearing zones of pervasive silicification developed in metasediments. The veins show little evidence of open space filling or rapid change in vertical alteration and mineralogy, suggesting that they are not epithermal in origin.

The wallrocks are often strongly sheared and chloritized, and commonly exhibit narrow quartz veinlets and disseminated pyrite, pyrrhotite and chalcopyrite. The old mining operations appear to have concentrated on the quartz veins and ignored the wallrocks. Only a few assays are available from wallrocks, however they include values up to 0.13 oz/ton Au with 1.61 oz/ton Ag from a grab sample taken from the dump on the Bluebell Mine.

A low grade copper-molybdenum porphyry occurrence was found on the Strider claims during staking and a second was known from previous reports. Relatively little is known about their extent or precious metal content and since they occur in proximity to known gold mineralization there may be a genetic link to the vein mineralization.

EXPLORATION CONCEPT

Although past production in the camp has been from high grade, Bonanza-type veins, our research indicates there is excellent potential for bulk tonnage deposits in altered wallrocks or in breccia zones related to major structures controlling the vein distribution.

Several additional factors enhance the area's exploration potential:

- 1) it has excellent tide-water access and has not been explored by modern geochemical or geophysical means;
- 2) recent logging activity provides an extensive road system and has exposed a good deal of previously unexplored bedrock;
- 3) heavy equipment is available on site if required for further road construction, trenching or drill site preparation;
- 4) high grade mineralization has been discovered throughout a large area even though exposure is limited;
- 5) the mineralization occurs through a considerable vertical range, suggesting that there is good tonnage potential; and,
- 6) earlier workers concentrated on high grade occurrences as they lacked the technology to deal with bulk tonnage mining operations.

PROPOSED 1983 EXPLORATION PROGRAM

Exploration will be conducted by a 4 man crew from a tent camp using scheduled fixed wing aircraft, boat and light vehicle support during the period June 1 to September 1, 1983. The crew will be supervised by R. Carne and will consist of party chief-geologist J. Carne, a senior assistant and two junior assistants. Work will emphasize geological mapping and prospecting to define the location of major structures and the metamorphic screens; soil and rock geochemistry; and magnetic surveys (if test surveys show they are useful for defining mineralized zones). A contingency budget is also included for EM surveys and cat trenching. A summary budget is included below.

Repay Claim Staking Costs	\$ 23,000
Labour	69,000
Assaying	40,000
Field Expenses	18,000
Transportation	18,000
Office Costs and Report Preparation	12,000
Trenching and Geophysical Surveys	10,000
Management	<u>8,000</u>
TOTAL -	<u>\$198,000</u>

ARCHER, CATHRO & ASSOCIATES (1981) LIMITED

This firm has specialized in the management of all aspects of mineral exploration in the Northern Cordillera, particularly Yukon Territory, since its formation in 1966. It is currently managed by five principals (A.R. Archer, R.J. Cathro, R.C. Carne, W.D. Eaton and C.A. Main) and employs about ten permanent staff (including five senior geologists) and approximately 35 seasonal personnel. Summer field work and accounting are conducted from a permanent Whitehorse office. The wide familiarity of the firm with the metallogeny and exploration history of the region has been reflected in its Northern Cordillera Mineral Inventory, which was first published in 1972 and is now used routinely by most major mineral explorers in Yukon.

Since 1969, the firm has conceived and operated about 25 regional exploration programs, mostly helicopter-supported, in or near Yukon Territory. Most of these projects have been sufficiently successful to continue for at least three to five years. Exploration expenditures managed by the firm during this period, up to and including the initial drilling stage, have amounted to about \$18 million. Among the early achievements by the firm were discovery of three of the five undeveloped, significant copper-molybdenum deposits in Yukon (Casino, Williams Creek and Cash) and management of the initial drilling program on Amax's Mactung deposit.

In recent years, the firm has concentrated on primary, commodity-oriented exploration based on ideas generated internally. These programs led to the discovery of most of the better uranium occurrences in Yukon,

including those in the Bonnet Plume, Dawson Range and Dawson districts; the first new asbestos discoveries in the Clinton and Cassiar districts in over 25 years; and a host of new tungsten, gold and zinc-lead-silver occurrences. In addition, the firm has managed a five year drilling program on the Driftpile Creek sedex deposit in northern B.C. for the Gataga Joint Venture.

Archer, Cathro & Associates (1981) Limited is proud of its discovery record, its innovative field techniques and its ability to get the job done within budget in spite of remoteness, a short working season, rugged topography, and inflationary pressures. Recent clients have included: Armco, BP, Brinco (Cassiar), Chevron, Cominco, Eldorado Nuclear, Enterprise, Exploram, Getty, Kidd Creek (Aquitaine), Riocanex, SMDC, Sulpetro (St. Joe), Teck, Union Carbide, Union Oil and Welcome North.

CURRICULUM VITAE

R.C. (ROB) CARNE

Education

B.Sc., 1974 (University of British Columbia), honours geology
M.Sc., 1979 (University of British Columbia), geology

Work History

Field assistant during summers, base metal exploration in northern B.C. and Yukon	- 1969 to 1974
Geologist, Cyprus Anvil Mining Corp.	- 1974 to 1975
Project Geologist, Department Indian and Northern Affairs, Whitehorse, Y.T.	- 1976
Project Geologist, Archer, Cathro & Associates Limited	- 1977 to 1981
Partner, Archer, Cathro & Associates (1981) Limited	- 1981

Publications

Carne, R.C.

1976: Stratabound barite and lead-zinc barite deposits in eastern Selwyn Basin, Yukon Territory; Dept. Indian and Northern Affairs, Open File Report EGS 1976-16.

Carne, R.C.

1979: Geological setting and stratiform mineralization, Tom claims, Yukon Territory; Dept. Indian and Northern Affairs, Open File Report EGS 1979-4.

Carne, R.C. and Cathro, R.J.

1982: Sedimentary exhalative (sedex) zinc-lead-silver deposits, northern Canadian Cordillera; Can. Inst. Min. Metall., Bull. (in press).

CURRICULUM VITAE

JOAN F. (GRETTE) CARNE

Education

B.A., 1974 (Middlebury College, Middlebury, Vermont) honours geology and mathematics
M.Sc., 1979 (University of British Columbia), geology

Work History

Teaching assistant, Middlebury College and U.B.C. - 1973 to 1977 winters
Academic field assistant and thesis field work - 1974 to 1976 summers
Assistant geologist, base metal exploration, S.E. Alaska, WGM Inc. - 1977 summer
Project Geologist, base metals, N. Washington, precious metals, Lawyers Project, N. Central B.C., Serem Ltd. - 1978 to 1981
Project Geologist, Archer, Cathro & Associates (1981) Limited - 1982

Publications

Grette, J.F.
1974: Computer Modeling of Absolute Plate Motions; B.A. Thesis (unpub.), Middlebury College, Middlebury, Vermont

Grette, J.F.
1974: Plate Geometry, Absolute Motion and Tectonic Response (abs.); Vermont Geol. Soc., Spring Meeting, Burlington, Vermont.

Grette, J.F. and Coney, P.J.
1974: Absolute Motion of the Eurasian Plate: A Problem in Vector Geometry; Geology, V.2., pp. 527-528.

Grette, J.F.
1978: Cache Creek and Nicola Groups near Ashcroft, British Columbia; M.Sc. Thesis (unpub.), University of British Columbia, Vancouver, B.C.

Carne, J.
1980: Geology and Mineral Deposits of the Chilliwack Group in Washington and B.C. (abs.), G.A.C. Cordilleran Section meeting, Vancouver, B.C.

Carne, J. and Gower, S.
1981: The Discovery of the Toadoggone Gold Camp (abs.); Precious Metals in the Northern Cordillera Symposium, Vancouver, B.C.