GEOLOGICAL REPORT
ON THE
GAB 1, 2, 3, 4 MINERAL CLAIMS

Located in the Iskut River Area
Liard Mining Division
NTS 104B/15W
56°49' North Latitude
130°51' West Longitude

- Prepared for -

NORTHWEST GOLD SYNDICATE

- Prepared by -

S.L. TODORUK, Geologist
C.K. IKONA, P.Eng.

March, 1988

GEOLOGICAL REPORT on the GAB 1, 2, 3, 4 MINERAL CLAIMS

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1.0 INTRODUCTION

Northwest Gold Syndicate's Gab 1-4 mineral claims (80 units) were staked in the fall of 1986 in the area of Newmont Lake in northwestern British Columbia (Figure 1). The ground was acquired to cover favourable geology immediately east of Gulf International Minerals Ltd.'s McLymont claim group. Gulf International has been actively exploring their property for the last three years.

Two styles of gold mineralization have been recognized on the McLymont property, structurally controlled fissure filling or vein mineralization and gold bearing skarn mineralization. Results reported to date range up to 7.72 oz/ton Au over 2.06 metres in the skarn.

The Gab 1-4 claims contain similar rock units and structures as the McLymont group presenting attractive exploration potential.

This report is intended to summarize the available information on the property and presents the structural and orthophoto work performed in 1987.

2.0 LIST OF CLAIMS

Records of the British Columbia Ministry of Energy, Mines and Petroleum Resources indicate that the following claims (Figure 2) are owned by I. Hagemoen.

Claim Name	Record Number	No. of Units	Record Date	Expiry Date
Gab 1	3826	20	December 22, 1986	December 22, 1989
Gab 2	3827	20	December 22, 1986	December 22, 1989
Gab 3	3828	20	December 22, 1986	December 22, 1989
Gab 4	3829	20	December 22, 1986	December 22, 1989

NORTH WEST GOLD SYNDICATE

GAB 1, 2, 3 & 4 CLAIM GROUP

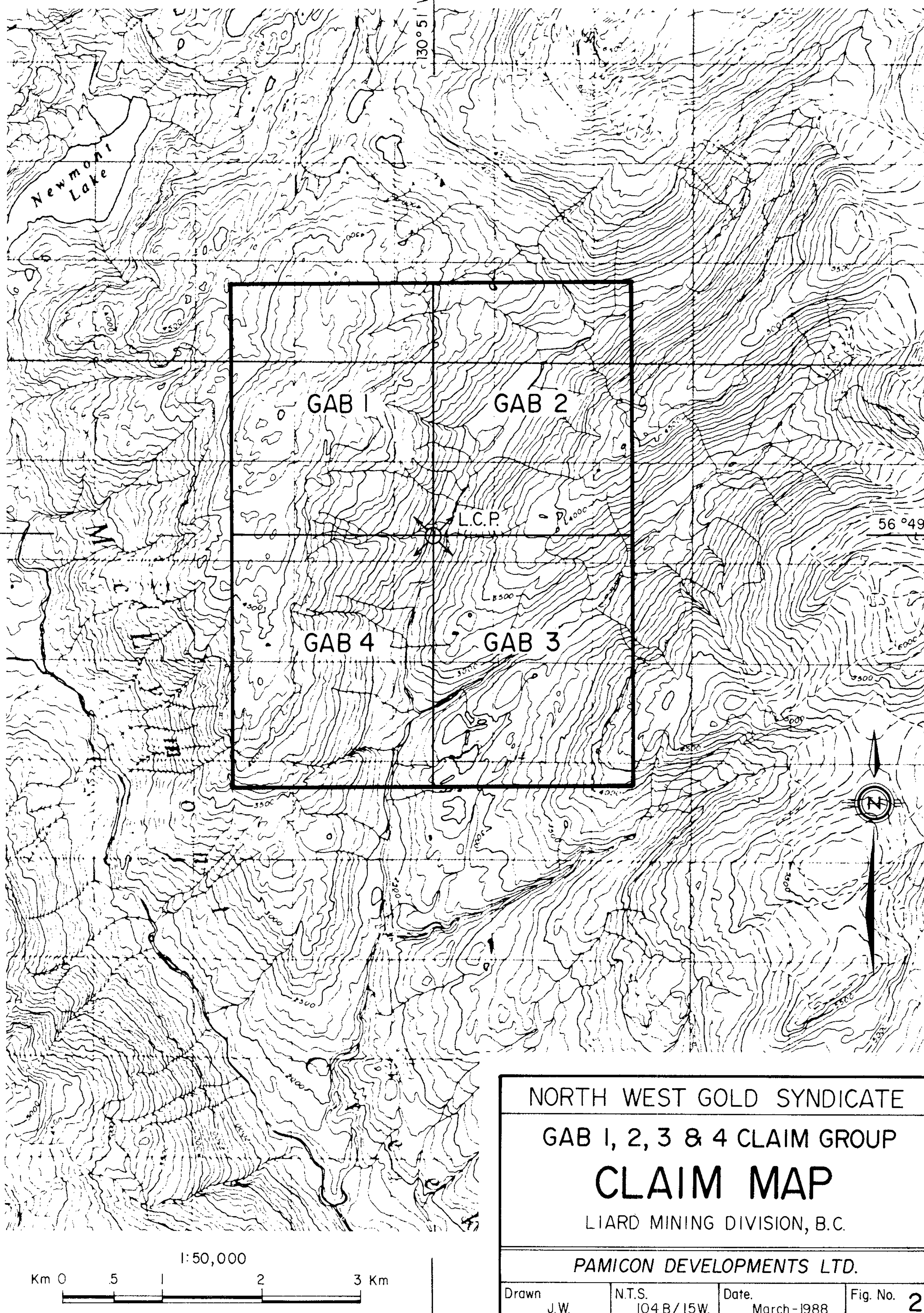
PROPERTY LOCATION MAP

LIARD MINING DIVISION, B.C.

PAMICON DEVELOPMENTS LTD.

Drawn	N.T.S.	Date.	Figure.
J.W.	104 B/15 W.	March 1988	1.

0 100 200 MILES
0 100 200 300 KILOMETRES



NORTH WEST GOLD SYNDICATE

GAB 1, 2, 3 & 4 CLAIM GROUP

CLAIM MAP

LIARD MINING DIVISION, B.C.

PAMICON DEVELOPMENTS LTD.

Drawn	N.T.S.	Date.	Fig. No.
J.W.	104 B/15W.	March-1988	2

3.0 LOCATION, ACCESS AND GEOGRAPHY

The Gab 1-4 mineral claims are located on the eastern edge of the Coast Range Mountains approximately 110 kilometres northwest of Stewart, British Columbia. The claims lie within the Liard Mining Division at 56°49' north latitude and 130°51' west longitude on NTS Sheet 104B/15W.

Access to the property is by helicopter from the Bronson Creek gravel air strip, located approximately 20 kilometres to the west-northwest. Daily scheduled flights to the strip from Terrace and Stewart have been available during the field season using fixed wing aircraft. Alternate access may be possible from the airstrip constructed by Skyline Explorations Ltd. on Johnny Flats, about 25 kilometres west of the property or from the Snippaker gravel air strip located approximately 15 kilometres to the south.

A proposal by C.K. Ikona of Pamicon Developments Ltd., on behalf of Skyline Explorations Ltd., addresses the construction of a road approximately 65 kilometres long, on the south side of the Iskut Valley to connect the Stewart-Cassiar Highway with a proposed BC Hydro dam site on the Iskut River and Skyline's Stonehouse Gold deposit on Bronson Creek.

Lower slopes are covered with a dense growth of spruce with an undergrowth of devil's club. More open areas contain alder growth. Both summer and winter temperatures are moderate with over 200 centimetres of annual precipitation.

Rugged topography, climate and vegetation all inhibit traversing throughout the claim group. Therefore, operating with local helicopter support appears to be the most practical and cost effective means of exploring the subject property during reconnaissance-style programs.

4.0 AREA HISTORY

The first recorded work done in the Iskut Region occurred in 1907 when a prospecting party from Wrangell, Alaska staked nine claims north of Johnny Mountain. Iskut Mining Company subsequently worked crown granted claims along Bronson Creek and on the north slope of Johnny Mountain. Up to 1920, a 9 metre adit revealed a number of veins and stringers hosting galena and gold-silver mineralization.

In 1954, Hudsons Bay Mining & Smelting located the Pick Axe showing and high grade gold-silver-lead-zinc float on the open upper slopes of Johnny Mountain, which today is part of Skyline Explorations Ltd.'s Reg deposit. The claims were worked and subsequently allowed to lapse.

During the 1960s, several major mining companies conducted helicopter borne reconnaissance exploration programs in a search for porphyry-copper-molybdenum deposits. Several claims were staked on Johnny Mountain and on Sulphurets Creek.

Between 1965 and 1971, Silver Standard Mines, and later Sumitomo, worked the E + L prospect on Nickel Mountain at the headwaters of Sulphurets Creek. Work included trenching, drilling and 460 metres of underground development work. Reserves include 3.2 million tons of 0.80% nickel and 0.60% copper.

In 1969 Skyline staked the Inel property after discovering massive sulphide float originating from the head of the Bronson Creek glacier.

During 1972, Newmont Mining Corporation of Canada Limited carried out a field program west of Newmont Lake on the Dirk claim group. Skarn-type mineralization was the target of exploration. Work consisted of airborne and ground magnetic surveys, geological mapping and diamond drilling. One and one-half metres grading 0.220 ounces gold per ton and 15.2 metres of 1.5% copper was intersected on the Ken showing.

In 1980 Dupont Canada Explorations Ltd. staked the Warrior claims south of Newmont Lake on the basis of a regional stream sediment survey. In 1983, Skyline Explorations Ltd. and Placer Development Ltd. optioned the Warrior claims from Dupont. Efforts were directed at sampling and extending several narrow quartz-pyrite-chalcopyrite veins with values ranging from 0.1 to 3.0 oz/ton gold. Geophysics and coincident geochemical values indicated a significant strike length to the mineralized structure. The Warrior claims were allowed to lapse in 1986, at which time, Gulf International Minerals Ltd. acquired the McLymont claims covering much the same area.

Assays of interest from recent Gulf drilling are listed below (Gulf International Minerals Ltd., Annual Report, 1987):

Drill Hole	Interval (feet)	Length (feet)	Copper (%)	Silver (oz/ton)	Gold (oz/ton)
87-25	343.0 - 373.0	30.0	0.23	0.11	0.404
	409.3 - 412.0	2.7	0.55	0.35	0.250
	470.2 - 473.8	3.6	0.42	0.19	1.520
87-29	167.0 - 170.0	3.0	0.001	0.01	0.140
	205.0 - 241.5	36.5	0.97	39.73	1.605

After restaking the Reg property in 1980, Skyline carried out trenching and drilling for veined high-grade gold and polymetallic massive sulphide mineralization on the Reg and Inel deposits between 1981 and 1985.

In 1986, drilling and 460 metres of underground cross-cutting and drifting on the Stonehouse Gold Zone confirmed the presence of high grade gold mineralization with additional values in silver and copper over mineable widths with good lateral and depth continuity. As of January 1988, reserves on the Stonehouse Gold Zone were reported as:

	Au (oz/ton)	Tons
Total Measured	1.246	121,000
Total Drill-Indicated	0.556	236,875
Total Inferred	0.570	700,000
Subtotal	0.644	1,057,875
McFadden	2.800	30,000
Ore Reserve Total	0.704	1,087,875

On the Delaware Resources Ltd. - Cominco Snip claims immediately north of the Stonehouse Gold deposit, approximately 10,000 metres of diamond drilling was carried out, mainly delineating the Twin Zone. Drill hole S-71 intersected 10.2 metres of 2.59 oz/ton gold. An underground program is expected to begin in early 1988. As of December, 1987, reserves on the Twin Zone were reported as:

	Au (oz)	Tons
Total Inferred	0.700	1,100,000

Also, during 1987 Inel Resources Ltd. commenced an underground drifting and diamond drilling program along the main cross-cut intent on intersecting the Discovery Zone which hosts gold-bearing polymetallic massive sulphide mineralization.

Western Canadian Mining Corp. carried out an extensive diamond drilling program on their Gosson claims, concentrating on the Khyber Pass Gold Zone which is 45 metres thick. The best drill hole intersection in this zone to date is as follows:

Hole	From	To	Length		Gold	Silver	Copper
	(m)	(m)	(m)	(ft)	(oz/t)	(oz/t)	(%)
85-3	11.2	16.8	5.6	18.4	0.12	6.48	1.74
	30.2	44.2	5.2	17.1	0.17	2.66	0.90
	54.5	60.1	5.6	18.4	0.15	1.77	--
	66.0	69.0	3.0	9.8	0.28	1.54	--

Tungco Resources Corporation drill tested three main gold/copper quartz vein targets; the Bluff, No. 7 and Swamp Zones. The Bluff Zone has been delineated 70 metres along strike and 60 metres downdip with better intersections grading up to 0.243 oz/ton gold across 2.45 metres. The No. 7 Vein returned 1.12 metres of 0.651 oz/ton gold.

5.0 REGIONAL GEOLOGY

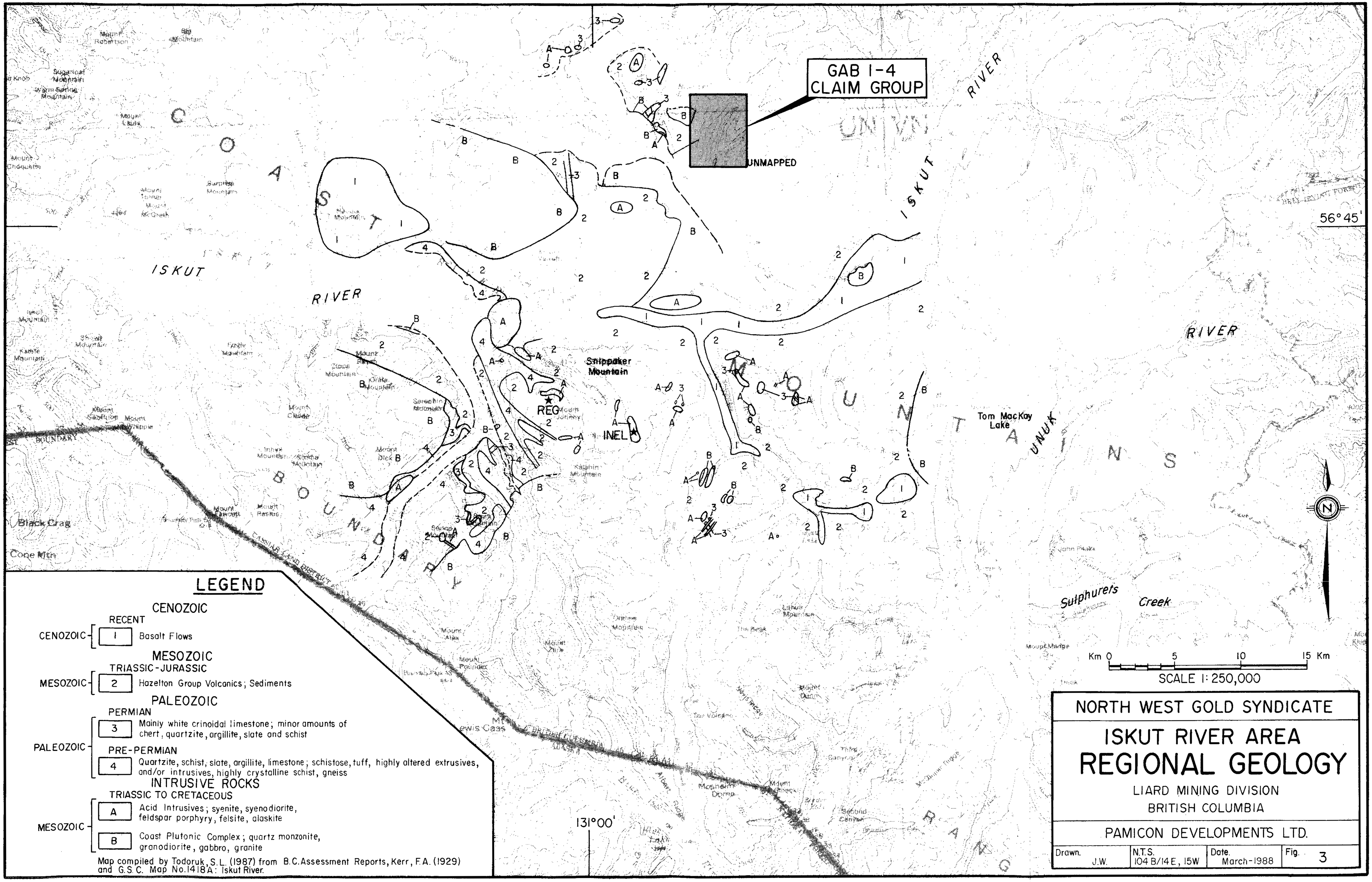
Government mapping of the general geology in the Iskut River area (Kerr, 1929, GSC Maps 9-1957 and 1418-1979) has proved to be incomplete and unreliable. Subsequent mineral exploration studies have greatly enhanced the lithological and stratigraphic knowledge of this geo-entity known as the Stewart Complex (Grove, 1986).

Grove (1986) defines the Stewart Complex in the following manner:

> "The Stewart Complex lies along the contact between the Coast Plutonic Complex on the west, the Bowser Basin on the east, Alice Arm on the south and the Iskut River on the north."

Within the Stewart Complex the oldest rock unit consists of Paleozoic crinoidal limestone overlying metamorphosed sedimentary and volcanic members. This oceanic assemblage has been correlated with the Cache Creek Group.

Unconformably overlying the Paleozoic limestone unit are Upper Triassic Hazelton Group island arc volcanics and sediments. These rocks have informally


GAB 1-4
CLAIM GROUP
UNMAPPED
COAST BOUNDARY
ISKUT RIVER
ISKUT RIVER
RIVER
UNUK
MOUNTAINS
REG
INEL
Snippaker Mountain
Tom MacKay Lake
Sulphurets Creek
Black Crag
Cone Mtn
56°45'
131°00'
LEGEND
CENOZOIC
RECENT
CENOZOIC
1 Basalt Flows
MESOZOIC
TRIASSIC-JURASSIC
MESOZOIC
2 Hazelton Group Volcanics; Sediments
PALEOZOIC
PERMIAN
3 Mainly white crinoidal limestone; minor amounts of chert, quartzite, argillite, slate and schist
PALEOZOIC
PRE-PERMIAN
4 Quartzite, schist, slate, argillite, limestone; schistose, tuff, highly altered extrusives, and/or intrusives, highly crystalline schist, gneiss
INTRUSIVE ROCKS
TRIASSIC TO CRETACEOUS
A Acid Intrusives; syenite, syenodiorite, feldspar porphyry, felsite, alaskite
MESOZOIC
B Coast Plutonic Complex; quartz monzonite, granodiorite, gabbro, granite
Map compiled by Todoruk, S.L. (1987) from B.C. Assessment Reports, Kerr, F.A. (1929) and G.S.C. Map No. 1418A: Iskut River.
Km 0 5 10 15 Km
SCALE 1: 250,000
NORTH WEST GOLD SYNDICATE
ISKUT RIVER AREA
REGIONAL GEOLOGY
LIARD MINING DIVISION
BRITISH COLUMBIA
PAMICON DEVELOPMENTS LTD.
Drawn. J.W.
N.T.S. 104 B/14E, 15W
Date. March-1988
Fig. 3

been referred to as the "Snippaker Volcanics." Grove (1981) correlates this assemblage to the Unuk River Formation of the Stewart Complex whereas other writers match this group with the time equivalent Stuhini Volcanics. Monotis fossils have been recognized on the north slope of Snippaker Peak and west of Newmont Lake, 20 km to the north, giving an age Late Triassic. It is within these rocks that Skyline's Stonehouse Gold and Inel deposits occur (Figure 3).

Grove reports an unconformable contact between Carboniferous and Middle Jurassic strata on both sides of Snippaker Ridge, north of Snippaker Peak. The same unconformable relationship between these major rock units appears to extend from Forrest Kerr Creek west, along the Iskut River, to the Stikine River junction. Present interpretation suggests an east-west trending thrust along the axis of the Iskut River which, like the King Salmon Thrust Fault, pushed up and over to the south.

Following the Iskut River thrust faulting, the entire region was overlain by Middle Jurassic Hazelton Group volcanic-sedimentary rocks named the Betty Creek Formation by Grove (1986).

The batholithic Coast Plutonic Complex intrusions in the Iskut region are of Cretaceous and Tertiary age. Composition varies from quartz monzonite and granodiorite to granite. Satellitic subvolcanic acidic porphyries may be important in the localization of mineralization.

Quaternary and Tertiary volcanics occur to the east along the Iskut River near Forrest Kerr Creek and north at Hoodoo Mountain.

6.0 LOCAL GEOLOGY AND ORTHOPHOTO STRUCTURAL INTERPRETATION

Figure 4 shows the geology and structural features of the Gab 1-4 claim group as compiled by orthophoto interpretation and work on adjacent areas.

Two main rock sequences are noted. Triassic to Jurassic volcanics and sediments of the Hazelton Group occur on the western portion of the claims and can be noted on the southeastern portion of the Gab 3 claim and portions of the eastern Gab 2 claim.

A Permian age sedimentary sequence consisting of crinoidal limestone, chert, quartzite, argillites, slate and schist occur as a broad band in the east central portion of the claims trending in a northeasterly direction and possibly forming a shallow synclinal structure.

Structurally three major fault systems can be noted trending in a north to northeasterly direction. A large number of smaller faults and/or shears are plotted. These would appear to be more intense in the volcanic units possibly reflecting the more brittle nature of the rocks as compared to the sedimentary units.

Attitudes of the small structures generally trend in a northeasterly direction within the volcanics although some cross structures can be seen. Structural attitudes within the sedimentary units tend to strike in a more east-west direction.

An interesting and possibly unique feature is a small circular structure with attendant radial fractures which is noted in the southwest corer of the Gab 4 claim. At present no explanation for this feature is available.

7.0 MINERAL POTENTIAL

A variety of types of gold occurrences have been recognized within the Iskut River area. At present the most significant of these appear to be structurally related fissure or open space filling (Reg and Snip Groups) and skarn hosted occurrences (Gulf International's McLymont Group). The presence of extensive structures within the volcanic sequences allows the potential for the first of these while the sedimentary sequence, in particular the limestone member, presents the possibility of the second.

8.0 CONCLUSIONS

Additional work should be done on the Gab 1-4 claims.

An airborne geophysical survey is presently being conducted on the property. Upon completion of this survey and in conjunction with the orthophoto work presented in this report it is anticipated that favourable structures with mineral potential will be localized and an exploration program designed to investigate these.

Respectfully submitted,

Steve L. Todoruk, Geologist

Charles K. Ikona, P.Eng.

PROFESSIONAL
PROVINCE OF
CHARLES K. IKONA
BRITISH COLUMBIA
ENGINEER

APPENDIX I

BIBLIOGRAPHY

BIBLIOGRAPHY

Caulfield, D.A. and C.K. Ikona (1987): Geological Report on the GIM Mineral Claim.

Caulfield, D.A. and C.K. Ikona (1987): Geological Report on the Josh, Josh 2-4 Mineral Claims.

Costin, C.P. (1973): Assessment Report 4150, Dirk Claims, Newmont.

Delaware Resources Corp.: Progress Report, Snip Prospect, November 19, 1987.

Gulf International Minerals Ltd.: Annual Report, February 1988.

Grove, E.W. (1985): Geological Report and Work Proposal on the Skyline Explorations Ltd. Inel Property.

Grove, E.W. (1986): Geological Report, Exploration and Development Proposal on the Skyline Explorations Ltd. Reg Property.

Kowalchuk, J. (1982): Assessment Report 10,418, Warrior Claims, Dupont Exploration.

Skyline Explorations Ltd.: Annual Report 1987.

Todoruk, S.L. and C.K. Ikona (1987): Geological Report on the Stu 1 & 2 Mineral Claims.

Todoruk, S.L. and C.K. Ikona (1987): Geological Report on the Gab 11 & 12 Mineral Claims and Stu 8 & 9 Mineral Claims.

Todoruk, S.L. and C.K. Ikona (1987): 1987 Summary Report on the Sky 4 & 5 and Spray 1 & 2 Claims.

Todoruk, S.L. and C.K. Ikona (1987): Geological Report on the Stu 4 & 5 Mineral Claims.

Tungco Resources Corporation: News release dated December 1, 1987.

Western Canadian Mining Corp.: News release dated November 12, 1987.

APPENDIX II

COST STATEMENT

COST STATEMENT
GAB 1, 2, 3, 4 MINERAL CLAIMS
LIARD MINING DIVISION
OCTOBER 15 - DECEMBER 22, 1987

WAGES		
S. Todoruk, Geologist 711, 675 West Hastings Street Vancouver, B.C. V6B 1N4 November 1 - December 22, 1987 3 days @ $350	$1,050.00	
C. Ikona, P.Eng. 711, 675 West Hastings Street Vancouver, B.C. V6B 1N4 October 15 - December 22, 1987 2 days @ $400	800.00	
T. Hutchings, Geographer 711, 675 West Hastings Street Vancouver, B.C. V6B 1N4 October 15 - December 22, 1987 5 days @ $200	1,000.00	
TOTAL WAGES		$ 2,850.00
EXPENSES		
Drafting	$ 400.00	
Report, Typing, Reproductions	1,500.00	
Orthophotos, Government Air Photos Scale: 1:10,000 Contours: 10 metres	3,118.75	
TOTAL EXPENSES		5,018.75
Management Fee on Expenses		752.81
TOTAL		8,621.56
Airborne Geophysical Survey		8,000.00
TOTAL THIS PROGRAM		$16,621.56

APPENDIX III

AIRBORNE GEOPHYSICAL SURVEY PROCEDURE

LOGISTICS REPORT ON
COMBINED HELICOPTER BORNE
MAGNETIC, ELECTROMAGNETIC AND VLF
SURVEY
ISKUT RIVER PROPERTIES
LIARD MINING DIVISION
BRITISH COLUMBIA

FOR
PAMICON DEVELOPMENTS LIMITED
BY
AERODAT LIMITED
February 17, 1988

J87100

R.J. de Carle
Consulting Geophysicist

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1. INTRODUCTION

This report describes an airborne geophysical survey carried out on behalf of Pamicon Developments Limited by Aerodat Limited. Equipment operated included a three frequency electromagnetic system, a high sensitivity cesium vapour magnetometer, a two frequency VLF-EM system, a film tracking camera, and an altimeter. Electromagnetic, magnetic and altimeter data were recorded both in digital and analog form.

The survey area which is comprised of several blocks of ground in the Iskut River area, is located approximately 120 kilometres northwest of Stewart, British Columbia. All of the survey blocks are within what is known as the Liard Mining Division. Several flights, which were flown during the month of February, were required to complete the survey with flight lines oriented at an Azimuth of 000-180 degrees and flown with a nominal line spacing of 250 metres. Coverage and data quality were considered to be well within the specifications described in the contract.

The survey objective is the detection and location of mineralized zones which can be directly or indirectly related to precious metal exploration targets. Of importance, therefore, are poorly mineralized conductors, displaying weak conductivity, which may represent structural features which can sometimes play an essential role in the eventual location of primary minerals.

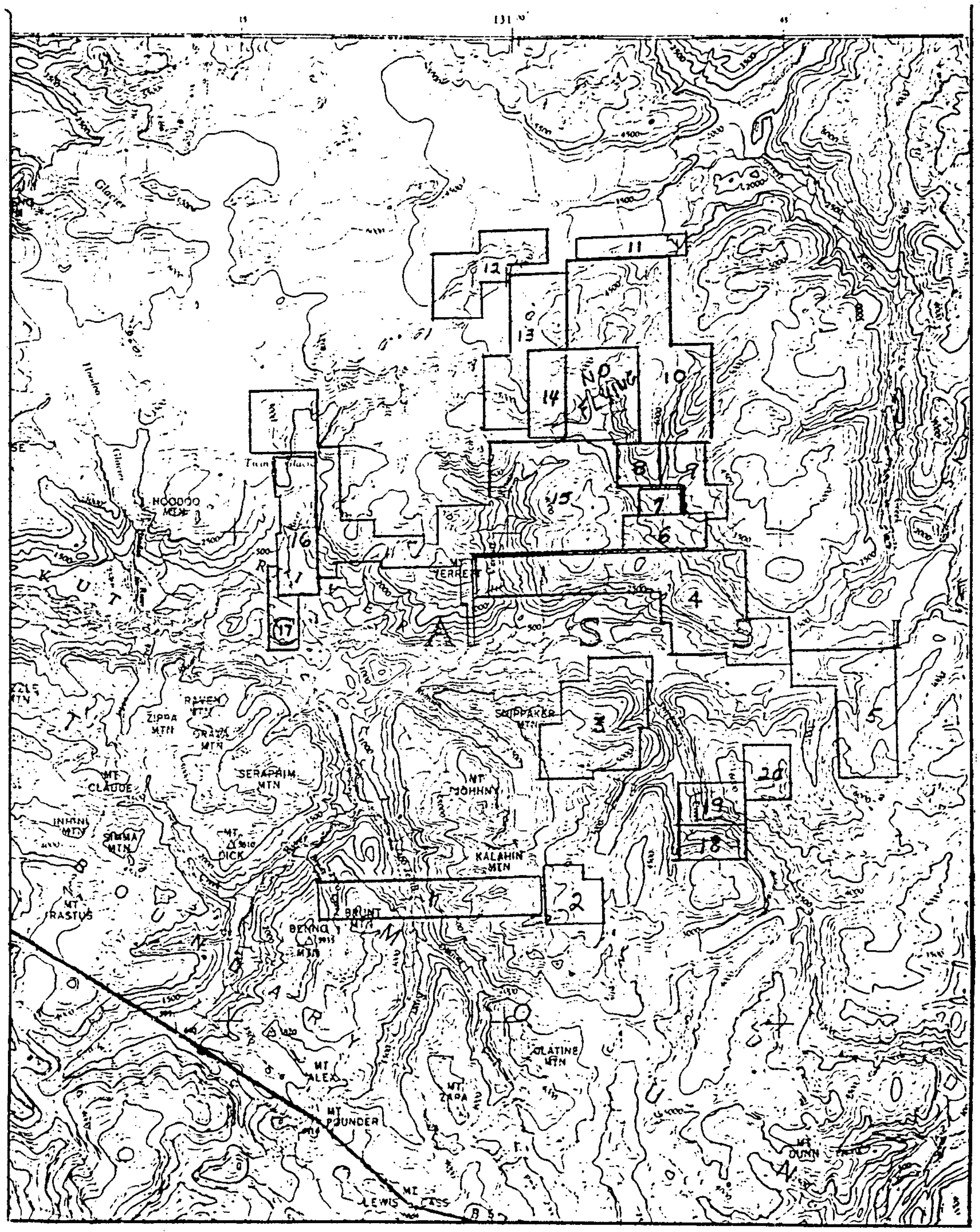
In regard to base metal targets, short, isolated or flanking conductors displaying good conductivity and having either magnetic or no magnetic correlation, are all considered to be areas of extreme interest.

A total of 1760 kilometres of the recorded data were compiled in map form and are presented as part of this report according to specifications outlined by Pamicon Developments Limited.

2. SURVEY AREA LOCATION

The survey area is depicted on the index map shown. They are centred at Latitude 56 degrees 43 minutes north, Longitude 130 degrees 57 minutes west, in the Iskut River area of northern British Columbia (NTS Reference Map No. 104B/10, 104B/11, 104B/14 and 104B/15). The survey area is located in extremely rugged country, with many mountain ranges as high as 6,000 feet above sea level. The major physiographical feature in the area, besides the mountain ranges, is the Iskut River. It is quite a wide river which traverses through the middle of the survey area in an east-west direction with its outlet to the west, flowing into the Pacific Ocean.

Because of the extreme ruggedness of the country, transportation means is by helicopter only. There are no roads into the area. Travelling to the area can be made by bush plane from either Telegraph Creek which is approximately 165 kilometres north of the survey area, or from Stewart, B.C. which is approximately 120 kilometres to the southeast of the survey area. There are three gravel airstrips in close proximity to the survey blocks, one at the base of Mount Johnny, one near Bronson Creek and the third at the head of Snippuker Creek. The writer is not aware of the conditions for any of these airstrips.


HOODOO MTN
RAVEN MTN
ZIPPA MTN
SERAPHIM MTN
MT CLAUDE
SIMMA MTN
MT DICK
MT RASTUS
BENNO MTN
BRUNT MTN
KALAHIN MTN
MT JOHNNY
MT ALEX
MT POUNDER
MT ZARA
MT LEWIS
PASS
MT DUNN
NO FLYING
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3. AIRCRAFT AND EQUIPMENT

3.1 Aircraft

An Aerospatiale A-Star 350D helicopter, (C-GBBX), owned and operated by Ranger Helicopters Limited, was used for the survey. Installation of the geophysical and ancillary equipment was carried out by Aerodat. The survey aircraft was flown at a mean terrain clearance of 60 metres.

3.2 Equipment

3.2.1 Electromagnetic System

The electromagnetic system was an Aerodat 3-frequency system. Two vertical coaxial coil pairs were operated at 935 Hz and 4600 Hz and a horizontal coplanar coil pair at 4175 Hz. The transmitter-receiver separation was 7 metres. Inphase and quadrature signals were measured simultaneously for the 3 frequencies with a time constant of 0.1 seconds. The electromagnetic bird was towed 30 metres below the transmitter.

3.2.2 VLF-EM System

The VLF-EM System was a Herz Totem 2A. This instrument measures the total field and quadrature components of two selected transmitters, preferably oriented at right angles to one another. The sensor was towed in a bird 12 metres below the helicopter. The transmitters monitored were NLK, Jim Creek, Washington, broadcasting at 24.8 kHz for the Line station and NAA, Cutler, Maine broadcasting at 24.0 kHz for the Orthogonal station.

3.2.3 Magnetometer

The magnetometer employed a Scintrex Model VIW-2321 H8 cesium, optically pumped magnetometer sensor. The sensitivity of this instrument was 0.1 nanoTeslas at a 0.2 second sampling rate. The sensor was towed in a bird 12 metres below the helicopter.

3.2.4 Magnetic Base Station

An IFG-2 proton precession magnetometer was operated at the base of operations to record diurnal variations of the earth's magnetic field. The clock of the base station was synchronized with that of the airborne system to facilitate later correlation.

3.2.5 Radar Altimeter

A King Air HRA-100 radar altimeter was used to record terrain clearance. The output from the instrument is a linear function of altitude for maximum accuracy.

3.2.6 Tracking Camera

A Panasonic video tracking camera was used to record flight path on VHS video tape. The camera was operated in continuous mode and the fiducial numbers and time marks for cross reference to the analog and digital data were encoded on the video tape.

3.2.7 Analog Recorder

An RMS dot-matrix recorder was used to display the data during the survey. In addition to manual and time fiducials, the following data were recorded:

Channel	Input	Scale
CXI1	Low Frequency Coaxial Inphase	2 ppm/mm
CXQ1	Low Frequency Coaxial Quadrature	2 ppm/mm
CXI2	High Frequency Coaxial Inphase	2 ppm/mm
CXQ2	High Frequency Coaxial Quadrature	2 ppm/mm
CPI1	Mid Frequency Coplanar Inphase	8 ppm/mm
CPQ1	Mid Frequency Coplanar Quadrature	8 ppm/mm
PWRL	Power Line	60 Hz
VLT	VLF-EM Total Field, Line	2.5%/mm

Channel	Input	Scale
VLQ	VLF-EM Quadrature, Line	2.5%/mm
VOT	VLF-EM Total Field, Ortho	2.5%/mm
VOQ	VLF-EM Quadrature, Ortho	2.5%/mm
ALT	Altimeter	10 ft./mm
MAGF	Magnetometer, Fine	2.5 nT/mm
MAGC	Magnetometer, Coarse	25 nT/mm

3.2.8 Digital Recorder

A DGR 33 data system recorded the survey on magnetic tape. Information recorded was as follows:

Equipment	Recording Interval
EM system	0.1 seconds
VLF-EM	0.4 seconds
Magnetometer	0.2 seconds
Altimeter	0.4 seconds

4. DATA PRESENTATION

4.1 Base Map

A photomosaic base at a scale of 1:20,000 was prepared from a photo lay down map, supplied by Aerodat, on a screened mylar base.

4.2 Flight Path Map

The flight path was manually recovered onto the photomosaic base using the VHS video tape. The recovered points were then digitized, transformed to a local metric grid and merged with the data base. The flight path map showing all flight lines, is presented on a Cronaflex copy of the base map, with camera frame and navigator's manual fiducials for cross reference to both the analog and digital data.

4.3 Airborne Electromagnetic Survey Interpretation Map

The electromagnetic data were recorded digitally at a sample rate of 10 per second with a time constant of 0.1 seconds. A two stage digital filtering process was carried out to reject major sferic events and to reduce system noise.

Local sferic activity can produce sharp, large amplitude events that cannot be removed by conventional filtering procedures. Smoothing or stacking will reduce their amplitude but leave a broader residual response that can be confused with geological phenomena. To avoid this possibility, a computer algorithm searches out and rejects the major sferic events.

The signal to noise ratio was further enhanced by the application of a low pass digital filter. It has zero phase shift which prevents any lag or peak displacement from occurring, and it suppresses only variations with a wavelength less than about 0.25 seconds. This low effective time constant permits maximum profile shape resolution.

Following the filtering process, a base level correction was made. The correction applied is a linear function of time that ensures the corrected amplitude of the various inphase and quadrature components is zero when no conductive or permeable source is present. The filtered and levelled data were used in the interpretation of the electromagnetics.

An interpretation map was prepared showing peak locations of anomalies and conductivity thickness ranges along with the Inphase amplitudes (computed from the 4600 Hz coaxial response) and conductor axes. The anomalous responses of the three coil configurations along with the interpreted conductor axes were plotted on a Cronaflex copy of the photo base map.

4.4 Total Field Magnetic Contours

The aeromagnetic data were corrected for diurnal variations by adjustment with the digitally recorded base station magnetic values. No correction for regional variation was applied. The corrected profile data were interpolated onto a regular grid at a 20 metre true scale interval using an Akima spline technique. The grid provided the basis for threading the presented contours at a 2 nanoTesla interval.

The contoured aeromagnetic data have been presented on a Cronaflex copy of the photomosaic base map.

4.5 Vertical Magnetic Gradient Contours

The vertical magnetic gradient was calculated from the gridded total field magnetic data. Contoured at a 0.2 nT/m interval, the gradient data were presented on a Cronaflex copy of the ~mosaic base map.

4.6 Apparent Resistivity Contours

The electromagnetic information was processed to yield a map of the apparent resistivity of the ground.

The approach taken in computing apparent resistivity was to assume a model of a 200 metre thick conductive layer (i.e., effectively a half space) over a resistive bedrock. The computer then generated, from nomograms for this model, the resistivity that would be consistent with the bird elevation and recorded amplitude for the coaxial frequency pair used. The apparent resistivity profile data were interpolated onto a regular grid at a 20 metres true scale interval using an Akima spline technique.

The contoured apparent resistivity data were presented on a Cronaflex copy of the photomosaic base map with the flight path.

4.7 VLF-EM Total Field Contours

The VLF-EM signals from NLK, Jim Creek, Washington broadcasting at 24.8 kHz. for the Line Station were compiled in contour map form and presented on a Cronaflex copy of the photomosaic base map.

Robert J. de Carle

Robert J. de Carle
Consulting Geophysicist
for
AERODAT LIMITED

J87100

February 17, 1988

APPENDIX I

GENERAL INTERPRETIVE CONSIDERATIONS

Electromagnetic

The Aerodat three frequency system utilizes two different transmitter-receiver coil geometries. The traditional coaxial coil configuration is operated at two widely separated frequencies and the horizontal coplanar coil pair is operated at a frequency approximately aligned with one of the coaxial frequencies.

The electromagnetic response measured by the helicopter system is a function of the "electrical" and "geometrical" properties of the conductor. The "electrical" property of a conductor is determined largely by its electrical conductivity, magnetic susceptibility and its size and shape; the "geometrical" property of the response is largely a function of the conductor's shape and orientation with respect to the measuring transmitter and receiver.

Electrical Considerations

For a given conductive body the measure of its conductivity or conductance is closely related to the measured phase shift between the received and transmitted electromagnetic field. A small phase shift indicates a relatively high conductance, a large phase shift lower conductance. A small phase shift results in a large inphase to quadrature ratio and a large phase shift a low ratio. This relationship is shown quantitatively for a non-magnetic vertical half-plane model on the accompanying phasor diagram. Other physical models will show the same trend but different quantitative relationships.

The phasor diagram for the vertical half-plane model, as presented, is for the coaxial coil configuration with the amplitudes in parts per million (ppm) of the primary field as measured at the response peak over the conductor. To assist the interpretation of the survey results the computer is used to identify the apparent conductance and depth at selected anomalies. The results of this calculation are presented in table form in Appendix II and the conductance and inphase amplitude are presented in symbolized form on the map presentation.

The conductance and depth values as presented are correct only as far as the model approximates the real geological situation. The actual geological source may be of limited length, have significant dip, may be strongly magnetic, its conductivity and thickness may vary with depth and/or strike and adjacent bodies and overburden may have modified the response. In general the conductance estimate is less affected by these limitations than is the depth estimate, but both should be considered as relative rather than absolute guides to the anomaly's properties.

Conductance in mhos is the reciprocal of resistance in ohms and in the case of narrow slab-like bodies is the product of electrical conductivity and thickness.

Most overburden will have an indicated conductance of less than 2 mhos; however, more conductive clays may have an apparent conductance of say 2 to 4 mhos. Also in the low conductance range will be electrolytic conductors in faults and shears.

The higher ranges of conductance, greater than 4 mhos, indicate that a significant fraction of the electrical conduction is electronic rather than electrolytic in nature. Materials that conduct electronically are limited to certain metallic sulphides and to graphite. High conductance anomalies, roughly 10 mhos or greater, are generally limited to sulphide or graphite bearing rocks.

Sulphide minerals, with the exception of such ore minerals as sphalerite, cinnabar and stibnite, are good conductors; sulphides may occur in a disseminated manner that inhibits electrical conduction through the rock mass. In this case the apparent conductance can seriously underrate the quality of the conductor in geological terms. In a similar sense the relatively non-conducting sulphide minerals noted above may be present in significant consideration in association with minor conductive sulphides, and the electromagnetic response only relate to the minor associated mineralization. Indicated conductance is also of little direct significance for the identification of gold mineralization. Although gold is highly conductive, it would not be expected to exist in sufficient quantity to create a recognizable anomaly, but minor accessory sulphide mineralization could provide a useful indirect indication.

In summary, the estimated conductance of a conductor can provide a relatively positive identification of significant sulphide or graphite mineralization; however, a moderate to low conductance value does not rule out the possibility of significant economic mineralization.

Geometrical Considerations

Geometrical information about the geologic conductor can often be interpreted from the profile shape of the anomaly. The change in shape is primarily related to the change in inductive coupling among the transmitter, the target, and the receiver.

In the case of a thin, steeply dipping, sheet-like conductor, the coaxial coil pair will yield a near symmetric peak over the conductor. On the other hand, the coplanar coil pair will pass through a null couple relationship and yield a minimum over the conductor, flanked by positive side lobes. As the dip of the conductor decreased from vertical, the coaxial anomaly shape changes only slightly, but in the case of the coplanar coil pair the side lobe on the down dip side strengthens relative to that on the up dip side.

As the thickness of the conductor increases, induced current flow across the thickness of the conductor becomes relatively significant and complete null coupling with the coplanar coils is no longer possible. As a result, the apparent minimum of the coplanar response over the conductor diminishes with increasing thickness, and in the limiting case of a fully 3 dimensional body or a horizontal layer or half-space, the minimum disappears completely.

A horizontal conducting layer such as overburden will produce a response in the coaxial and coplanar coils that is a function of altitude (and conductivity if not uniform). The profile shape will be similar in both coil configurations with an amplitude ratio (coplanar:coaxial) of about 4:1*.

In the case of a spherical conductor, the induced currents are confined to the volume of the sphere, but not relatively restricted to any arbitrary plane as in the case of a sheet-like form. The response of the coplanar coil pair directly over the sphere may be up to 8* times greater than that of the coaxial pair.

In summary, a steeply dipping, sheet-like conductor will display a decrease in the coplanar response coincident with the peak of the coaxial response. The relative strength of this coplanar null is related inversely to the thickness of the conductor; a pronounced null indicates a relatively thin conductor. The dip of such a conductor can be inferred from the relative amplitudes of the side-lobes.

Massive conductors that could be approximated by a conducting sphere will display a simple single peak profile form on both coaxial and coplanar coils, with a ratio between the coplanar to coaxial response amplitudes as high as 8*.

Overburden anomalies often produce broad poorly defined anomaly profiles. In most cases, the response of the coplanar coils closely follows that of the coaxial coils with a relative amplitude ratio of 4*.

Occasionally, if the edge of an overburden zone is sharply defined with some significant depth extent, an edge effect will occur in the coaxial coils. In the case of a horizontal conductive ring or ribbon, the coaxial response will consist of two peaks, one over each edge; whereas the coplanar coil will yield a single peak.

* It should be noted at this point that Aerodat's definition of the measured ppm unit is related to the primary field sensed in the receiving coil without normalization to the maximum coupled (coaxial configuration). If such normalization were applied to the Aerodat units, the amplitude of the coplanar coil pair would be halved.

Magnetics

The Total Field Magnetic Map shows contours of the total magnetic field, uncorrected for regional variation. Whether an EM anomaly with a magnetic correlation is more likely to be caused by a sulphide deposit than one without depends on the type of mineralization. An apparent coincidence between an EM and a magnetic anomaly may be caused by a conductor which is also magnetic, or by a conductor which lies in close proximity to a magnetic body. The majority of conductors which are also magnetic are sulphides containing pyrrhotite and/or magnetite. Conductive and magnetic bodies in close association can be, and often are, graphite and magnetite. It is often very difficult to distinguish between these cases. If the conductor is also magnetic, it will usually produce an EM anomaly whose general pattern resembles that of the magnetics. Depending on the magnetic permeability of the conducting body, the amplitude of the inphase EM anomaly will be weakened, and if the conductivity is also weak, the inphase EM anomaly may even be reversed in sign.

VLF Electromagnetics

The VLF-EM method employs the radiation from powerful military radio transmitters as the primary signals. The magnetic field associated with the primary field is elliptically polarized in the vicinity of electrical conductors. The Herz Totem uses three coils in the X, Y, Z configuration to measure the total field and vertical quadrature component of the polarization ellipse.

The relatively high frequency of VLF (15-25) kHz provides high response factors for bodies of low conductance. Relatively "disconnected" sulphide ores have been found to produce measureable VLF signals. For the same reason, poor conductors such as sheared contacts, breccia zones, narrow faults, alteration zones and porous flow tops normally produce VLF anomalies. The method can therefore be used effectively for geological mapping. The only relative disadvantage of the method lies in its sensitivity to conductive overburden. In conductive ground the depth of exploration is severely limited.

The effect of strike direction is important in the sense of the relation of the conductor axis relative to the energizing electromagnetic field. A conductor aligned along a radius drawn from a transmitting station will be in a maximum coupled orientation and thereby produce a stronger response than a similar conductor at a different strike angle. Theoretically, it would be possible for a conductor, oriented tangentially to the transmitter to produce no signal. The most obvious effect of the strike angle consideration is that conductors favourably oriented with respect to the transmitter location and also near perpendicular to the flight direction are most clearly rendered and usually dominate the map presentation.

The total field response is an indicator of the existence and position of a conductivity anomaly. The response will be a maximum over the conductor, without any special filtering, and strongly favour the upper edge of the conductor even in the case of a relatively shallow dip.

The vertical quadrature component over steeply dipping sheet-like conductor will be a cross-over type response with the cross-over closely associated with the upper edge of the conductor.

The response is a cross-over type due to the fact that it is the vertical rather than total field quadrature component that is measured. The response shape is due largely to geometrical rather than conductivity considerations and the distance between the maximum and minimum on either side of the cross-over is related to target depth. For a given target geometry, the larger this distance the greater the depth.

The amplitude of the quadrature response, as opposed to shape is function of target conductance and depth as well as the conductivity of the overburden and host rock. As the primary field travels down to the conductor through conductive material it is both attenuated and phase shifted in a negative sense. The secondary field produced by this altered field at the target also has an associated phase shift. This phase shift is positive and is larger for relatively poor conductors. This secondary field is attenuated and phase shifted in a negative sense during return travel to the surface. The net effect of these 3 phase shifts determine the phase of the secondary field sensed at the receiver.

A relatively poor conductor in resistive ground will yield a net positive phase shift. A relatively good conductor in more conductive ground will yield a net negative phase shift. A combination is possible whereby the net phase shift is zero and the response is purely in-phase with no quadrature component.

A net positive phase shift combined with the geometrical cross-over shape will lead to a positive quadrature response on the side of approach and a negative on the side of departure. A net negative phase shift would produce the reverse. A further sign reversal occurs with a 180 degree change in instrument orientation as occurs on reciprocal line headings. During digital processing of the quadrature data for map presentation this is corrected for by normalizing the sign to one of the flight line headings.

APPENDIX II

CERTIFICATE OF QUALIFICATIONS

I, ROBERT J. DE CARLE, certify that: -

1. I hold a B. A. Sc. in Applied Geophysics with a minor in geology from Michigan Technological University, having graduated in 1970.

2. I reside at 28 Westview Crescent in the town of Palgrave, Ontario.

3. I have been continuously engaged in both professional and managerial roles in the minerals industry in Canada and abroad for the past eighteen years.

4. I have been an active member of the Society of Exploration Geophysicists since 1967 and hold memberships on other professional societies involved in the minerals extraction and exploration industry.

5. The accompanying report was prepared from information published by government agencies, materials supplied by Pamicon Developments Limited and from a review of the proprietary airborne geophysical survey flown by Aerodat Limited for Pamicon Developments Limited. I have not personally visited the property.

6. I have no interest, direct or indirect, in the property described nor do I hold securities in Pamicon Developments Limited.

7. I hereby consent to the use of this report in a Statement of Material Facts of the Company and for the preparation of a prospectus for submission to the British Columbia Securities Commission and/or other regulatory authorities.

Signed,

Robert J. de Carle

Robert J. de Carle
Consulting Geophysicist

Palgrave, Ontario
February 17, 1988

APPENDIX IV

STATEMENT OF QUALIFICATIONS

STATEMENT OF QUALIFICATIONS

I, STEVE L. TODORUK, of Suite 129, 7451 Minoru Boulevard, Richmond, in the Province of British Columbia, DO HEREBY CERTIFY:

1. THAT I am a Geologist in the employment of Pamicon Developments Limited, with offices at Suite 711, 675 West Hastings Street, Vancouver, British Columbia.

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

3. THAT my primary employment since 1979 has been in the field of mineral exploration.

4. THAT my experience has encompassed a wide range of geologic environments and has allowed considerable familiarization with prospecting, geophysical, geochemical and exploration drilling techniques.

5. THAT this report is based on orthophotographic studies and a compilation of all available data surrounding the area.

6. THAT I have no interest in the property described herein, nor in securities of any company associated with the property, nor do I expect to receive any such interest.

7. THAT I hereby grant permission to Northwest Gold Syndicate for the use of this report in any prospectus or other documentation required by any regulatory authority.

DATED at Vancouver, B.C., this 18 day of March, 1988.

Steve L. Todoruk, Geologist