

BRENDA MINES LTD.
EXPLORATION GROUP

GEOCHEMICAL SOIL REPORT (1980)

on

SIWASH SILVER MINERAL PROPERTY

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

Del W. Ferguson

November, 1980

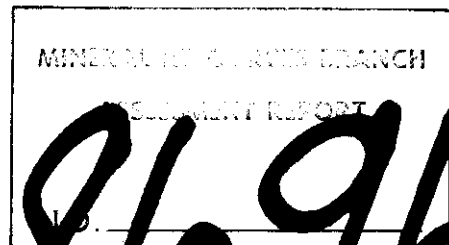


TABLE of CONTENTS

	<u>Page No.</u>	
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) Geochemical Surveys	7
	c) Treatment of Results	8
	d) Discussion of Results	8
V	CONCLUSIONS	10

LIST of FIGURES

Figure 1 - Location Map	3
Figure 2 - Claim Map	5
Figure 3 - Cu Geochem	(in pocket)
Figure 4 - Pb Geochem	(in pocket)
Figure 5 - Zn Geochem	(in pocket)

REFERENCES	11
APPENDICIES	12

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

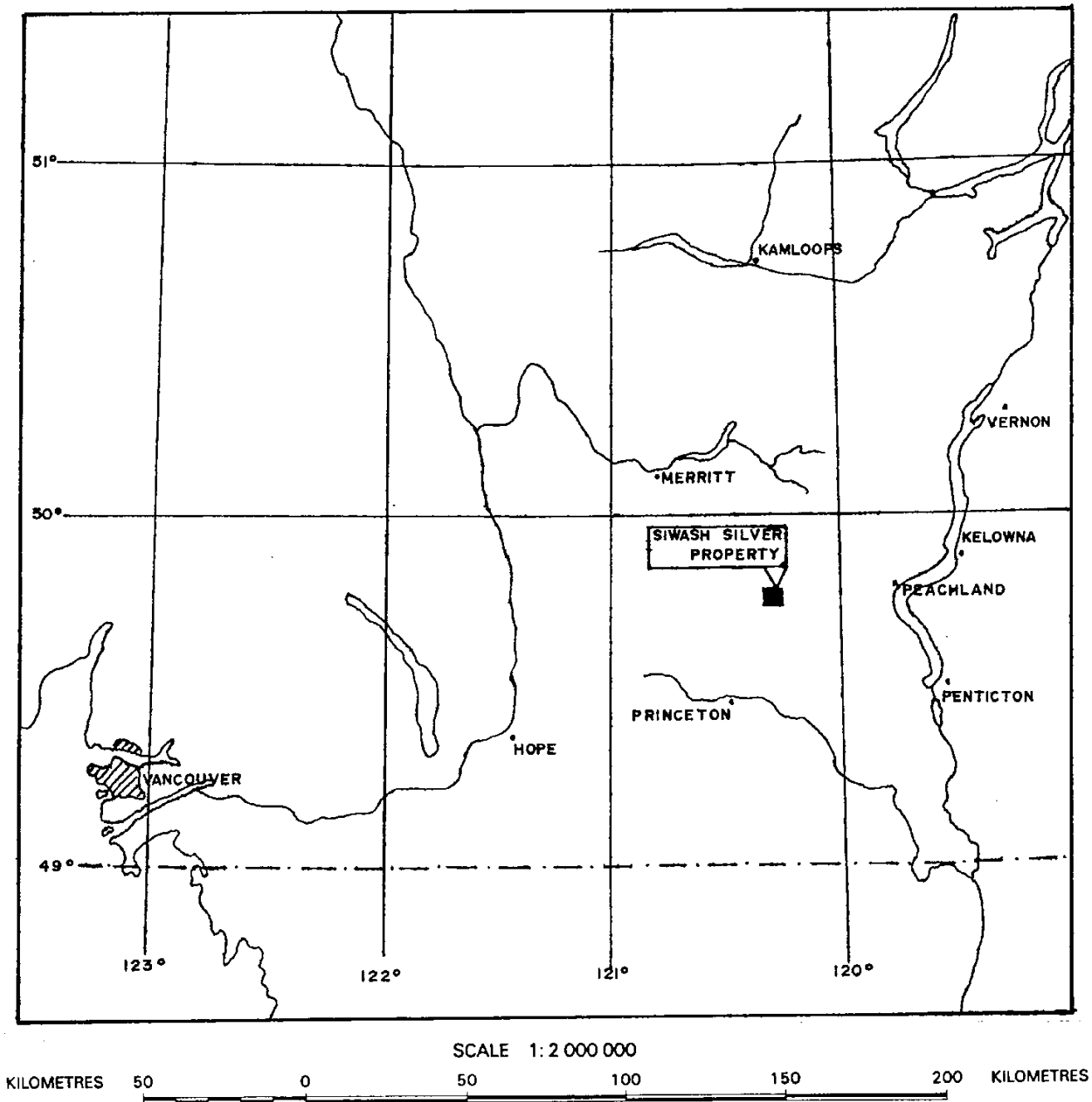
The property occupies the deep, narrow, terraced Siwash Creek valley and its surrounding plateau lands. Major tributaries include Tepee, Galena and Gavin Creeks flowing into the main valley from the east and Saskat Creek entering from the west. All of these creeks occupy the base of very steep, narrow 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

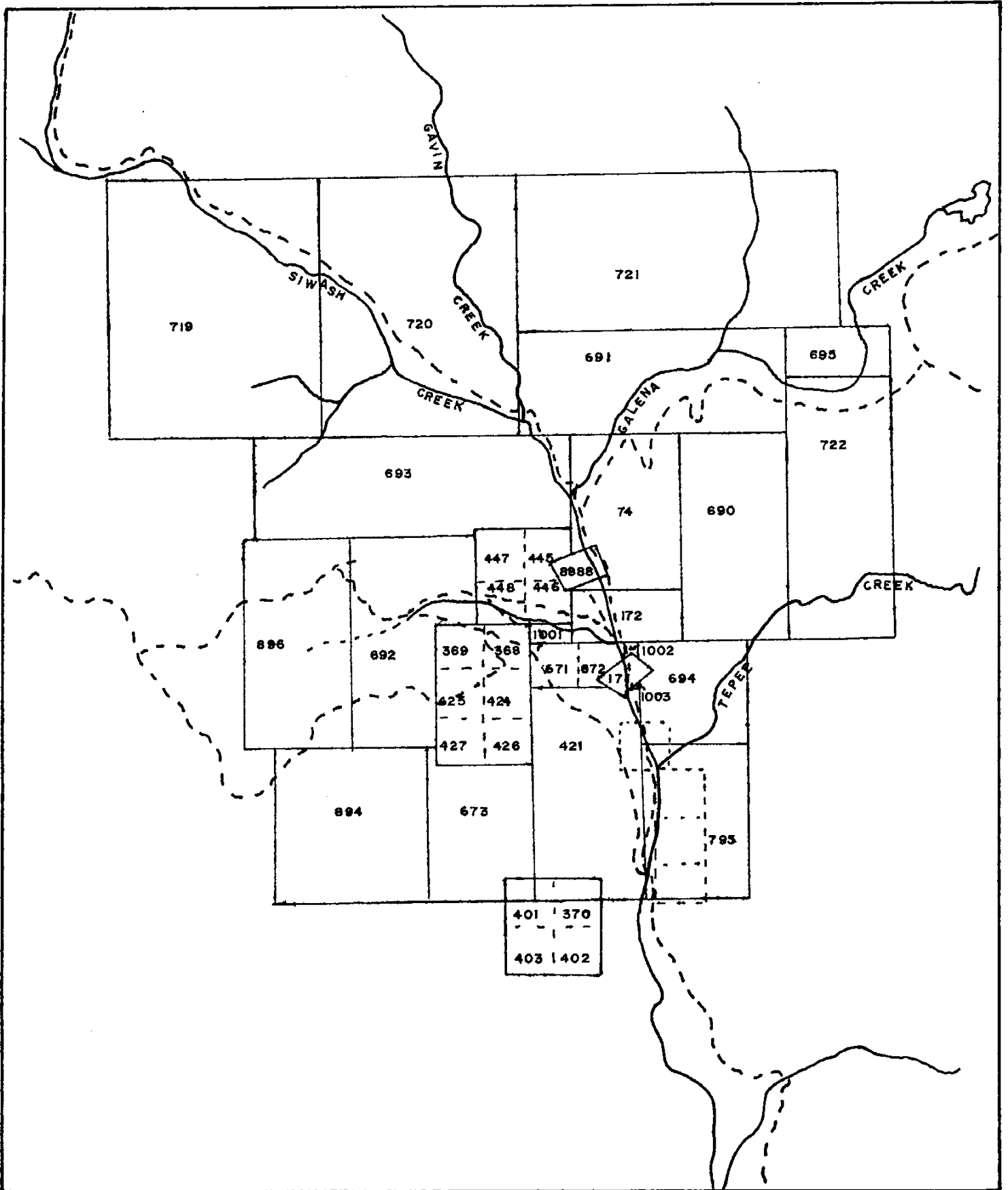


b) Claim Inventory

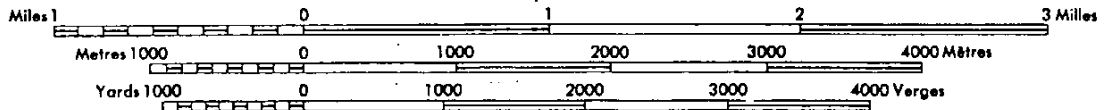
<u>Claim Name</u>	<u>Record No.</u>	<u>Units</u>	<u>Record Date</u>	<u>Assessment Date</u>
ED	74	6	June 29/76	June 29/87
ED # 2	172	2	Nov. 23/76	Nov. 23/87
Saskat 1	368	1	June 29/78	June 29/87
Saskat 2	369	1	June 29/78	June 29/87
June 1	370	1	June 29/78	June 29/86
Skye 1	401	1	Aug. 15/78	Aug. 15/86
Skye 2	402	1	Aug. 15/78	Aug. 15/86
Skye 3	403	1	Aug. 15/78	Aug. 15/86
June 2	421	8	Sept. 1/78	Sept. 1/86
Pat 1	424	1	Sept. 14/78	Sept. 14/87
Pat 2	425	1	Sept. 14/78	Sept. 14/87
Pat 3	426	1	Sept. 14/78	Sept. 14/87
Pat 4	427	1	Sept. 14/78	Sept. 14/87
V.M. 1	445	1	Oct. 5/78	Oct. 5/87
V.M. 2	446	1	Oct. 5/78	Oct. 5/87
V.M. 3	447	1	Oct. 5/78	Oct. 5/87
V.M. 4	448	1	Oct. 5/78	Oct. 5/77
Jean 1	671	1	July 26/79	July 26/87
Jean 2	672	1	July 26/79	July 26/87
Hawk	673	6	July 26/79	July 26/86
Nanci P-1	690	8	Aug. 13/79	Aug. 13/87
Nanci P-2	691	10	Aug. 13/79	Aug. 13/84
Skylab	692	12	Aug. 13/79	Aug. 13/83
B & B	693	12	Aug. 13/79	Aug. 13/84
Herdel	694	4	Aug. 13/79	Aug. 13/86
Teepee	695	2	Aug. 13/79	Aug. 13/84
ARP	719	20	Sept. 13/79	Sept. 13/82
Fergito-Allendo 1	720	20	Sept. 13/79	Sept. 13/83
Fergito-Allendo 2	721	18	Sept. 13/79	Sept. 13/84
Timbo-Tavish	722	10	Sept. 13/79	Sept. 13/82
Charlie	795	6	Oct. 25/79	Oct. 25/85
Bisbee	894	9	Dec. 12/79	Dec. 12/83
Bingham	896	8	Dec. 12/79	Dec. 12/83
Peterson	8888			Feb. 6/87
Fissure Maiden	171 (Crown Grant)			Nov. 8/86
SS 1 (fraction)	1001	frac.	Apr. 30/80	Apr. 30/81
SS 2 (fraction)	1002	frac.	Apr. 30/80	Apr. 30/81
SS 3 (fraction)	1003	frac.	Apr. 30/80	Apr. 30/81

All claims are located in the Similkameen Mining Division.

Figure 2 - Claim Map



Scale 1:50,000 Échelle



III REGIONAL SETTING

The Siwash Silver mineral property is underlain by granite, quartz-eye porphyry and quartz-feldspar porphyry related to the Otter Intrusions of Upper Cretaceous-Early Tertiary age. These units comprise the "Siwash Creek Body" referred to by Rice (1960). This body has intruded granodiorites of the Coast Intrusions, which are Jurassic in age. Older Nicola volcanics of Triassic age occur in the extreme northwest of the mineral property.

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, chalcopryite, 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 existing 1979 survey grid was extended 1,200 metres to the west via a baseline trending S 60° W. Lines were spaced at 200 metre intervals perpendicular to this baseline.

A new grid (N) was established to the north of the 1979 grid. This second baseline trends east-west and extends west from Gavin Creek for 4 kilometres and east for 3.2 kilometres. North-south lines were run at 200 metre intervals along and perpendicular to this baseline.

Later on in the year, a mini-grid extending from 5 + 00N to 23 + 00N and E to 14 + 00E was established over the B & B, Skylab and Fergito-Allendo 1 claims.

All lines were flagged and measured with a compass and topofil, being tagged at 50 or 100 metre stations for relevant surveys.

b) Geochemical Surveys

The 1980 geochemical soil survey on Siwash Silver mineral property was accomplished during the month of June, 1980. The later mini-grid soil survey was undertaken in September, 1980. Approximately 1,820 soil samples, including silts, were collected for analysis. Mattocks were implemented to obtain soils from B.F. horizons where possible. Samples were sent to Brenda Mines Assay lab for preparation and analysis (Appendix I).

c) Treatment of Results

Soil geochemical parameters have been tabulated for the Siwash Silver mineral property, using 1979 geochemical data. The same parameters are applied to the 1980 geochemical results. Parameters are as follows:

<u>Element</u>	<u>Background Value</u>	<u>Low Anomalous</u>	<u>Anomalous (Threshold)</u>	<u>High Anomalous</u>
Cu	20 ppm	40 ppm	80 ppm	160 ppm
Ag	0.5 ppm	1 ppm	3 ppm	4 ppm
Pb	35 ppm	75 ppm	150 ppm	300 ppm
Zn	230 ppm	500 ppm	1000 ppm	2000 ppm

* Rounded values from calculations

Geochemical results for each element have been plotted on accompanying maps and contoured to correspond with element distributions.

d) Discussion of Results

Soil geochemical results generally show lower values than the previous year's data.

The strongest area of Cu, Pb, Zn concentration in soils occurs to the south of the north baseline from N2 + 00E to N16 + 00W. Most of this anomaly is concentrated in the quartz-eye porphyry unit, and extends southerly along the contact between quartz-eye porphyry and quartz-feldspar porphyry. Anomalous Pb, Zn values are widespread south of

this baseline, while Cu values are more concentrated between N8 + 00W and N12 + 00W.

A second area exhibiting anomalous Cu, Pb, Zn values occurs as an isolated patch within the granite in the southwest (L14 + 00W - 15 + 00S to 18 + 00S). A similar isolated area in the southwest exhibits low anomalous Pb, Zn values (L14 + 00W - 6 + 00S).

Contact areas between the quartz-eye porphyry unit and other lithological units also exhibit low anomalous metal values. The granite-quartz-eye porphyry contact, at N14 + 00E from 8 + 00S to 14 + 00S, shows a rather large area of low anomalous Cu values, with minor isolated Zn values. The granodiorite-quartz-eye porphyry contact between lines 4 + 00W - 20 + 00N and 2 + 00W - 26 + 00N shows a narrow zone of low anomalous Cu values with associated Pb, Zn values being more widely spread in the same general area.

Areas of widespread low anomalous Cu values are characteristic of the Nicola volcanics in the extreme northwest of the map sheet.

A relatively large area of anomalous Pb, Zn values occurs within the quartz-eye porphyry unit to the north of Saskat Creek adjacent to Siwash Creek.

V CONCLUSIONS

The 1980 geochemical soil survey has succeeded in defining the extent of anomalous metal concentrations in the Siwash Creek area. Cu geochemical anomalies persisting to the northeast appear to be a phenomenon of the Nicola volcanics, and are not considered to be related to mineralization associated with the intrusive units.

REFERENCE

- Ferguson, D.W. (1980) - Geochemical Soil Report (1979) on the
Siwash Silver Mineral Property.
Government Assessment Report.
- Rice, H.M.A. (1960) Geology and Mineral Deposits of the
Princeton Map-Area, B.C., G.S.C. Memoir
243.

APPENDICIES

PREPARATION of SOILS and SILTS for GEOCHEMICAL ANALYSIS

1. Empty soil sample into the pan and then place the sample packet into the pan with the sample.
2. Place the pan containing the sample into the oven (Temp=105 C) and leave until dry approx. 2 hours.
3. Remove from the oven when dry and remove rocks and twigs etc.
4. Break up the clay lumps with a rubber bung and then transfer the sample to an 80 mesh screen.
5. Screen approx. 50 - 100 grams of sample through the screen and transfer to the original packet and seal.
6. Discard the +80 mesh fraction of the sample.

ANALYSIS by A.A. for Cu, Pb, Zn, Ag and Mo.

1. Weigh 2.00 GM on the top pan balance into a 150 ML beaker (check that beaker No. is the same as written on work sheets)
2. Add 15 MLS Nitric Acid, cover with watchglass and heat on low heat until brown Nitrous fumes are gone.
3. Remove beakers from hot plate, cool for 5 minutes.
4. Add 10 ML Hydrochloric Acid. Place on hot plate. When all brown Nitrous fumes are gone, remove watchglasses and take just to dryness on a low plate.
5. Remove from plate, cool, add 20 MLS distilled water, 5 MLS Conc. Hydrochloric Acid and boil salts into solution.
6. Cool in water bath, when cold transfer to 100 MLS Volumetric flask, add 1 MLS Superfloc solution and dilute to 100 MLS with distilled water.
7. Mix thoroughly and then transfer to original beaker.
8. When all samples ready, transfer to A.A. room for reading.
9. If Mo is required, 10.00 MLS of this solution is transferred to a test tube and 1.00 MLS of ALC_3 solution added.

ITEMIZED COST STATEMENT

1)	Line Cutting and Soil Sampling, 110 km @ \$92.26/km	\$10,148.43
2)	Transportation:	
	a) Truck Rental - 1 - 4 x 4 @ \$497.00/mo.	497.00
	1 - 4 x 4 @ \$460.00/mo.	460.00
	1 - 2 x 2 @ \$350.00/mo	350.00
	b) Fuel and Repairs	726.29
3)	Food - \$263.00/mo/man x 8 men	2,104.00
4)	Camp Expenses:	
	a) Propane	95.12
	b) Other	276.51
5)	Field Supplies:	
	a) Topofil thread - 21 spools @ \$6.96/spool	146.16
	b) Flagging - 110 rolls @ 99¢/roll	108.90
	c) Tags - 1,600 @ \$40.00/m	64.00
	d) Soil Sample Bags - 1,600 @ \$57.88/m	92.61
6)	Assay Costs - 1,600 samples x \$7.00/sample	<u>11,200.00</u>
	Total	\$26,269.02

*Statement of Exploration & Development for above
submitted to government on August 12, 1980
NWF*

COST BREAKDOWN

A) 6.8 line km were accomplished on SS-2 Mineral Group = 6% of total line km =	\$1,576.14
23.2 line km were accomplished on SS-3 Mineral Group = 21% of total line km =	5,516.49
37 line km were accomplished on SS-4 Mineral Group = 34% of total line km =	8,931.47
25 line km were accomplished on SS-5 Mineral Group = 23% of total line km =	6,041.87
18 line km were accomplished on ARP claims = 16% of total line km =	<u>4,203.04</u>
Total	\$26,269.01

B) Road Construction and Upgrading on Newfie Drive over SS-5 Mineral Group	
D-6 Cat - \$53.00/hr. x 25½ hrs. =	1,351.50
D-4 with Backhoe - \$39.25/hr. x 74 hrs. =	2,904.50
644 Loader - \$40.00/hr. x 17½ hrs. =	700.00
Truck - \$32.00/hr. x 10 hrs. =	320.00
Lowboy	200.00
Extra man - \$10.00/hr. =	<u>75.00</u>
Total	\$5,551.00

*Statement of Exploration & Development for above
submitted to government on August 12, 1980
WAT.*

Itemized Cost Statement and Cost Breakdown
for 1980 Mini-Grid Soil Survey

1)	Labour - Line Cutting & Soil Sampling; 15 man days @ \$60.00/man day	\$900.00
2)	Transportation	
	a) Truck Rental - Two 4 x 4's for 4 days @ \$16.57/day	132.56
	b) Fuel & Repairs - \$10.00/day/ vehicle x 2 vehicles x 4 days	80.00
3)	Food - \$9.00/day/man x 15 man days	135.00
4)	Field Supplies	
	a) Topofil Thread - 5 spools @ \$6.96/spool	34.80
	b) Flagging - 25 rolls @ 99¢/roll	24.75
	c) Tags - 230 Tags @ 0.04/tag	9.20
	d) Soil Sample Bags - 230 bags @ \$0.06/bag	13.80
5)	Assaying - 228 Samples x \$7.00/sample	1,596.00
6)	Report Preparation, Drafting & Typing	<u>590.00</u>
	Total	\$3,516.11

Total line km of mini-grid = 22.8


20.8 km were accomplished on the SS-4 mineral group \$3,199.66
= 91% of total line km = 91% of total money =

2 km were accomplished on the SS-3 mineral group \$316.45
= 9% of total line km = 9% of total money =

STATEMENT OF QUALIFICATIONS

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

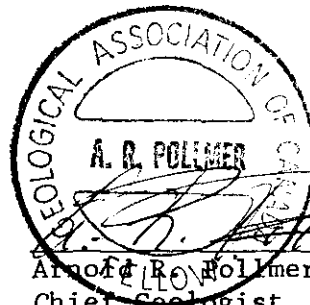
- 1) I am presently employed as an exploration geologist by Brenda Mines Ltd.
- 2) I am a graduate of the University of Western Ontario with an Honours Bachelor of Science Degree in geology (1979).


Delbert W. Ferguson
Exploration Geologist
Brenda Mines Ltd.

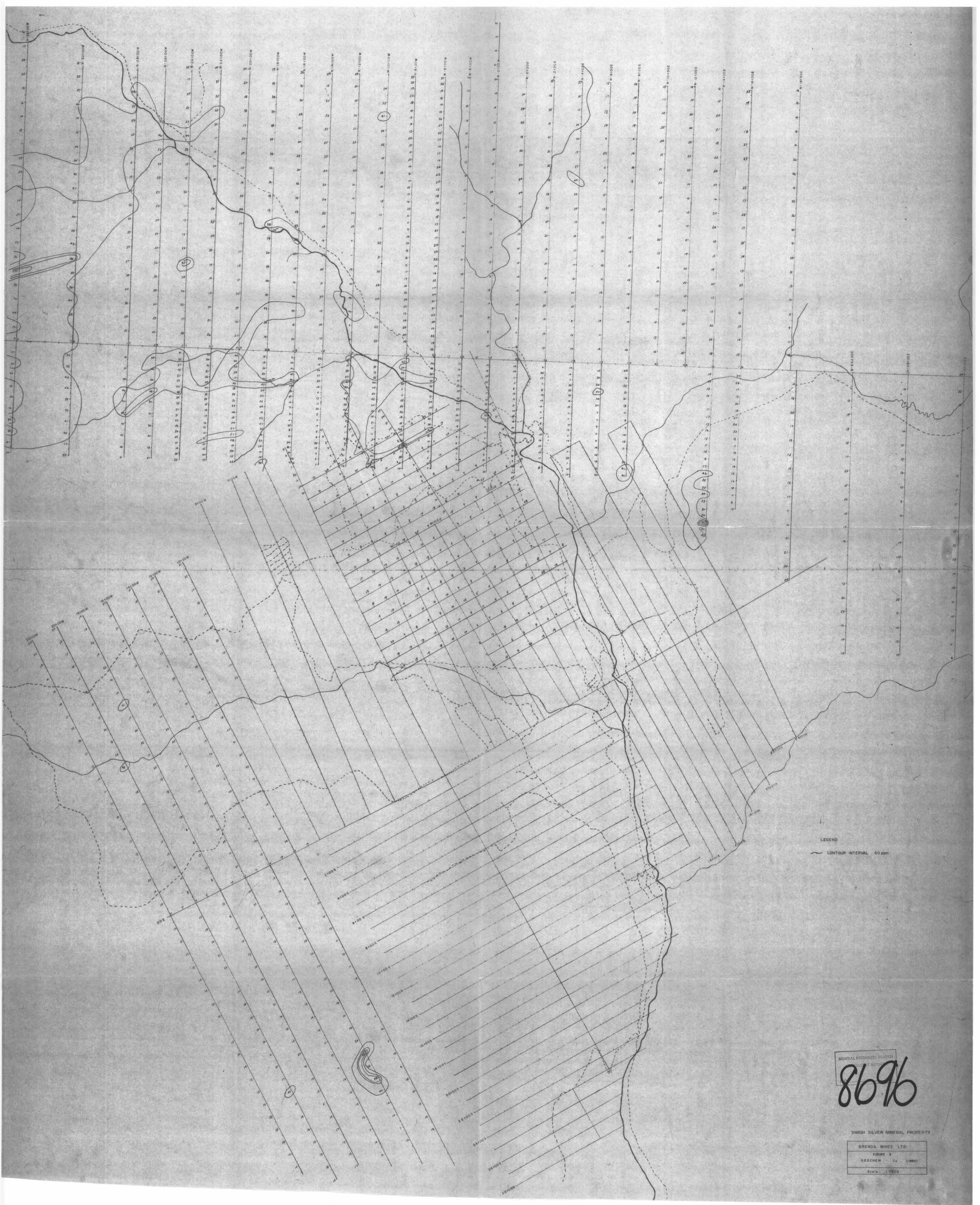
STATEMENT of QUALIFICATIONS

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.



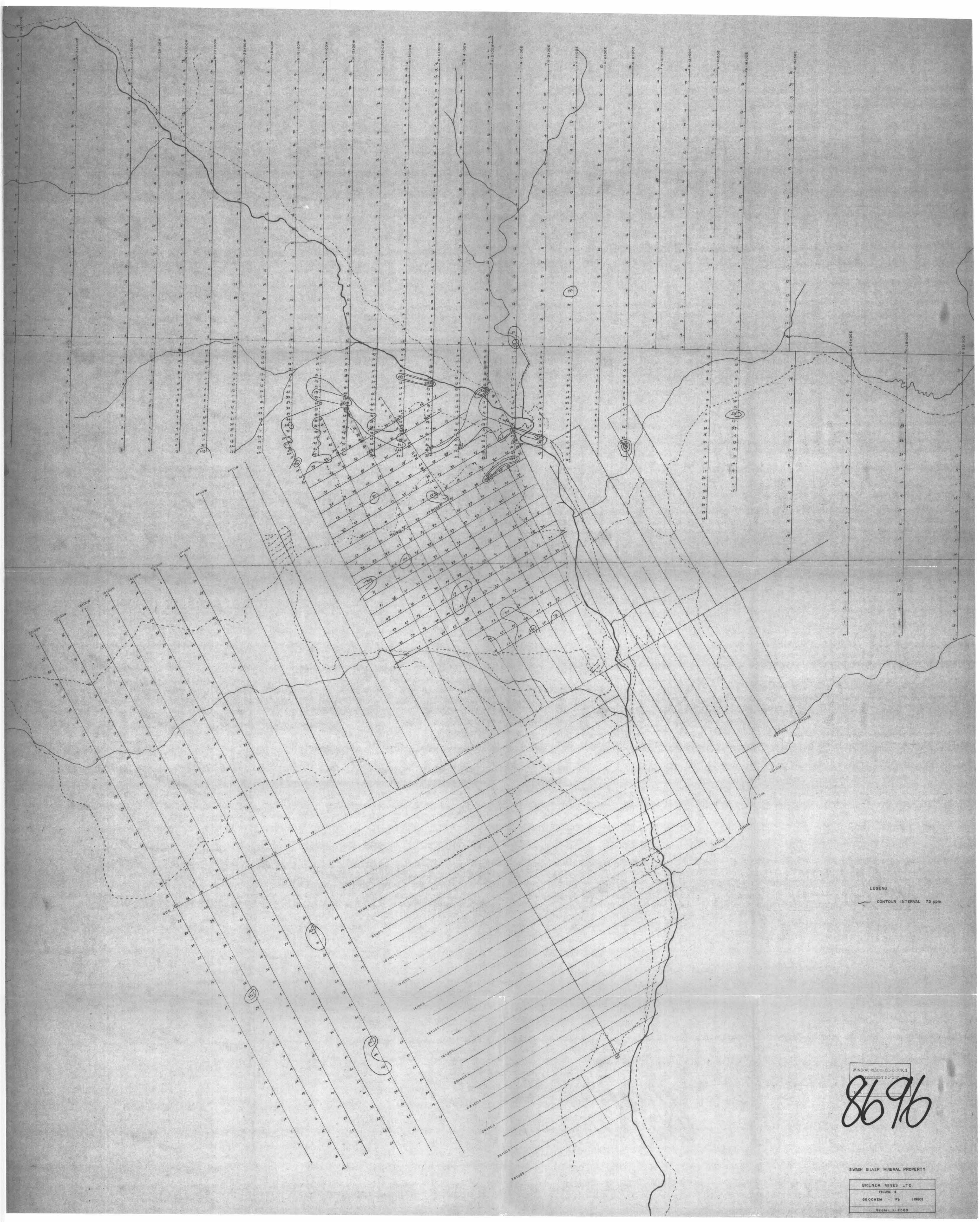
Arnold R. Pollmer
Chief Geologist
Brenda Mines Ltd.



LEGEND
— CONTOUR INTERVAL 40 ppm

MINERAL RESOURCES SEARCH
8696

SWASH SILVER MINERAL PROPERTY
BRENDA MINES LTD.
FIGURE 3
GEOCHEM - Cu (380)
Scale: 1:7500

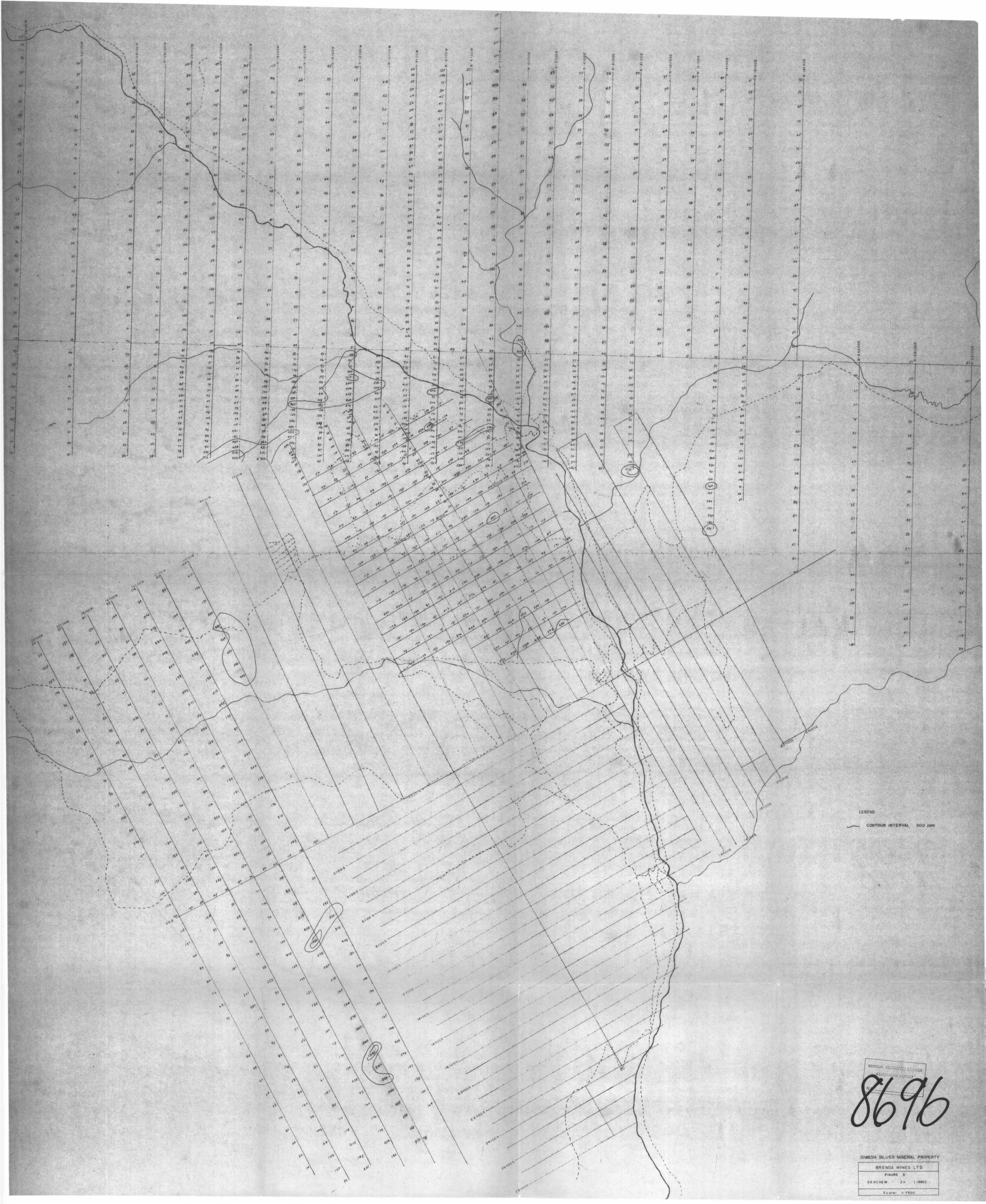


LEGEND
— CONTOUR INTERVAL 75 ppm

8696

MINERAL RESOURCES BRANCH
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FIGURE 4
GEOCHEM - Pb (1980)
Scale: 1:7500

SWASH SILVER MINERAL PROPERTY



LEGEND
— CONTOUR INTERVAL 500 ppm

8696

MINERAL RESOURCE ESTIMATION
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FIGURE 5
GEOCHEM - Z_n (1990)
Scale: 1:7500