82-#908 - #10907

9

GEOLOGICAL & GEOCHEMICAL REPORT

on the

SILVER PIPE 1-16

MINERAL CLAIMS

LOCATED IN THE MOYIE LAKE AREA

FORT STEELE MINING DIVISION

NTS 82 - G - 4, 5

BRITISH COLUMBIA

at

49° 15' N. latitude

115° 45' W. longitude

for

GULF INTERNATIONAL LTD.

by

D. A. Yeager - Geologist

C. K. Ikona - P. Eng.

January 1983

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1.0 INTRODUCTION

The SILVER PIPE 1 - 16 mineral claims were staked in October, 1980 to cover an iron manganese vein system felt to have potential for hosting silver and lead mineralization. The property is believed to lie along the strike extension of the St. Eugene vein system which produced over 1,000,000 tons of silver lead ore from the Moyie Lake mining camp in southeastern B.C.

The claims were staked in October, 1980 by Karen Clayton and Colin Kary of Kimberley, B.C. and purchased by R. G. Gifford of Port Moody, B.C. Mr. Gifford has subsequently vended the property to Gulf International Ltd. of Vancouver, B.C. Pamicon Developments Ltd. of Vancouver was retained by Gulf to review the available information on the claims, carry out a detailed evaluation of the property and make recommendations regarding further work on the claims. The examination took place during the month of August, 1982.

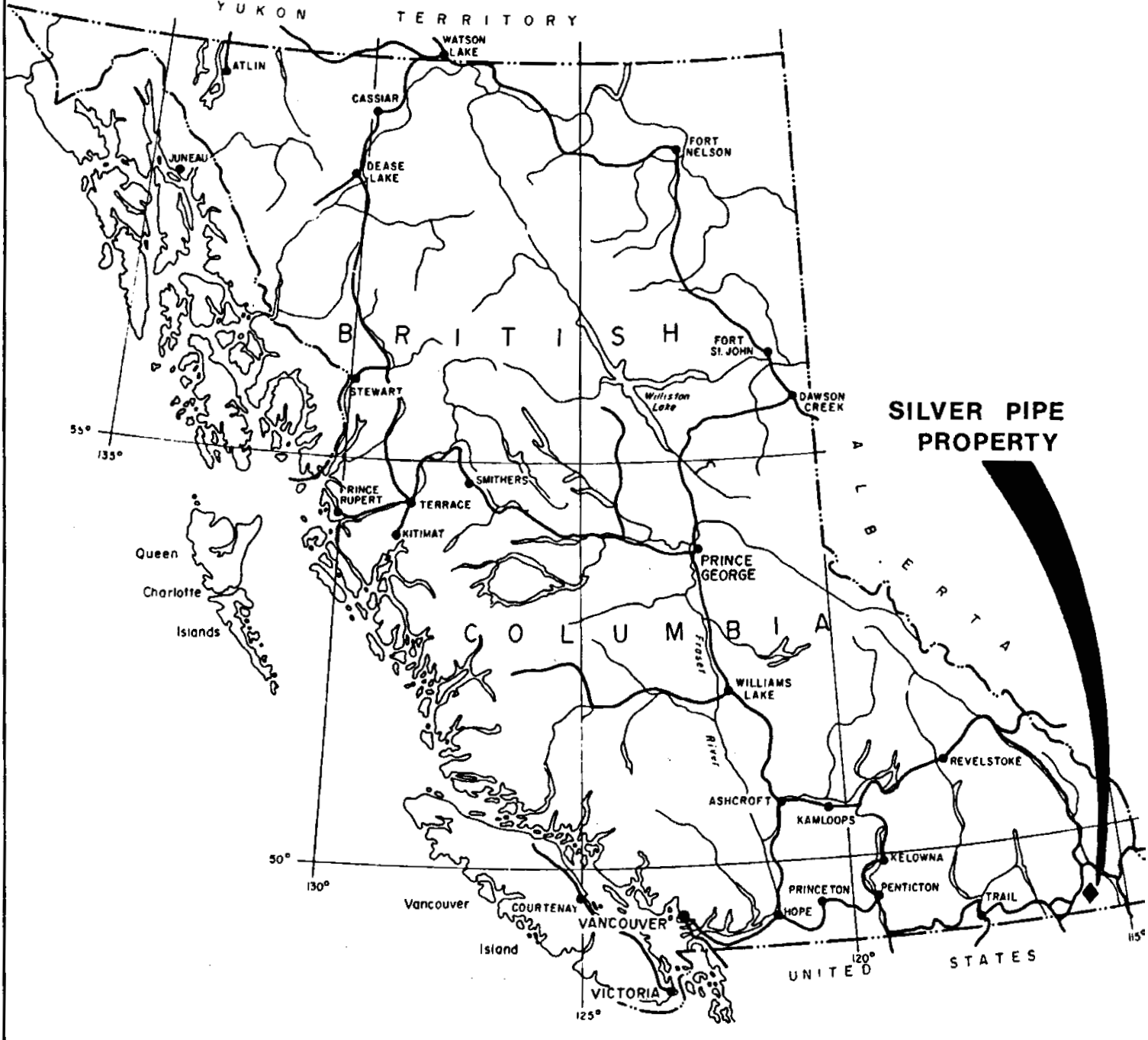
Further work recommendations included ground acquisition, exploration of new ground, and a small diamond drill program.

2.0 LIST OF CLAIMS

Examination of mineral titles registered with the British Columbia Department of Mines and Petroleum Resources indicates the existence of the following mineral claims covering the Silver Pipe prospect:

CLAIM NAME	RECORD NO.	NO. OF UNITS	RECORD DATE
Silver Pipe 1-16	1086-1101	1 each (16 total)	October 1980

Claim posts examined in the field appear to conform with the requirements of the B.C. Mineral Act.



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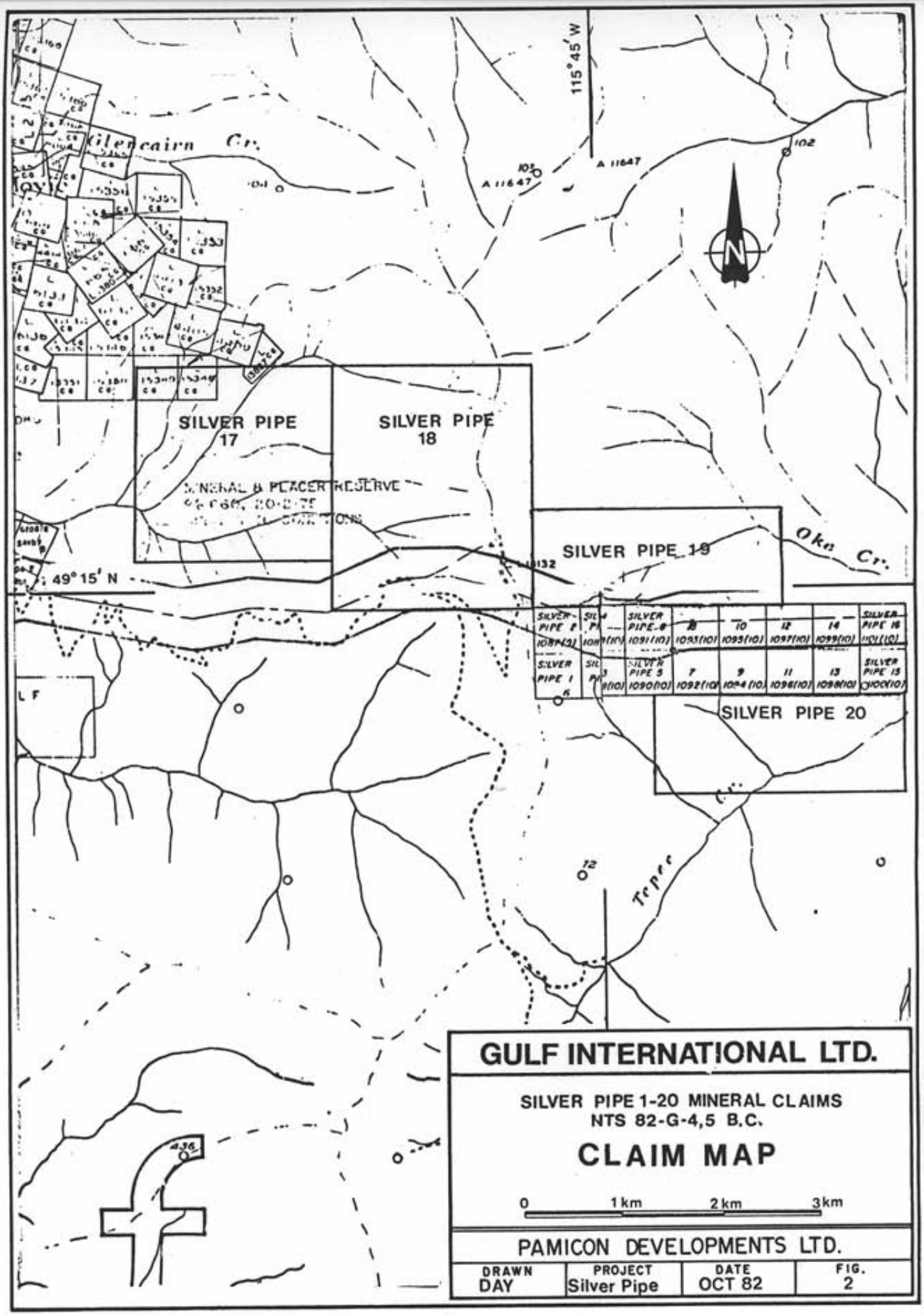
SILVER PIPE 1-20 MINERAL CLAIMS
NTS 82-G-4,5 B.C.

PROPERTY LOCATION MAP

0 100 200 MILES
0 100 200 300 KILOMETRES

PAMICON DEVELOPMENTS LTD.

DRAWN	PROJECT	DATE	FIG.
DAY	SILVER PIPE	OCT 82	1



GULF INTERNATIONAL LTD.

SILVER PIPE 1-20 MINERAL CLAIMS
NTS 82-G-4,5 B.C.

CLAIM MAP

0 1 km 2 km 3 km

PAMICON DEVELOPMENTS LTD.

DRAWN	PROJECT	DATE	FIG.
DAY	Silver Pipe	OCT 82	2

3.0 LOCATION, ACCESS AND GEOGRAPHY

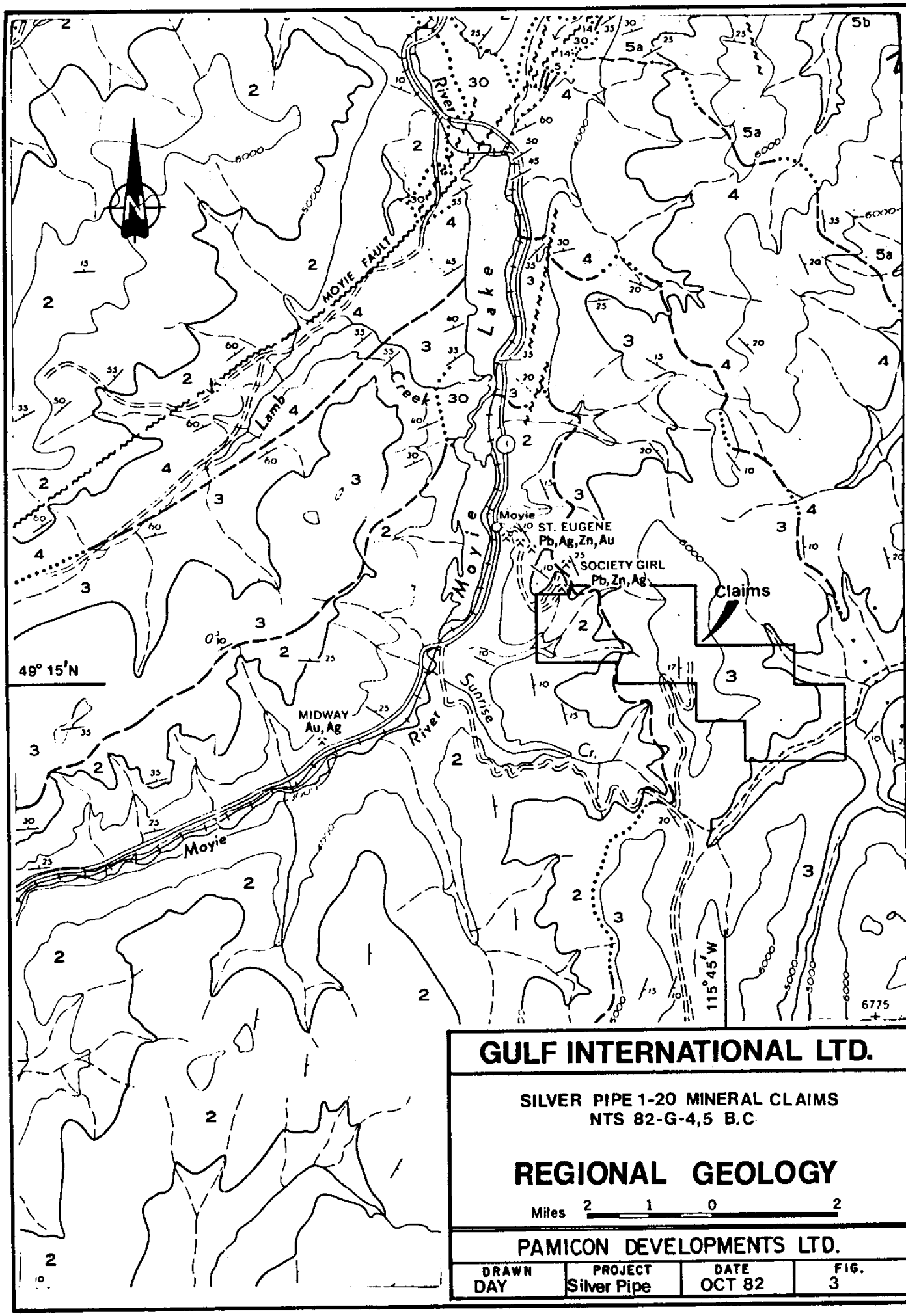
The property is situated approximately 27 kilometres south of the city of Cranbrook in southeastern British Columbia on NTS sheets 82 - G - 4, 5 at 49° 15' N. latitude and 115° W. longitude. The claims cover the east-west running ridge between Oke and Tepee creeks just west of their confluence.

Access to the property is by 15 kilometres of dirt road from Highway 3 south of the town of Moyie. The Alberta Natural Gas Pipeline and service road traverses centrally through the Silver Pipe 1-16 claims.

Elevations in the area vary from 1150 metres in the valleys to a maximum elevation of 2093 metres at the fire lookout station just northwest of the showings. Topographic relief is moderate to occasionally steep. The hillsides are forest covered mainly by lodgepole pine and spruce with occasional tamarack, cedar and white pine. The highest mountain tops are above treeline and host mosses, grasses and alpine flowers.

4.0 HISTORY

The Silver Pipe was originally staked by J.E. Pinchbec following construction of the gas pipeline. The claims were located in the mid to late '60's and called the Dirk property. It was later changed to the Teepee property consisting of 63 claims named Erdaco and Dirk optioned by Mercury Explorations in 1969. Mercury solicited P. Sevensma, P. Eng. to assess the geological and geophysical work which had been done on the property. The work consisted of float mapping, surface geological mapping and magnetometer survey, and bulldozer trenching which had been carried out by Mercury Explorations.



GULF INTERNATIONAL LTD.

SILVER PIPE 1-20 MINERAL CLAIMS
NTS 82-G-4,5 B.C.

REGIONAL GEOLOGY

Miles 2 1 0 2

PAMICON DEVELOPMENTS LTD.

DRAWN	PROJECT	DATE	FIG.
DAY	Silver Pipe	OCT 82	3

4.0 HISTORY CONTINUED

The work successfully defined the Gossan vein system with widths of up to 16 feet and a strike length of 1,200 feet open at both ends with encouraging results from Gossan material of up to 1.5% lead, 2.9 ounces per ton silver, 0.34% copper and very high manganese and iron values. The property was examined by Pearson in 1970 and an orientation EM 16 survey was conducted for Cominco the following year (Hamilton 1971). Despite encouraging results encountered on the property, Mercury, Pinchbec and Piggin allowed the claims to lapse.

5.0 REGIONAL GEOLOGY

The property lies on the east limb of a major anticlinal structure, the Moyie Anticline, which plunges gently to the north - northeast. The anticline is cored by the early Precambrian Aldridge Formation consisting of quartzites and siltstones interbedded with dark grey argillites. The Aldridge is overlain by argillites and siltstones of the Precambrian Creston Formation which hosts the Silver Pipe mineralization.

Later phases of gentle folding are overprinted on the major anticlinal structure causing a slight doming effect.

6.0 PROPERTY GEOLOGY

6.1 Introduction

A picket grid was surveyed by chain and compass for control purposes to aid in geologic mapping. The grid map and geology map are presented in figures 4 and 5 respectively.

— 5+00 E — — 6+00 E — — 7+00 E — — 8+00 E — — 9+00 E — — 10+00 E — — 11+00 E — — 12+00 E — — 13+00 E — — 14+00 E — — 15+00 E — — 16+00 E — — 17+00 E — — 18+00 E — — 19+00 E — — 20+00 E — — 21+00 E —

N

— 12+00 N —

— 11+00 N —

— 10+00 N —

— 9+00 N —

— 8+00N —

Silver Pipe 2

Silver Pipe 4

Silver Pipe 6

Silver Pipe 8

Silver Pipe 10

Silver Pipe 1

Silver Pipe 3

Silver Pipe 5

Silver Pipe 7

Silver Pipe 9

1740 1760 1780 1800 1820 1840 1860 1880 1900 1920 1940 1960 1980

DDH 82-1

DDH 82-2

LEGEND

pipeline right of way

pipeline location

trench outline

claim post

GULF INTERNATIONAL LTD.

SILVER PIPE 1-20 MINERAL CLAIM
NTS 82-G-4,5 B.C.

GRID MAP

0 100 200 300M

PAMICON DEVELOPMENTS

DRAWN	PROJECT	DATE	FIG.
PAM	SILVER PIPE	OCT 82	4

6.2 Stratigraphy and Lithology

The property is underlain by sediments of the Precambrian Creston Formation dipping 20° - 30° to the east. In the area of the Silver Pipe mineralization, the sediments are made up primarily of grey to green phyllitic mudstones with some phyllitic siltstones. Beds are generally 2 centimetres to 10 centimetres thick with occasional beds up to 1 metre thick.

Quartzite lenses of variable habit occur in the mudstones. Generally the quartzites are white weathering, massively bedded and composed of 0.25 to 0.50 millimetre quartz grains solidly cemented by silica. The beds themselves are somewhat lensy but several of the thicker beds appeared to be continuous across the map area. The quartzite members range in thickness from one metre to four metres. More commonly the quartzite members occurred as zones from two metres to ten metres thick of interbedded mudstones and quartzites.

Measurements taken from the regional geology map indicate the Creston-Aldridge contact to be stratigraphically 1000 metres below the Silver Pipe showings.

6.3 Mineralization

A vein system of ferruginous material extending for a strike length of 1000 metres crosscuts the mudstones and quartzites of the Creston Formation. In surface outcrop, along the pipeline, widths of the vein material as exposed in trenching vary from 0.6 to 3.0 metres. The widest sections of the vein are exposed at 14 + 00 E and 16 + 25 E near the baseline. The vein generally strikes east-west and dips steeply and shows minor offsets by inferred faulting.

— 5+00 E — — 6+00 E — — 7+00 E — — 8+00 E — — 9+00 E — — 10+00 E — — 11+00 E — — 12+00 E — — 13+00 E — — 14+00 E — — 15+00 E — — 16+00 E — — 17+00 E — — 18+00 E — — 19+00 E — — 20+00 E — — 21+00 E —

— 12+00 N —

— 11+00 N —

— 10+00 N —

— 9+00 N —

— 8+00N —

DDH 82-2

DDH 82-1

15737

15736

15738

15735

15734

15733

15732

15731

LEGEND

- limit of outcrop
- geologic contact: definite, assumed
- 20 bedding attitude
- trench outline
- 15735 — assay sample site
- mineralized float: sparse, moderate, abundant
- mineralized vein in place

LITHOLOGY

1 phyllitic mudstones with minor siltstone } CRESTON FM.

2 white quartzite

GULF INTERNATIONAL LTD.

SILVER PIPE 1-20 MINERAL CLAIM
NTS 82-G-4,5 B.C.

GEOLOGY

0 100 200 300M

PAMICON DEVELOPMENTS

DRAWN	PROJECT	DATE	FIG.
PAM	SILVER PIPE	OCT 82	5

6.3 Mineralization continued

Massive vein material is dominantly goethite, limonite, magnetite and hematite with no apparent sulfide mineralization recognized on surface other than the rare occurrence of Jamesonite, a lead iron sulfantimonide. The presence of this highly oxidized iron manganese material is believed to represent the weathered surface expression of an underlying sulfide deposit carrying important values in silver, lead, zinc and copper. The vein material is massive in occurrence and often contains inclusions of brecciated wallrock. Chloride alteration is commonly associated.

Assay results of grab samples of oxidized vein material have given the following results:

Sample No.	Cu %	Pb %	Zn %	Ag oz/T
15731	0.15	0.50	0.06	0.24
15732	0.10	0.11	0.03	0.10
15733	0.03	0.01	0.01	0.02
15734	0.05	0.20	0.02	0.38
15735	0.04	0.10	0.02	0.14
15736	0.02	0.07	0.02	0.02
15737	0.01	0.02	0.01	0.16
15738	0.04	0.02	0.01	0.30

Sample locations are shown on Figure 5.

The Silver Pipe claims lie along trend from a series of ore bodies mined in the early decades of the present century. These deposits include the Aurora, Cambrian, St. Eugene, Society Girl and John D. The ore bodies within the deposits generally are east-west striking (as is the Silver Pipe) and dip to the south.

6.3 Mineralization continued

The St. Eugene was the major producer in the belt. The magnetite chlorite assemblage associated with the Silver Pipe oxide zone is similar to that found in the upper most workings of the St. Eugene mine, on strike 4 miles to the northwest. It is interpreted the vein may represent an ore forming structure similar in nature to that which hosts the St. Eugene deposits. The St. Eugene mine produced 1,062,000 tons averaging 7 ounces per ton silver, 15% lead and 5% zinc from three ore bodies. Production was from a fissure filling replacement vein system having a known extent of 11,000 feet of strike length and at least 4,000 feet of down dip extension. The largest ore body of the three, the Lakeshore, produced 700,000 tons of ore material and its disposition with respect to topography is such that as much ore again may have been removed by erosion. Thus a single ore shoot has potential for 1,500,000 tons.

7.0 GEOCHEMISTRY

7.1 Introduction

A soil sampling program was initiated using the grid for location. Samples were taken at 50 metre intervals on 100 metre crosslines along a 2000 metre baseline. A total of 203 samples were taken. Samples were taken from " B " horizon material and placed in numbered kraft envelopes. Stations were correspondingly marked with numbered strips of plastic flagging. The samples were air dried and shipped to Chemex Labs Ltd. of North Vancouver, B.C.

Upon receipt at Chemex, the samples were dried further and seived through an ASTM 80 mesh screen.

5+00 E | 6+00 E | 7+00 E | 8+00 E | 9+00 E | 10+00 E | 11+00 E | 12+00 E | 13+00 E | 14+00 E | 15+00 E | 16+00 E | 17+00 E | 18+00 E | 19+00 E | 20+00 E | 21+00 E

12+00 N
11+00 N
10+00 N
9+00 N
8+00N

GEOLOGICAL BRANCH
ASSESSMENT REPORT

10,907

-values in parts per million
-contour intervals: 20ppm, 27ppm, 30ppm

GULF INTERNATIONAL LTD.

SILVER PIPE 1-20 MINERAL CLAIM
NTS 82-G-4,5 B.C.

Cu in Soils

0 100 200 300 M

PAMICON DEVELOPMENTS

DRAWN	PROJECT	DATE	FIG.
PAM	SILVER PIPE	OCT 82	6

5+00 E | 6+00 E | 7+00 E | 8+00 E | 9+00 E | 10+00 E | 11+00 E | 12+00 E | 13+00 E | 14+00 E | 15+00 E | 16+00 E | 17+00 E | 18+00 E | 19+00 E | 20+00 E | 21+00 E

12+00 N
11+00 N
10+00 N
9+00 N
8+00N

-values in parts per million
-contour interval: 18ppm, 25ppm, 30 ppm

GEOLOGICAL BRANCH
ASSESSMENT REPORT

10,907

GULF INTERNATIONAL LTD.

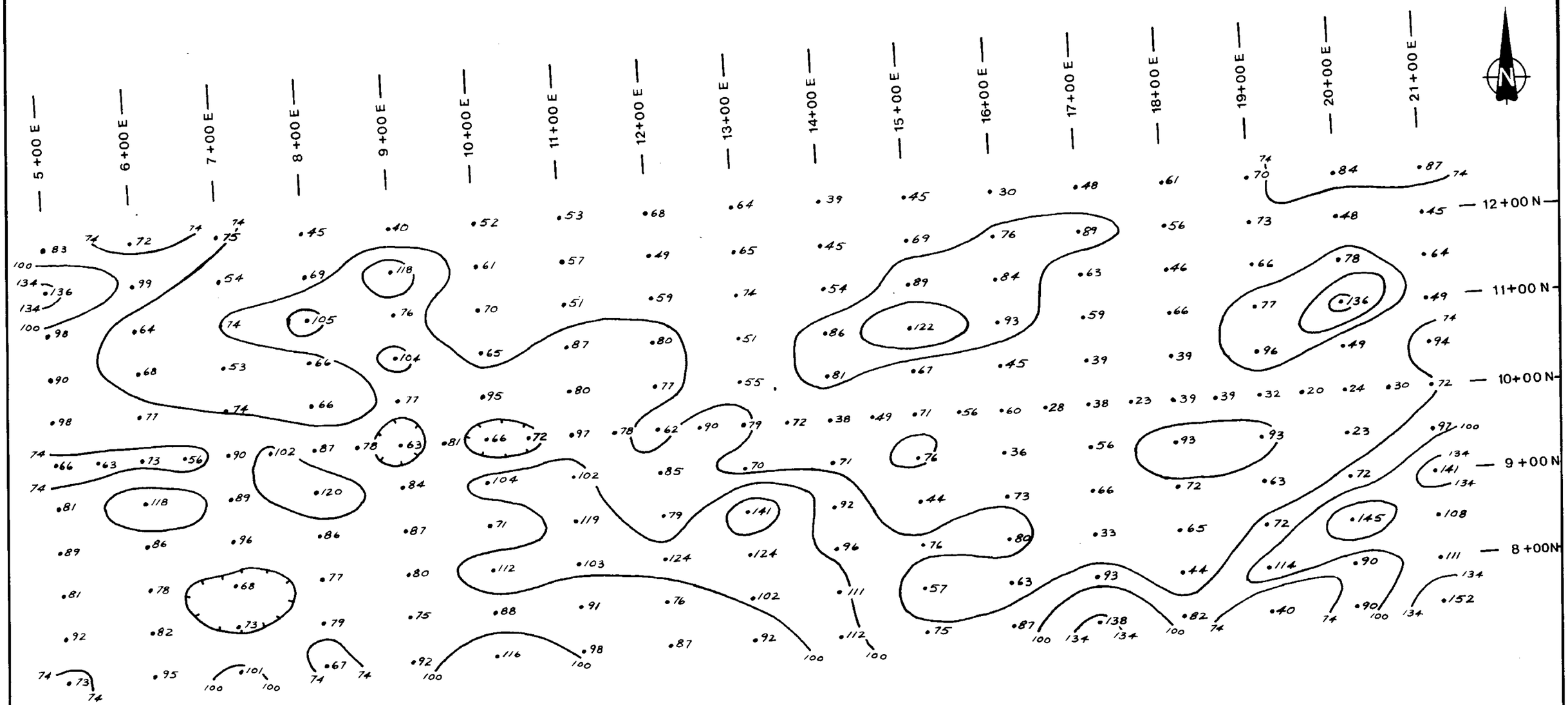
SILVER PIPE 1-20 MINERAL CLAIM
NTS 82-G-4,5 B.C.

Pb in Soils

0 100 200 300M

PAMICON DEVELOPMENTS

DRAWN	PROJECT	DATE	FIG.
PAM	SILVER PIPE	OCT 82	7



GEOLOGICAL BRANCH
ASSESSMENT REPORT

10,907

-values in parts per million
-contour intervals: 74ppm, 100ppm, 134 ppm

GULF INTERNATIONAL LTD.

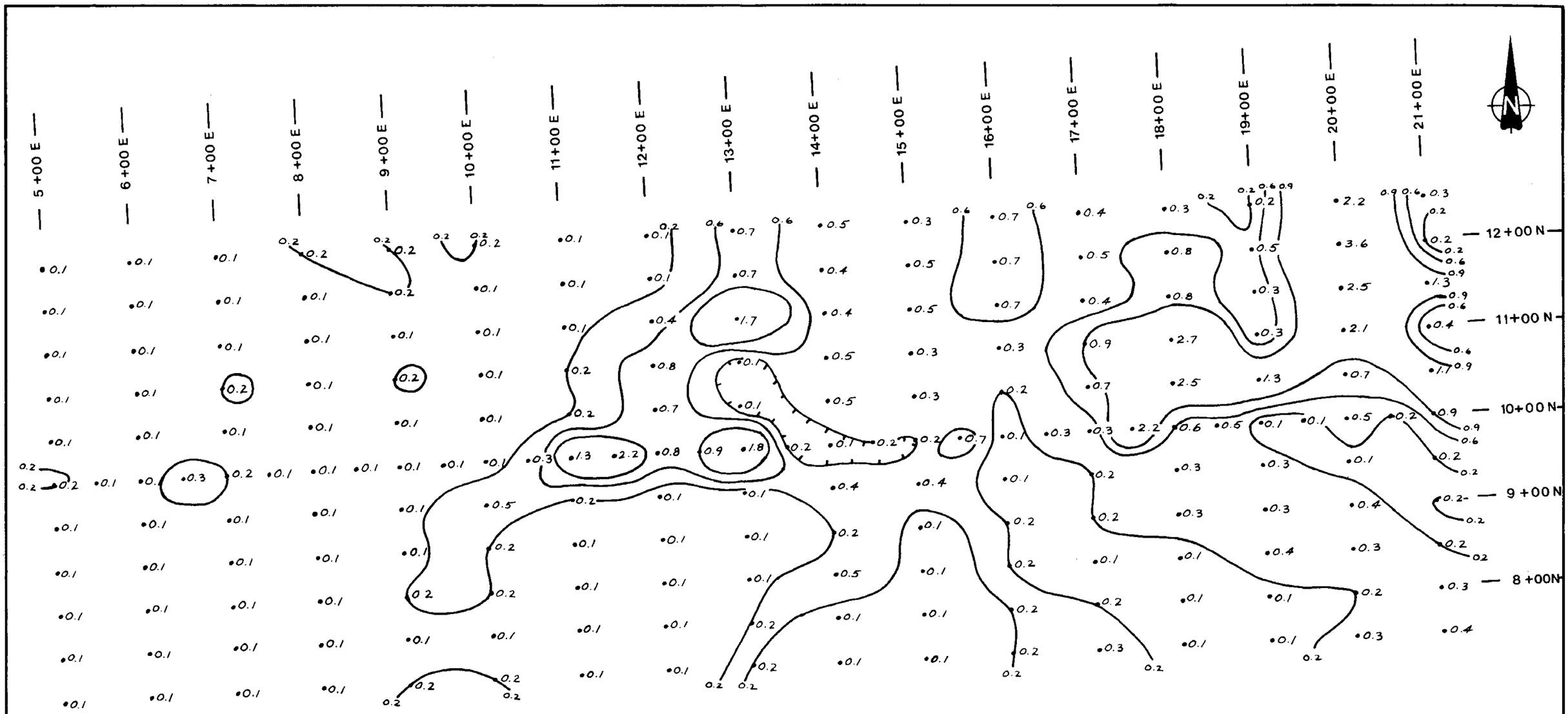
SILVER PIPE 1-20 MINERAL CLAIM
NTS 82-G-4,5 B.C.

Zn in Soils

0 100 200 300M

PAMICON DEVELOPMENTS

DRAWN	PROJECT	DATE	FIG.
PAM	SILVER PIPE	OCT 82	8



-values in parts per million
-contour intervals: 0.2 ppm, 0.6 ppm, 0.9 ppm

GULF INTERNATIONAL LTD.

SILVER PIPE 1-20 MINERAL CLAIM
NTS 82-G-4,5 B.C.

Ag in Soils

0 100 200 300M

PAMICON DEVELOPMENTS

DRAWN	PROJECT	DATE	FIG.
PAM	SILVER PIPE	OCT 82	9

7.0 Introduction continued

The -80 fraction was dissolved using a perchloric-nitric acid extraction and levels of copper, lead, zinc and silver were determined using standard atomic absorption techniques. The levels of copper, lead, zinc and silver in soils are presented in figures 6, 7, 8 and 9 respectively.

7.2 Evaluation

The following table presentsa guide to classifying the soil sample results.

ELEMENT	BACKGROUND	ANOMALOUS	HIGHLY ANOMALOUS
Copper	20 ppm	above 27 ppm	above 30 ppm
Lead	18 ppm	above 25 ppm	above 30 ppm
Zinc	74 ppm	above 100 ppm	above 134 ppm
Silver	0.2 ppm	above 0.6 ppm	above 0.9 ppm

a) Generally speaking, the values for all metals are higher on the eastern half of the grid.

b) There is a trough of low values crossing the grid in a northwest-southeast direction from 7 + 50 N, 19 + 00 E to 12 + 50 N, 10 + 00 E. This trough is present on the copper, zinc and silver plots but is not so outstanding on the lead plot. This may represent a strong shear zone.

8.0 CONCLUSIONS AND RECOMMENDATIONS

Two exploration targets exist on the property.

8.0 CONCLUSIONS AND RECOMMENDATIONS CONTINUED

First, the examination of the unweathered character of the Silver Pipe iron manganese vein at a shallow depth should be undertaken. Shallow drill holes to look down dip below the oxide zone should ideally be aimed at targets where competent quartzite beds can be extrapolated as being intersected by the steeply dipping cross-cutting vein.

A second deeper target occurs beneath the Creston-Aldridge contact where the competent massive quartzite beds of the Aldridge Formation remain open for replacement in fissure filling zones capped by the less competent and tighter overlying Creston mudstones and siltstones. Deep drilling to explore this zone is suggested. Projection to the zone, as noted earlier in the report, expected to be approximately 1000 metres below surface.

As the work outlined in this report has assembled the framework of geology and geochemistry surrounding the mineralized vein, the next stage of work should be to diamond drill shallow holes to test the vein. Cross sections should be prepared and diamond drill holes targeted on the vein system below the oxidized cap where any favourable quartzite beds or geochemically anomalous zones can be extrapolated to intersect the vein system.

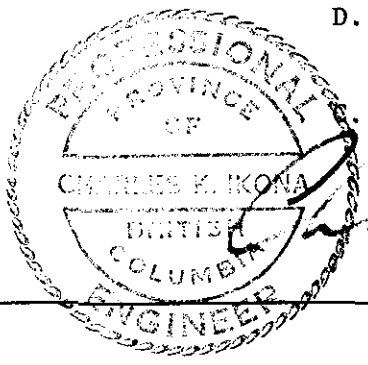
Prospecting and mapping should also be carried out on those parts of the property not covered by the present grid.

Respectfully submitted,

David A. Yeager

D. A. Yeager, Geologist

C. K. Ikona - P. Eng.



APPENDIX I

LIST OF REFERENCES

Rice, H.M.A.	GSC Memoir No. 207, Cranbrook Map Area (1937)
Leech, G.B.	GSC Map No. 15 - 1957, St. Mary Lake, Kootenay District, B.C. (1957)
Leech, G.B.	GSC Map No. 11-1960, Fernie (West Half), Kootenay District, B.C. (1960)
Birkeland, A. O.	Report on the Silver Pipe 1 - 16 Mineral Claims, Private Report (1980)

GEOCHEM PROCEDURES -

Cu, Mo, Pb, Zn & Ag:

1.0 gms of sample is digested with perchloric-nitric acid ($HcLO_4$-HNO_3) for approximately 2 hours. The digested sample is cooled and made up to 25 mls with distilled water. The solution is mixed and solids are allowed to settle. Copper, molybdenum, zinc and silver are determined by atomic absorption techniques.

Au: (PPB)

5 gm sample is ashed @ 800°C for one hour, digested with aqua regia - twice to dryness - taken up in 25% HCI, the gold then extracted as the bromide complex into MIBK and analyzed via A.A.

ASSAY PROCEDURES -

Cu, Mo, Pb, Zn:

Low ranges 2.0 gm sub-samples digested in perchloric and nitric acids, cooled, leached in water and nitric acid, transferred into volumetric flasks then analyzed against prepared standards by at-mic absorption procedures.
Mineral standards supplied by CANMET are analyzed with each group of samples.
For high grade Cu, Mo- Pb, Zn - volumetric and gravimetric procedures are employed.

Ag & Au: (Oz/Ton)

Standard fire assay techniques are used for the assay of Silver and Gold in rocks and drill core.

APPENDIX III

ITEMIZED COST STATEMENT - SILVER PIPE PROGRAM - August 4 - 25th, 1982

WAGES

David A. Yeager - Geologist 208-850 W. Hastings St. Vancouver, B.C.		
August 4 - 25th @ $250.00/day	$5,500.00	
David Caulfield - Geologist 208-850 W. Hastings St. Vancouver, B.C.		
August 9 - 22nd. @ $150.00/day	$2,100.00	
Charles K. Ikona 208-850 W. Hastings St. Vancouver, B.C.		
August 16th - 1 day @ $300.00	$ 300.00	$7,900.00

COMMUNICATION

B. C. Telephone Co. Invoice date August 24th to October 22/82	23.85

ITEMIZED COST STATEMENT - CONTINUED

TRAVEL & ACCOMODATION			
David A. Yeager - Visa Expense Account			
Statement date Sept. 3/82 -			
Hotel	479.07		
Meals	546.57	$1,025.64	
Charles Ikona - Cash Expense Account			
August 16th/82		91.28	$1,116.92
AUTOMOTIVE EXPENSE			
Misc. Fuel		116.96	116.96
OUTSIDE REPRODUCTION			
Western Reproducers			
Vancouver, B.C.			
Invoice #71096		27.51	27.51
CAMP FOOD			
Miscellaneous		20.12	20.12
MATERIALS & SUPPLIES			
Visa billing Sept. 3/82		76.90	76.90

ITEMIZED COST STATEMENT - CONTINUED

ASSAY & GEOCHEMISTRY

Chemex Labs Ltd.

Invoice #18213088 - 89 - 90

203 Soil Samples @ $4.75 ea. =	$964.25	
8 Assays @ $25.75 ea.	$206.00	
Sample preparation	$ 30.00	$1,199.75

TOTAL EXPENDITURES $10,482.01

APPENDIX IV

CERTIFICATE OF QUALIFICATIONS

I, David A. Yeager of Bowen Bay Road, Bowen Island, in the Province of British Columbia, DO HEREBY CERTIFY THAT:

1. I am a Geologist in the employment of Pamicon Developments Ltd.with offices at 208 - 850 West Hastings Street, Vancouver, B.C.

2. I am a graduate of the University of British Columbia with a Bachelor of Science Degree in Geology.

3. My primary employment since 1969 has been in the field of mineral exploration, mainly as a Field and Project Geologist.

4. My experience has encompassed a wide range of geologic environments and has allowed considerable familiarization with geophysical, geochemical and diamond drilling techniques.

5. This report is based on data generated by work done by me on the Silver Pipe 1-16 mineral claims during the month of August, 1982.

DATED at Vancouver, British Columbia this 20 day of January 1983

David A. Yeager

David A. Yeager
Geologist

APPENDIX V

ENGINEER'S CERTIFICATE

I, Charles K. Ikona, of 5 Cowley Court, Port Moody in the Province of British Columbia DO HEREBY CERTIFY THAT:

1. I am a Consulting Mining Engineer with offices at 208 - 850 West Hastings Street, Vancouver, B.C.

2. I am a graduate of the University of British Columbia with a degree in Mining Engineering.

3. I am a member in good standing of the Association of Professional Engineers of the Province of British Columbia.

4. I examined the property reported on herein on August 16, 1982. The field work was conducted by David A. Yeager, a geologist whom I have known and worked with for eight years and in whom I have every confidence.

DATED at Vancouver, British Columbia this 20th day of Jan, 19 83.

Charles K. Ikona, P. Eng.