BRENDA MINES LTD.
EXPLORATION GROUP

GEOLOGY REPORT (1979)

on

SIWASH SILVER MINERAL PROPERTY

Latitude 49° 47' Longitude 120° 20'
Similkameen Mining Division
N.T.S. 92H/16

Del W. Ferguson

February, 1980

TABLE of CONTENTS

		Page No.
I	INTRODUCTION	
	a) History of Property	1
	b) Topography and Vegetation	1
II	PROPERTY DESCRIPTION	
	a) Location and Access	2
	b) Claim Inventory	4
III	REGIONAL SETTING	6
IV	WORK PROGRAM DESCRIPTION	
	a) Grid Establishment	7
	b) Geological Survey	7
V	CONCLUSIONS	12
	BIBLIOGRAPHY	13
	STATEMENT of QUALIFICATIONS	14
	APPENDICES	
	Appendix I - Cost Statement and Account Breakdown	16
	LIST of FIGURES	
	Figure 1 - Location Map	3
	Figure 2 - Claim Map	5
	Figure 3 - Geology Map (in pocket)	

I INTRODUCTION

a) History of Property

The Siwash Creek area has been prospected since the early 1900's. Several adits have been driven into rock faces along creek banks and numerous hand trenches, following mineralized leads, have been excavated throughout the valley. Evidence of old placer workings is also apparent along the banks of Siwash Creek.

During the 1960's, mineral exploration was carried out in the area by several companies including Quality Exploration Corporation Ltd., Cyprus Exploration Corporation Ltd. and Diana Explorations Ltd. More recent work on the property was executed by E. Mullin of Princeton, B.C. and D.E. Agur of Summerland, B.C. The holdings of these persons were optioned to Brenda Mines Ltd. in April 1979 for further exploratory work.

b) Topography and Vegetation

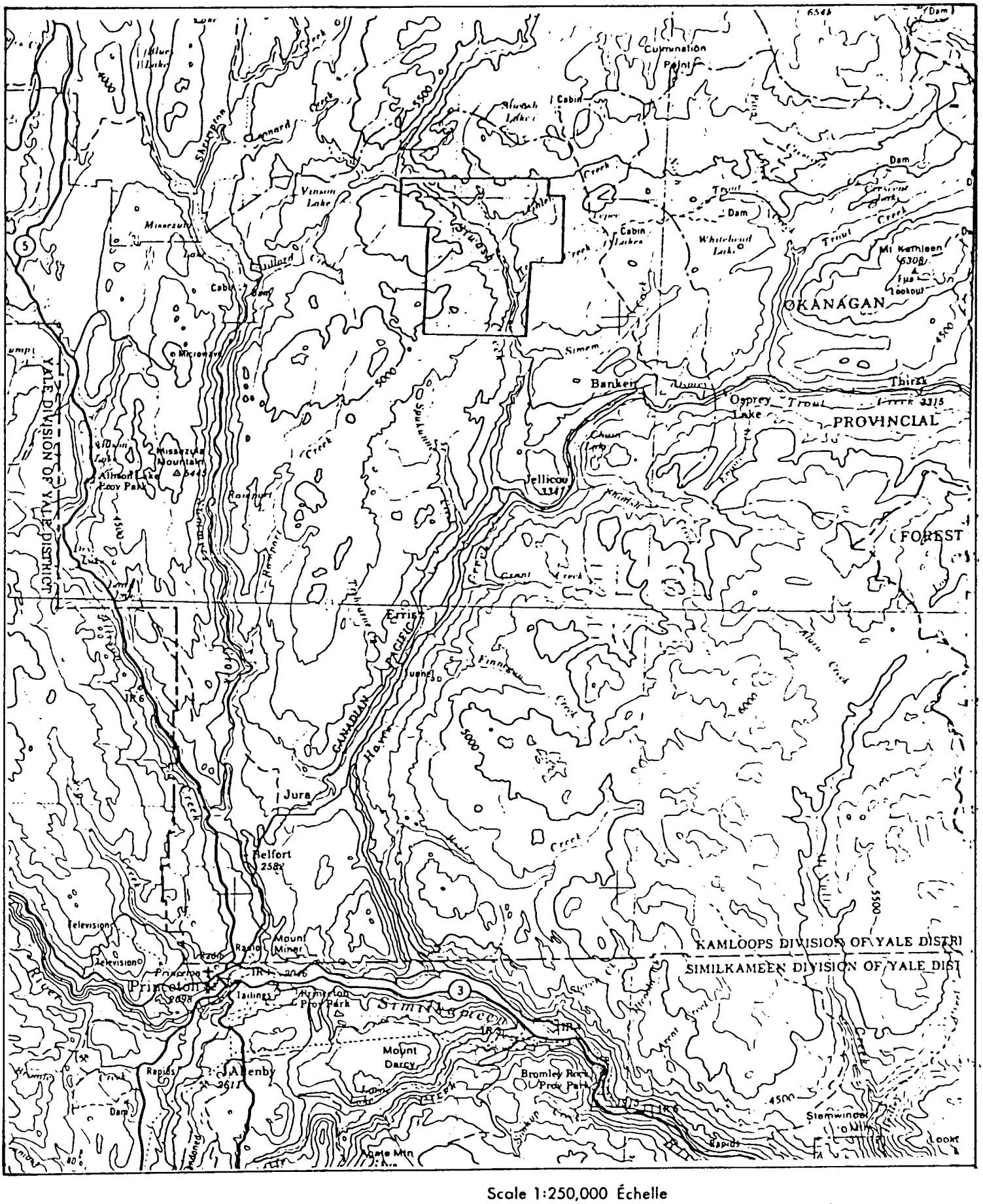
The property occupies the deep, narrow, terraced Siwash Creek valley and its surrounding plateau lands. Major tributaries include Tepee, Galena and Gavin Creeks flowing into the main valley from the east and Saskat Creek entering from the west. All of these creeks occupy the base of very steep, narrow valleys. Vegetation consists generally of well spaced stands of jackpine, fir and spruce with a lush, grassy undergrowth. Some of the more immature forests consist of tight growths of scrawny jackpine. Taigalders flourish in swampy areas within the plateau and along steep valley sides.

II PROPERTY DESCRIPTION

a) Location and Access

The Siwash Silver Property is located 38 air kilometres northeast of Princeton, B.C. The claims are situated along Siwash Creek, west of Tepee Lakes and east of Missezula Lake. There are presently two access roads to the property. One is via an 8 kilometre forestry access road which branches off of the Summerland-Princeton road, north of Osprey Lake. The other branches off of the Trout Creek logging road, 60 kilometres west of Peachland, B.C.

Figure 1 - Location Map

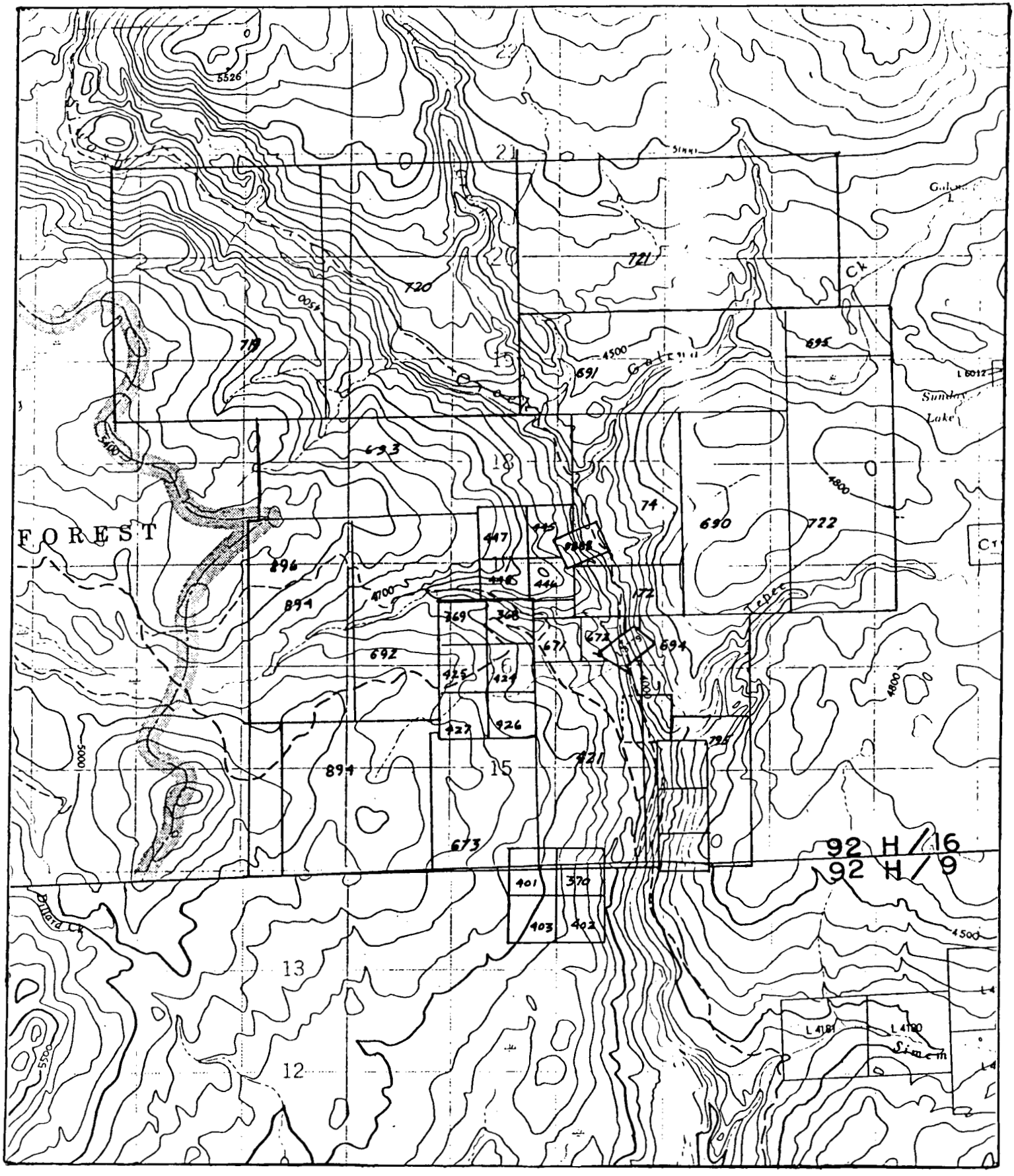


b) Claim Inventory

Claim Name	Record No.	Units	Record Date	Assessment Date
ED	74	6	June 29/76	June 29/82
ED #2	172	2	Nov. 23/76	Nov. 23/82
Saskat 1	368	1	June 29/78	June 29/84
Saskat 2	369	1	June 29/78	June 29/84
June 1	370	1	June 29/78	June 29/85
Skye 1	401	1	Aug. 15/78	Aug. 15/82
Skye 2	402	1	Aug. 15/78	Aug. 15/82
Skye 3	403	1	Aug. 15/78	Aug. 15/82
June 2	421	8	Sept. 1/78	Sept. 1/85
Pat 1	424	1	Sept. 14/78	Sept. 14/83
Pat 2	425	1	Sept. 14/78	Sept. 14/83
Pat 3	426	1	Sept. 14/78	Sept. 14/83
Pat 4	427	1	Sept. 14/78	Sept. 14/83
V.M. 1	445	1	Oct. 5/78	Oct. 5/82
V.M. 2	446	1	Oct. 5/78	Oct. 5/82
V.M. 3	447	1	Oct. 5/78	Oct. 5/82
V.M. 4	448	1	Oct. 5/78	Oct. 5/82
Jean 1	671	1	July 26/79	July 26/82
Jean 2	672	1	July 26/79	July 26/82
Hawk	673	6	July 26/79	July 26/82
Nanci P-1	690	6	Aug. 13/79	Aug. 13/80
Nanci P-2	691	10	Aug. 13/79	Aug. 13/80
Skylab	692	12	Aug. 13/79	Aug. 13/80
B & B	693	12	Aug. 13/79	Aug. 13/80
Herdel	694	4	Aug. 13/79	Aug. 13/80
Teepee	695	2	Aug. 13/79	Aug. 13/80
ARP	719	20	Sept. 13/79	Sept. 13/80
Fergito-Allendo 1	720	20	Sept. 13/79	Sept. 13/80
Fergito-Allendo 2	721	18	Sept. 13/79	Sept. 13/80
Timbo-Tavish	722	10	Sept. 13/79	Sept. 13/80
Charlie	795	6	Oct. 25/79	Oct. 25/80
Bisbee	894	9	Dec. 12/79	Dec. 12/80
~~Climax~~	~~895~~	~~18~~	~~Dec. 12/79~~	~~Dec. 12/80~~
Bingham	896	8	Dec. 12/79	Dec. 12/80
Peterson	8888			Feb. 6/87
Fissure Maiden	171 (Crown Grant)			Nov. 8/82

All claims are located in the Similkameen Mining Division.

Figure 2 - Claim Map



Scale 1:50,000

0 1 2 3 Km.

III REGIONAL SETTING

The Siwash Silver mineral property is underlain predominantly by granites, granodiorites and diorites related to the Otter Intrusions of Upper Cretaceous-Early Tertiary age. Volcanic rocks, younger than the Otter Intrusions, also outcrop throughout the property. The Siwash Creek body intrudes slightly gneissic granodiorite of the Pennask Batholith, related to the Coast Intrusions.

Several porphyritic lithologies have been noted within the area of concern. One such intrusive, a coarse grained quartz feldspar porphyry, trends east-west, extending from the Headwaters Lakes area to the Siwash Creek body. It is thought that this unit may be a border phase of the Kathleen Mountain intrusive body located to the east of Siwash Creek.

Surface mineralization occurring throughout the mineral property is hosted in:

1. Thin veinlets and brecciated areas within zones of intense chloritization and silicification.
2. Fractures crosscutting zones of intense alteration.
3. Quartz veins.

In order of abundance the following mineralization occurs within the various host environments described; pyrite, specular hematite with minor amounts of sphalerite, galena,

chalcopyrite, tetrahedrite, bornite and gold. Mineralization is not homogeneous throughout the area, but varies from one location to the next with respect to the kind of mineralization incurred and the concentrations thereof.

IV WORK PROGRAM DESCRIPTION

a) Grid Establishment

The 1979 grid has been established on a bearing of N 30° W in order to run geological, geochemical and geophysical surveys perpendicular to observed geological structures. A 2.4 kilometre picket base line trending N 30° W was cut across the central portion of the property, west of Siwash Creek. A second picket base line trending N 60° E was cut from the north end of the primary base line, easterly across Siwash Creek for a distance of 2.4 kilometres. Location lines spaced at 100 and 200 metre intervals were run across these base lines. All lines were marked at 50 metre stations for relevant surveys.

b) Geological Survey

The 1979 grid area was mapped during the months of August and September. The observed lithologies, their alteration types and structural features have been drafted on a map on the scale of 1:7500 (Fig. 2).

The main lithology in the southern half of the grid is a coarse grained granite. Zones throughout this unit are

often moderately to strongly chloritized. One such altered zone lies just west of Siwash Creek. It trends up the creek valley on a bearing of N 20° E and extends from grid coordinates 2400S - 00E to 600S - 1200E. Mineralization of hematite, copper, silver, lead and zinc is generally restricted to thin veinlets running through the highly chloritized granite, along the length of this zone.

In the northwestern part of this granite body, the alteration type changes to one of weak kaolinization to strong kaolinization and silicification. The strongly kaolinized-silicified granite most often contains disseminated pyrite-pyrrhotite. It may be crosscut by veinlets of hematite, pyrite, galena, sphalerite and copper. One vein up to 3" wide of lead and silver mineralization strikes east-west through this area dipping 50° to the south. Andesite dykes have been noted alternating throughout the granite body in several locations. Volcanics carrying mineralization of pyrite, hematite and chalcopyrite cut through the northwestern portion of this unit.

An extensive unit of quartz eye monzonite porphyry outcrops along Siwash Creek to the north of the granite body. This unit is noted underlying granitic outcrop in the previously mentioned northwestern portion of the granite body. Another outcrop of quartz eye porphyry is located in the extreme northwest area of the map sheet, alternating with

andesitic units. The quartz eye porphyry has a characteristically bleached matrix and often contains disseminated pyrite-pyrrhotite. In places along Siwash Creek, this unit has been moderately sericitized. Quartz veins and siliceous zones carrying Cu, Pb, Zn mineralization have been found throughout this porphyry, particularly in the vicinity of Three Adit Gap (1400E - 00S).

Alternating with the quartz eye porphyry along Siwash Creek are outcrops of "pebble dyke". These "pipe-like" intrusives exhibit a great range in pebble sizes (from 1 cm up to 20 cm), set in a fine to medium grained, highly weathered and bleached matrix. Most pebbles examined have a lithology representative of typical quartz eye porphyry. One such "pebble dyke", outcropping along Gavin Creek at the north end of the map sheet, is cut by numerous thin veinlets hosting chalcopyrite mineralization.

Immediately to the east of the assumed contact between the granite and the quartz eye porphyry, lies a body of coarse grained quartz feldspar porphyry. This unit is characterized by large feldspar phenocrysts, often as large as 5 cm in size, set in a medium grained matrix. Along Siwash Creek, gradational contacts have been noted between the coarse grained feldspar porphyry and the finer grained quartz eye porphyry.

In the northeastern map area, along the Galena Creek access road, and in the extreme northwest, outcrops of granodiorite predominate. Mineralization is generally restricted to thin hematite stringers cutting through this unit. It has been suggested that the highly bleached quartz eye porphyry may, in fact, be a strongly altered phase of the granodiorite.

Immediately to the west of the quartz eye porphyry outcrop on the northwestern trenches lies a slightly different type of granodiorite. It is characterized by strong biotite lineations, suggesting a metamorphic aureole surrounding the quartz eye porphyry. This unit is considered to be part of the older Pennask Batholith related to the Coast Intrusions of Mesozoic age.

Outcrops of diorite are also noted in a few locations on the grid. In the vicinity of 800S - 200E along the grid coordinates, diorite is found intruding the coarse grained unaltered granite. Along the Galena Creek access road, diorite outcrop occurs to the east of the granodiorite body.

A few outcrops of medium grained quartz feldspar biotite porphyry occur throughout the property. In the "Western Trenches" on the northwestern portion of the granite body, this porphyry is seen in contact with strongly kaolinized and silicified granite. Weathering and bleaching of outcrops hinder observations of any direct contact, however. This

same bleached quartz feldspar biotite porphyry is noted along the Galena Creek access road in close proximity to granodiorite outcrop. It may be assumed from the positioning of these outcrops, that this lithology represents a narrow unit striking N 45° E across Siwash Creek.

Rock units in the area are generally moderately to well fractured. Fracture sets possess variable strikes and dips throughout the property. Overall, dips appear to be rather steep. Mineralized veining and siliceous zones commonly follow fracture sets characteristic of the host rocks which they intrude.

Major structural trends throughout the mineral property are evidenced on aerial photographs. The dominant structure is a N-S striking fault zone following Siwash Creek and extending north up Gavin Creek. Evidence of faulting along this zone is substantiated by the presence of fault breccia located along the "Camp Show" in the highly chloritized granite. The occurrence of "pebble dykes" along the length of Siwash and Gavin Creeks also points to a N-S trending zone of weakness. Suggested east-west trending linear structures extend outward from this major fault system. Included in these are the Saskat Creek valley and the linear valleys to the north and south of Saskat Creek. Possible northeast trending structures

includes Galena, Amanda and Tepee Creek valleys. Although neither east-west or northeast trending major structures are substantiated in ground surveys, both directions have been noted as dominant fracture sets and veining structures within the Siwash Creek intrusive body.

V CONCLUSIONS

The Siwash Silver mineral property holds a perspective outlook for expansion in the form of exploratory work. The overall geology, both structural and lithological, combined with the various types of mineralization examined, strongly suggests academic similarities to the economic porphyry deposits of the Canadian Cordillera.

Bibliography

Rice, H.M.A. (1960) - Geology and Mineral Deposits of the Princeton Map Area, B.C. Geological Survey of Canada, Memoir 243

Seraphim, R.H. and Hollister, V.F. - Structural Settings - General Aspects of Porphyry Deposits of the Canadian Cordillera - Paper 5, Part A, C.I.M Special Volume No. 15, pp 30-42.

STATEMENT OF QUALIFICATIONS

I, Delbert W. Ferguson of Peachland, Province of British Columbia, do certify that:

1) I am presently employed as an exploration geologist by Brenda Mines Ltd.

2) I am a graduate of the University of Western Ontario with an Honours Bachelor of Science Degree in Geology (1979).

Delbert W. Ferguson
Exploration Geologist
Brenda Mines Ltd.

STATEMENT of QUALIFICATIONS

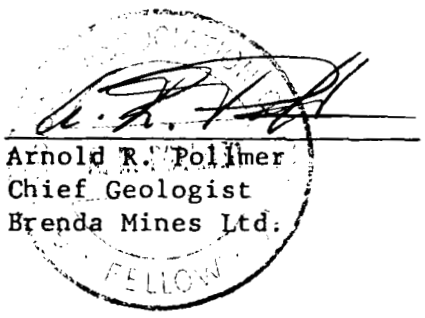
I, Arnold R. Pollmer of Peachland, Province of British Columbia, do certify that:

1) I have been employed as a geologist by Noranda Mines Limited from December 1973 to June 1977; I am presently employed as the chief geologist by Brenda Mines Ltd.

2) I am a graduate of the University of Wisconsin with a Bachelor of Science Degree in Geology (1972).

3) I am a member of the Canadian Institute of Mining and Metallurgy.

4) I am a fellow of the Geological Association of Canada.



Arnold R. Pollmer
Chief Geologist
Brenda Mines Ltd.

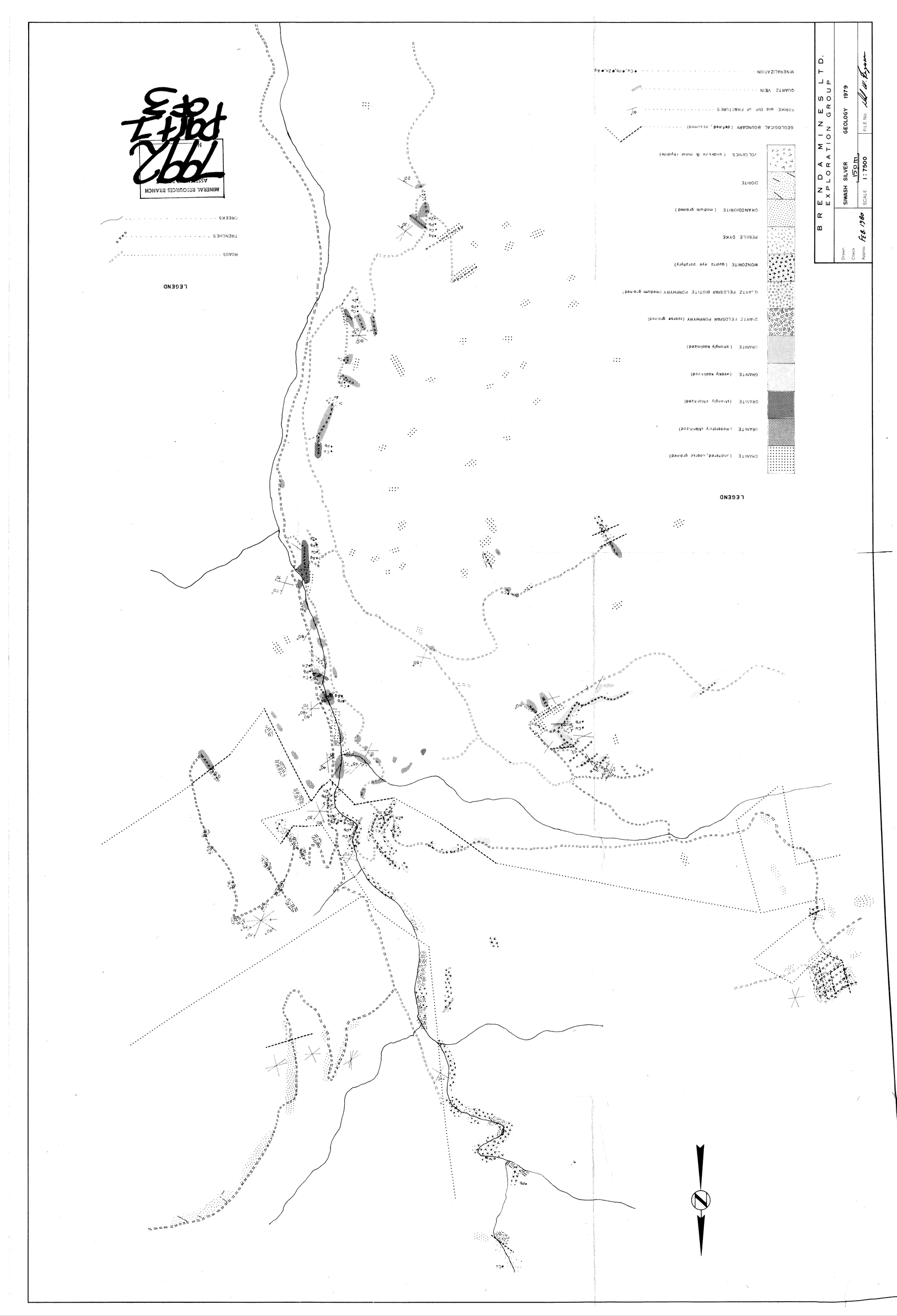
APPENDIX I

Cost Statement and Account Breakdown

Labour - 1 Geologist - $80/day) 1 Field Assistant - $70/day) - $150/day x 30 days	4,500.00
Assaying - 61 rock samples x $6.82/sample	416.04
Vehicle Rental - one 4 x 4 truck @ $15/day x 30 days	450.00
Vehicle Maintenance and Repair	670.80
Fuel Costs - $10/day x 30 days	300.00
Food Expenses - $10/man/day x 2 men x 30 days	600.00
Field Supplies - 100 plastic sample bags x $0.22/bag	22.00
Miscellaneous Field Expenses and Supplies	255.58
Accommodation	911.15
Report Preparation - 7 days x $80/day	560.00
Total Expenditures	$8,685.57

Geology was accomplished over the whole property (5 mineral groups)

Each mineral group will account for 20% of survey = $1,737.11


BRENDA MINES LTD.
EXPLORATION GROUP
SWASH SILVER
GEOLOGY 1979
150 m
SCALE 1:7500
FILE No.
Drawn:
Check:
Approv. Feb. 1980
LEGEND
GRANITE (unaltered, coarse grained)
GRANITE (moderately chloritized)
GRANITE (strongly chloritized)
GRANITE (weakly kaolinized)
GRANITE (strongly kaolinized)
QUARTZ FELDSPAR PORPHYRY (coarse grained)
QUARTZ FELDSPAR BIOTITE PORPHYRY (medium grained)
MONZONITE (quartz eye porphyry)
PEBBLE DYKE
GRANODIORITE (medium grained)
DIORITE
VOLCANICS (andesite & minor rhyolite)
GEOLOGICAL BOUNDARY (defined, assumed)
STRIKE and DIP of FRACTURES
QUARTZ VEIN
MINERALIZATION • Cu • Pb • Zn • Ag
LEGEND
ROADS
TRENCHES
CREEKS
MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
1979
#1473