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NEW ISSUE

PROSPECTUS

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(the 'Issuer')

(Incorporated under the laws of British Columbia) 827 West Pender Street, Vancouver, British Columbia V6C 3G8

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	Price to Public	Commissions	Net Proceeds to be received by Issuer		
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NAME AND ADDRESS OF THE AGENT:

GEORGIA PACIFIC SECURITIES CORPORATION 1600-555 Burrard Street, Vancouver, British Columbia

DATED: SEPTEMBER 14, 1989 EFFECTIVE DATE: SEPTEMBER 25, 1989

SUMMARY REPORT and PROPOSED EXPLORATION PROGRAM

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TAMARAC GOLD PROPERTY

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YUKON SPIRIT MINES LTD.

by

A. S. Greene, P. Geol.

SPECTRUM GEOLOGICAL SERVICES LTD.

January 24, 1989

SUMMARY REPORT

AND

PROPOSED EXPLORATION PROGRAM TAMARAC GOLD PROPERTY

NELSON MINING DIVISION YMIR AREA, SOUTH EASTERN BRITISH COLUMBIA

> Longitude = 117° 12' Latitude = 49° 17' NTS 82 F/6E

> > CROWN GRANTS

Tamarac, Lot No. 3802 Pharoah, Lot No. 15180 Racatan, Lot No. 3803 S2FW, King Solomon, Lot No. 12269 S2FW, S1. Rainbow, Lot No. 12267 Evangeline, Lot No. 12271 Queen Sheba, Lot No. 15181 Dinner Bucket, Lot No. 3806 Pilot, Lot No. 3452

> Owner: Tamarac Mines Ltd. N.P.L. Optionee: Yukon Spirit Mines Ltd.

> Operator: Yukon Spirit Mines Ltd.

Reported By: A. S. Greene, P. Geol. Spectrum Geological Services Ltd.

Submitted: January 24, 1989

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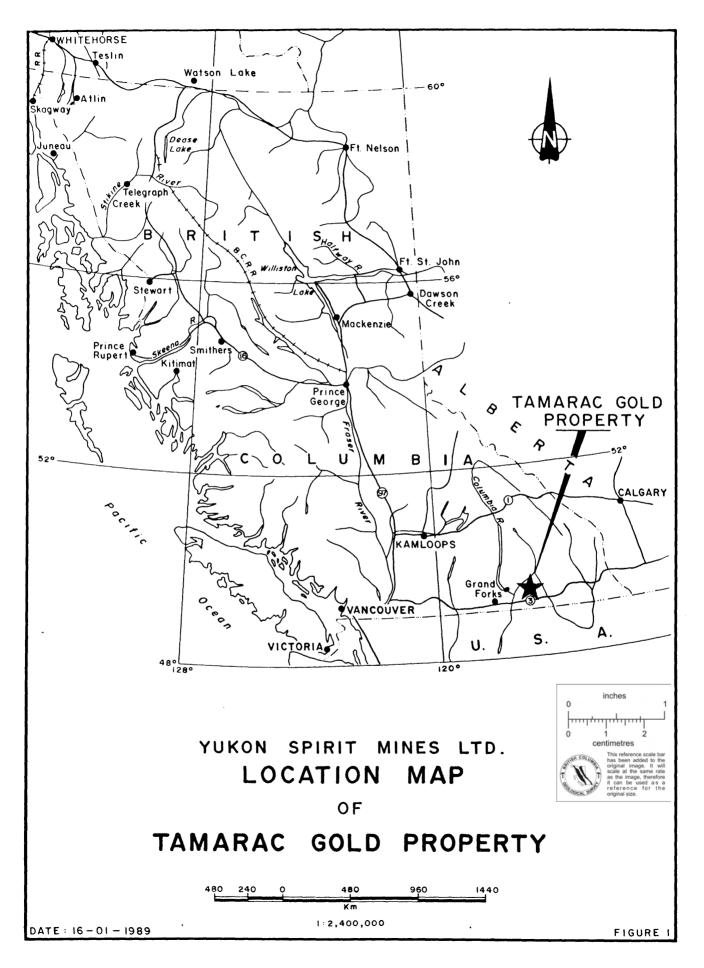
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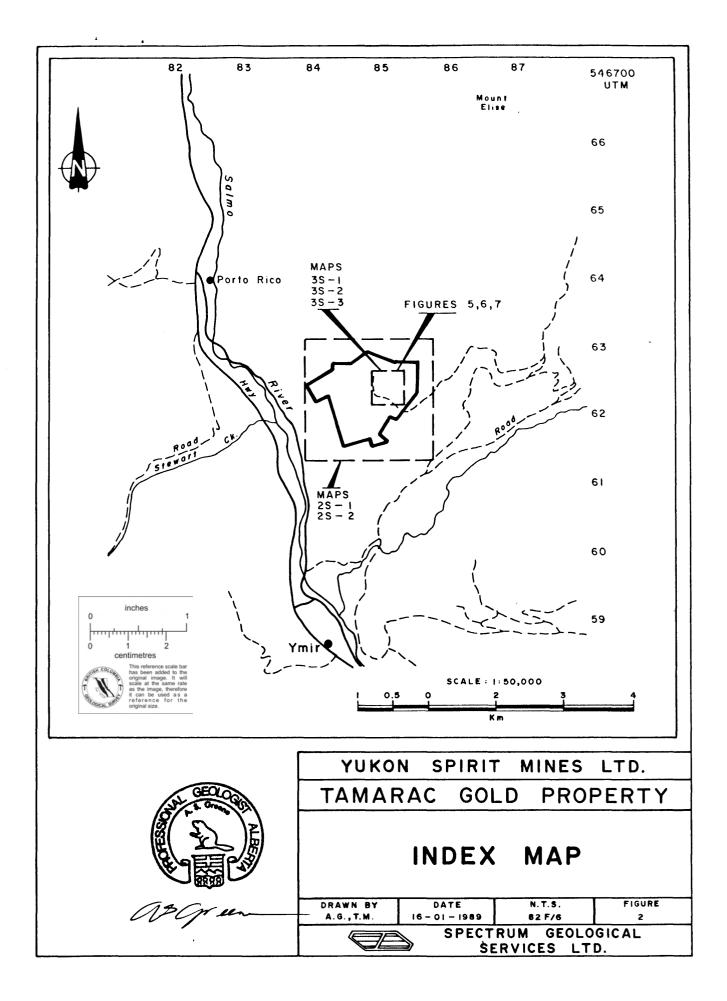
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INTRODUCTION

SUMMARY AND RECOMMENDATIONS

INTRODUCTION

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Spectrum Geological Services was engaged by J. P. Stevenson and Associates, Natural Resource Exploration and Development Ltd. on behalf of Yukon Spirit Mines Ltd. of 615 - 625 Howe Street, Vancouver, British Columbia, V6C 2T6, at the request of Hugh Grenfal of Grenfal Explorations Ltd., to compile and prepare material on the Tamarac Gold Property and, on the basis of this information, to ascertain whether the property has sufficient merit to justify mineral exploration expenditures. The following report presents the author's findings and outlines appropriate recommendations.

This report is based on information data provided by Grenfal Explorations Ltd. and on exploration data obtained from a geophysical and geochemical program conducted by Grenfal Explorations Ltd between 1988-11-10 and 1988-12-15. Information was also obtained from a report on the Tamarac Mineral Property by Alex Burton, 1988-03, for Wirlwind Resources Ltd., outlining work and results of an exploration program conducted over the area of interest during 1979 and 1980. Sampling data and surface and underground geological mapping data was obtained from these sources. The author reconnoitered the workings area on November 12, 1988. The underground workings were entered and sampled on December 17, 1988. Other general information was obtained from government geological publications.

SUMMARY AND RECOMMENDATIONS

<u>Summary</u>

The Tamarac Gold Property ('the property'), optioned to Yukon Spirit Mines Ltd. by Tamarac Mines N.P.L. consists of 9 contiguous Crown Granted Claims encompassing and area of 135 hectares. The property lies east of the Salmo River, about 5 kilometers northeast of Ymir, British Columbia.

The initial phase of the present exploration program was conducted in the vicinity of the Tamarac mine workings and consisted of VLF-EM geophysical surveying over a grid encompassing 13.5 ha., a soil geochemical surveying over a flagged grid encompassing 87 hectares, mapping, and rock sampling in old trenches, vein outcrops, and accessible underground workings.

No clearly defined conductors or structures were delineated by the present VLF-EM and Magnetics survey. However, the survey did not have a sufficent size of coverage to determine background values for the different rock types outside the known mineralized area or to discern any overall patterns with which the data over mineralized zones could be filtered.

The soil geochemical survey provided excellent and encouraging results and, in the vicinity of the Tamarac Vein, has confirmed the validity of earlier work by Burton Consulting Inc.. In addition, several new base metal anomalous zones and probable geological controlling structures in the vicinity of the Tamarac mine workings and in the northeast portion of the property were delineated by the survey.

Anomalous gold geochemical values were obtained in areas within the feldspar porphry, the controlling rock unit, both north and south of the Tamarac vein. The interpreted fault structures believed to control mineralization extend beyond both the northern and southern limits of the survey grid. Estimates of ore in place in the Tamarac Vein as determined by Burton Consulting Inc. (1988) is as follows: (defined pg. 16) Proven Ore: 55 890 tonnes at .147 oz Au/st (5.1 g/t) Probable Ore: 63 180 tonnes at .065 oz. Au/st (2.25 g/t) Possible Ore: 440 640 tonnes at .13 oz. Au/st (4.5 g/t) A central, higher grade part of the Tamarac Vein is estimated to have reserves of 30 000 tonnes at .3 oz. Au/st (10.4 g/t).

In addition to the already established reserves in the Tamarac Vein, excellent potential for gold mineralization exists in the feldspar porphry rock areas north and south of the workings area. The initial phase of the present program has provided geological information and results that are sufficiently encouraging to warrant a second phase of exploration.

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Recommendations

A Phase 1 exploration program at an estimated cost of CDN\$76,285.00 is proposed. The goals of the second phase of the program would be as follows:

- 1. Prove up additional economic ore reserves of the Tamarac Vein and evaluate the Vein at deeper levels.
- 2. Investigate the possibility of related vein structures in the immediate vicinity of the Tamarac Vein and determine the control and extent of mineralization in the linear anomalous zones delineated by the present soil sampling program.
- 3. Ascertain the role of the feldspar porphry in localizing, hosting or controlling gold mineralization.
- 4. Explore the ground north, east and south of the present grid for possible extensions to the linear geochemical anomalies.

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A general outline of the Phase 1 exploration program to be conducted over a 1 month period is as follows:

- Geochemical Soil Surveys Establish ground control and grid extensions at the present spacings and conduct follow-up soil surveys north, south and east of the present grid and analyse soils by ICP and AA for the standard suite of 32 elements. Conduct detail sampling in high arsenic-gold anomalous areas. Estimated number of samples: 400
- 2. Underground Work An attempt should be made to clear any adit portals to facilitate geological investigations and sampling. (If an adit is caved, however, the cost of rehabilitation is not warrented). Survey, map, sample and document present known vein structures and mine workings in the Tamarac workings.
- 3. Surface Work Trench to bedrock, map and sample the the base metal geochemical anomalies detected by the present survey within the augite porphry; conduct a detailed lithogeochemical sampling program of outcrop and existing trench areas within the gold-arsenic anomalous area of the feldspar porphry; trench and sample the feldspar porphry rock unit at a 50 m. X 50 m. spacing. Estimated number of samples: 150
- 4. Diamond Drilling drill on the Tamarac Vein to levels below and to the north of the program conducted in 1980; conduct diamond drilling in the anomalous areas south and north of the Tamarac Vein. Total Length: 360 meters, estimated number of assays: 200

It is further recommended that the property be augmented in size by the aquisition of mineral claim holdings to the north, south and east of the property. (see Claim Map, Figure 3)

As part of a Phase 2 program, contigent upon favorable evaluation of the feldspar porphry rock unit by the lithogeochemical survey, the following work is recommended:

 Geophysical Survey - Establish ground control and grids over all areas of the grid mapped as feldspar porphry; conduct a ground Induced Polarization Survey over the feldspar porphry rock area. Estimated area of survey: 60 ha.

The report titled ``Summary Report and Proposed Exploration Program, Tamarac Gold Property, Nelson Mining Division, Southeastern British Columbia'' is respectfully submitted on this 24 th day of January, 1989.

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A. S. Greene, P. Geol. SPECTRUM GEOLOGICAL SERVICES LTD.

SECTION 1 - PROPOSED EXPLORATION PROGRAM

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SECTION 1 - PROPOSED EXPLORATION PROGRAM

1.1 Exploration Potential and Targets

Drilling

The down-dip extension of the Tamarac Vein below the 1400 meter elevation has not been evaluated and presents good exploration potential. Coring or reverse-circulation drilling may be employed. However, lithogeochemical analysis of core or cuttings over the entire length of the hole is recommended. (In the case of hydrothermal or volcanogenic deposits in volcanic-intrusive settings, the alteration assemblages, zoning patterns and mineral deposition paragenesis are well understood. As an aid to evaluation and followup exploration, the lithogeochemical data would provide useful information in determining character and possible type and scale of mineralization and alteration.)

Geochemical Exploration

Detailed follow-up sampling of extensions to anomalous zones defined by the present soil sampling program should be carried out north, south and east of the present grid. Physiographic and overburden information should be included as part of the sample data.

Geophysical Exploration

A detailed Induced Polarization survey may aid in locating disseminated gold-pyrite-arsenopyrite mineralization within the feldspar porphry and would provide useful data for follow-up surface and drilling exploration. The specific geophysical signature, if any, of gold-arsenic anomalous areas can be determined and the geophysical responses in adjacent ground correlated and compared to that signature. Since the mineralized structures as detected by the geochemical survey cut across the bedding structures and are associated with disseminated sulphide zones, an IP survey may be effective.

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As an aid to selecting other exploration targets, an IP survey may also help to establish the relationship, if any, between the feldspar porphry and mineralization.

Surface Exploration

Geochemical anomalies in terrain with overburden cover should, be trenched, uncovered, mapped and sampled.

All roads should be resurveyed to provide both horizontal and vertical control for mapping and sampling. Field geological data covering the entire property should be obtained and a detailed structural and lithologic map compiled. Special emphasis should be placed on examining the internal and external relationships of the feldspar porphry rock unit.

All geochemical anomalies should be trenched and sampled. Where rock assays are anomalous, additional trenching and stripping, detail mapping, drilling and blasting, and sampling of 50 kg batches should be undertaken.

1.2 Estimated Costs Phase 1

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Phase 1 exploration will be conducted over a period of 30 days. The proposed budget is as follows:

Operating Costs

Vehicle rental: - 20 days @ 65 per day per vehicle	\$ 1 300
Camp Costs (meals, accommodation) - 40 man-days @ 50 per man-day	2 000
Freight	500

Construction Costs

Catwork and road maintainance/upgrade	3	000
Excavator: 6 days @ 500 per day	3	000

Geochemical Exploration

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Surface Exploration

Geological mapping and sampling

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-Project Geologist	20 days @ 300 per day	6 000

-Coologigal	Anniatant	20	dave	6	100	A	2	
-Geological	ASSISTANT	20	aays	6	190 ber	aay	3	800

-400 meters @ 100 per meter40 000Core Assays: - 200 samples @ 20 per sample4 000Reports4 000Data Compilation and final report1 000Drafting: Misc. supplies, reproduction:800	Contingencies - 10%		935
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		4	000
	Diamond drilling (NQ size): -400 meters @ 100 per meter	40	000

Diamond Drilling

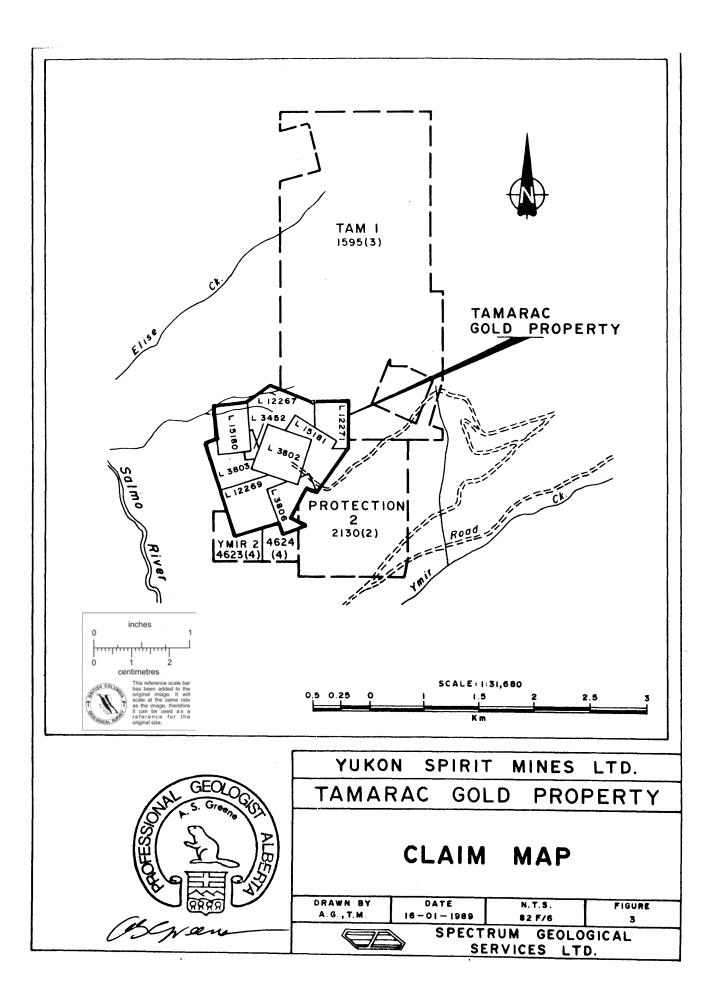
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SECTION 2 - PROPERTY DESCRIPTION

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(figure 3)

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SECTION 2 - PROPERTY DESCRIPTION

2.1 Property Location and Access

The property is located 5 kilometers northeast of Ymir, British Columbia, on the south and southeast slopes of Mt.Elise above the Salmo River and Ymir Creek.

The property is accessed from Ymir on Highway 6. Five kilometers of secondary road lead northeastward to the abandoned Ymir-Goodenough mine area. Good gravel access roads extend from the Ymir Creek valley to the Ymir-Goodenough Workings. From here, a narrow 4X4 track can be followed to the old Tamarac Mine area at an elevation of 1362 meters to 1432 meters. Numerous tracks and roads connect the portals of the underground workings and trench sites in the old mine area.

2.2 Property Ownership

Property Mineral Claims - Description and Status

Property/Project: Tamarac Gold Property

Mining Division: Nelson Mining Division

CROWN GRANTS

Claim Name	Lot No.	Tax Due Date	Ownership	Option Terms
Tamarac	3802		Tamarac Mines Ltd. N.P.L.	
Pharoah Fr.	15180		• •	
Racatam	3803			
King Solomon F	r. 12269			
Rainbow	12267			
Evangeline	12271			
Queen of Sheba	Fr. 15	181		
Dinner Bucket	3806			
Pilot Fr.	3452			

Total Area: 135 hectares

2.2 Climate, Topography, Local Resources

The area of interest lies in forested, mountainous terrain of moderately high relief. Precipitation is seasonally variable, generally moderate and typical of B.C. interior mountain areas. Snow cover in the winter months is moderate to high (up to 3 meters at 1500 m. elevation, 1 meter at 900 m. elevation). Without provision for plowing and snow removal, vehicle access to the old mine workings at 1400 meters is restricted to the interval between May and November.

The area economy is resource based, mainly in logging and mining. Personnel and equipment for physical work is readily available at competetive rates. Equipment and manpower for mining and development work is available at the local level. Ore processing and milling facilites exist locally at Salmo and elswhere in the West Kootenay area. The Cominco Smelter at Trail lies at 50 kilometers distance from the property. Rail transport facilities lie within 5 kilometers distance from the property. Truck haulage services either to mill or smelter is available locally.

2.4 History and Previous Exploration

The property area was originally staked in 1897 during a period of very active mine exploration and development in the area.

Burton (1988) describes the property's early history as follows:

''The mine was first staked in 1897. Since then there have been several attempts, but no continuous production has been attained.''

'After 1897, a winze was sunk down the Tamarac Vein. A 5,000 foot Riblet Tramway was built and some small shipments of ore were made before the great fire of 1902 when the Tramway and the whole valley was burned. It was from the winze that a little ore was shipped to the boundary Smelter in 1905.'' ''In 1925, a carload of ore was taken from the Graney Workings. This [load] was reputed to be 25 tons grading 1.45 oz. Au/T. In 1933, two carloads were taken from the Powell Workings [consisting of] 28 tons of 1.41 oz. Au/T and 34 tons of 1.48 oz. Au/T. in 1934, the property was explored again but records are incomplete. In 1937, the mine was connected by road to the Goodenough Mine and the provincial highway system at Ymir. [At this time] the 3-Level was driven over 650 feet and a 100 foot vertical raise connecting the bottom of the western winze at 2 Level to the 1 level complete.

No other significant exploration was done until Greenwood [Explorations Ltd.] explored in 1979 and 1980.''

The program conducted by Greenwood Explorations in the Tamarac mine area included geological mapping, soil geochemical surveying (zincarsenic-manganese-gold), and drilling. Some results and conclusions based on this program (Burton, 1988) are summarized as follows:

Geology:

The central portion of the property lies in a plagioclaise porphry flow ?enclosed and bounded by coarse grained augite porphry flows. The contacts between the two main rock types are fault contacts.

Most of the veins occur in the feldspar porphry unit and are cut by lamprophyre dykes.

The Tamarac Vein strikes east-west and dips moderately and consistently northward. Gold reportedly occurs as free gold in quartz and associated with pyrite and arsenopyrite mineralization in altered wallrock.

There are at least three other gold-carrying quartz veins in the mine area. These veins strike in a range between 320 deg. to 90 deg. and dip in a range of 40 deg. to 60 deg. to the north.

Geochemistry:

Gold veins correlated well with soil geochemical gold anomalies exceeding 100 ppb and arsenic anomalies exceeding 100 ppm. Several anomalies outline clusters of veins, extensions of known veins, as well as otherwise unexplored areas.

Ore Reserves:

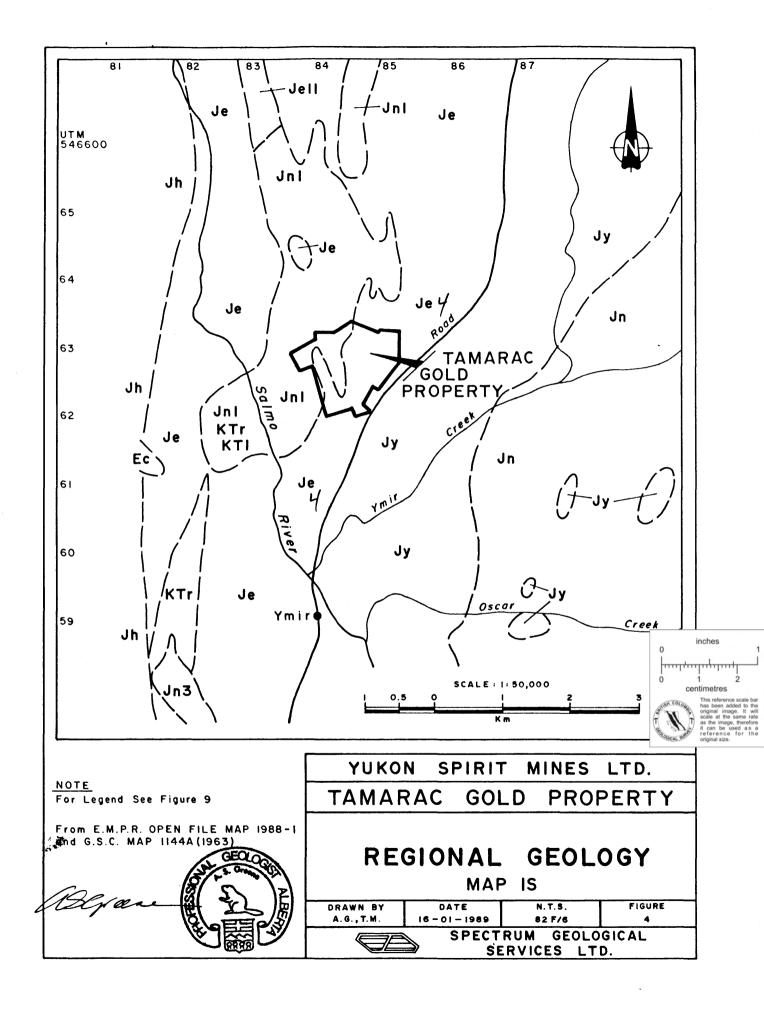
Ore reserve calculations were made based on 13 diamond drill holes, and surface and underground information on the Tamarac Vein in the area between 54N and 62N on the present baseline.

Proven Ore: 55 890 tonnes (thicknes = 4.14 meters) at .147 oz Au/st (5.1 g/t)

Probable Ore: 63 180 tonnes (thickness = 3.9 me- ters) at .065 oz. Au/st (2.25 g/t)

Possible Ore: 440 640 tonnes (thickness = ca. 4 meters) at .13 oz. Au/st (4.5 g/t)

A central, higher grade part of the Tamarac Vein is estimated to have reserves of 30 000 tonnes at .3 oz. Au/st (10.4 g/t).



2.5 Regional Geology

The shear and fault-fissure quartz vein ore deposits of the Ymir gold camp occur in sedimentary, volcanic and granitic rocks. The economic deposits found to date have occurred in the sedimentary and volcanic sequences.

The property is underlain by rocks of the Elise Formation which forms the basal section of the Lower and Middle Jurassic Rossland Group. North of the property the Formation has an aggregate thickness of up to 2.8 km.. The rocks consist of andesitic to basaltic extrusive volcanics, thin argillite beds, flow breccias, agglomerates, tuffs and subvolcanic intrusives. The subvolcanic intrusives are mainly augite porphry and feldspar-augite porphry. The heterogenous assembly of volcanic and synsedimentary rocks comprising the formation indicates intensive activity in a marine environment typical of an volcanic island arc setting.

The Elise Formation conformably overlies the lower Jurassic sedimentary rocks of the Ymir Group. The Ymir Group consists of slightly metamorposed and deformed argillites, slates, minor impure limestones and impure quartzites with an aggregate thickness of about 1 km. These sedimatary rocks strike roughly northeast and dip northwest. Sills of andesite composition intrude the upper rock units and may be of Rossland Formation age. Several lamprophyre, felsite and granite dykes and sills related to the Nelson Batholith intrude Both the Elise Formation and the Ymir Group in the Ymir area.

The Elise Formation underlies Hall Formation quartz arenites and greywackes of middle to upper Jurassic age. The change to arenaceous sedimentation and lack of volcanic flows indicates an abrupt cessation of volcanic activity at that time.

The greater part of the Ymir area is underlain by Nelson plutonic rocks of the Nelson Batholith and its satellites. The age of these plutonic rocks, based of correlation studies and K-Ar analyses ranges from Middle Jurassic to Lower Cretaceous. The composition of the plutonic rocks range from granite to granodiorite. Numerous dykes of composition ranging from lamprophyre to rhyolite intrude the plutonic rocks. Satellitic intrusive rocks are more varied in composition than those of the batholith. Compositions lie in a range from granite to quartz diorite. Two large, irregular, sill-like bodies of feldspar porphry that outcrop on the west slope of Mount Elise north of Ymir may be Nelson plutonic rocks. Similar porphrytic intrusive bodies occur near the Silver King mine and the Tamarac mine.

Numerous faults occur throughout the area. Major strike-slip faults are concordant to the strike of the sediments and follow the trend of the Kootenay Arc. Transgressive faults radial to the Nelson Batholith are more conspicuous and in the Ymir area strike in a northwest direction.

The major geological structure and in which the Hall and Rossland formations lie is a syncline with an axis that in the Ymir area approximately follows the Salmo River.

2.5 Property Geology

The property lies near the western and northwestern margin of an arm of the Nelson Batholith and within a large inlier of sedimentary and volcanic rocks between this arm and the main body of the Nelson Batholith. The western part of the property is underlain by granodiorite rock which constitutes part of a northwardly elongated pluton, satellitic to the Nelson Batholith.

Lamprophyre dykes and rhyolite dykes of Tertiary or older age cut intrusive, volcanic and sedimatary rocks within and adjacent to the property. These dykes are oriented subparallel to bedding and define structural breaks that cut quartz vein structures or coincide with terminations of veins. East of the property, a large vertical granitic dyke oriented northeasterly transects bedding and foliation at low angles.

The central portion of the property consists of brown to reddish brown weathering feldspar porphry volcanic rock flanked by coarse grained augite porphry and flow breccia to the east and west. The feldspar porphyry is of two types: plagioclaise porphrytic flow (unit Je8); and coarse grained plagioclaise porphry (unit Je11). The latter outcrops in an area east of the main underground workings, is oblong in shape and is probably a subvolcanic intrusive. However, since the contacts between unit Je3/4 and units Je8 and Je11 are fault contacts (Burton, 1988), it is possible that the feldspar porphry may be younger in age than the Elise Formation volcanics and is related instead to the late Mesozoic intrusives outcropping in the western portion of the property.

Since most of the quartz veins occur in the feldspar porphry, the structural relations, both internal and external, may be important to ore deposition.

<u>Structure</u>

Generally, the observed mineralized quartz veins occupy east to north striking structures and dip moderately to the north and east respectively. Other mapped quartz veins conform approximately to the strike of the volcanic rocks. A similar relation was observed by the author at the Ymir-Goodenough workings adjacent to the east. Here, the main mineralized zone occurs within an area of quartz filled shears and fissures striking N 60 deg. E and dipping 60-70 deg. northwest.

The Tamarac Vein is reported as a curving .3 to 1.3 meter wide quartz veined shear which strikes northerly to easterly with a 30 deg. to 50 deg. dip. The vein occurs in a schistose portion of the feldspar porphry and where the porphry becomes more massive, the vein is dragged in the direction of the shear and terminates. (B.C. Ann. Rpt., 1928). Burton (1988) on the other hand, on the basis of drill intersections, reports that the vein strikes east-west and dips 30 deg. north in a consistent fashion. (It is possible that these descriptions refer to two different veins and that drilling intersected a vein not previously recognized. Alternatively, Burton's conclusions may have been based on drilling done into the east-west striking portion of the vein. In either case, portions of the Vein below the 1400 meter level were not evaluated by the 1980 drilling program.)

The results of the present geochemical survey strongly suggest two fault zones striking N 70 W and N 40 E. A northeast striking parallel structure is also evident at the northern boundary of the present grid. Ground follow-up of these structures has not as yet been done.

A prominent but irregular shear and breccia zone, .5 meter wide, examined by the author at the caved portal of 1 Level is oriented N 50-60 deg. E and dips 90 to 70 deg. north. Another shear examined in a stope of the Graney adit strikes north and dips 70 deg. west.

<u>Mineralization</u>

The main mineralized structure, called the Tamarac Vein is parallel to the Ymir-Goodenough Vein but with a gentler dip of 30 degrees to the north. The author was unable to access any of the underground workings on the Tamarac Vein. The following is a description of the vein by Burton (1988):

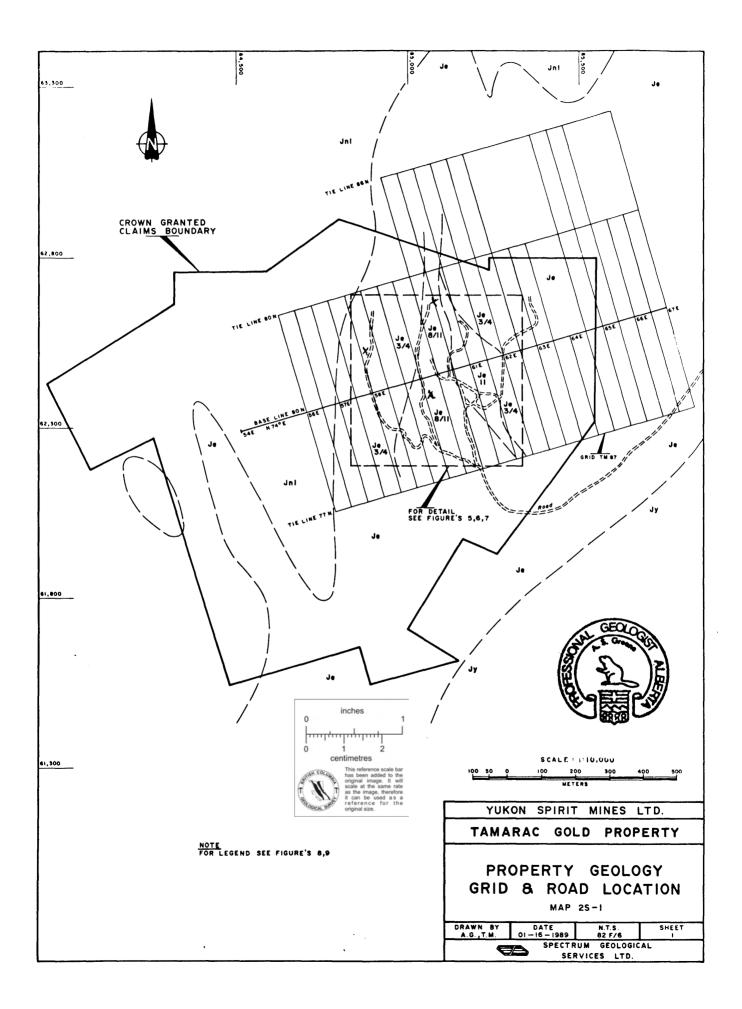
''The mineralized section in the Tamarac Vein consists of a central core of quartz plus a lesser amount of fault gouge carrying pyrite and arsenopyrite with values in gold. Native gold has been reported but has not been verified. Wall rocks on both the hangingwall and footwall are altered with pyrite and traces of arsenopyrite and carry decreasing amounts of gold away from the central vein. The vein occurs in a host rock mapped as feldspar porphry.''

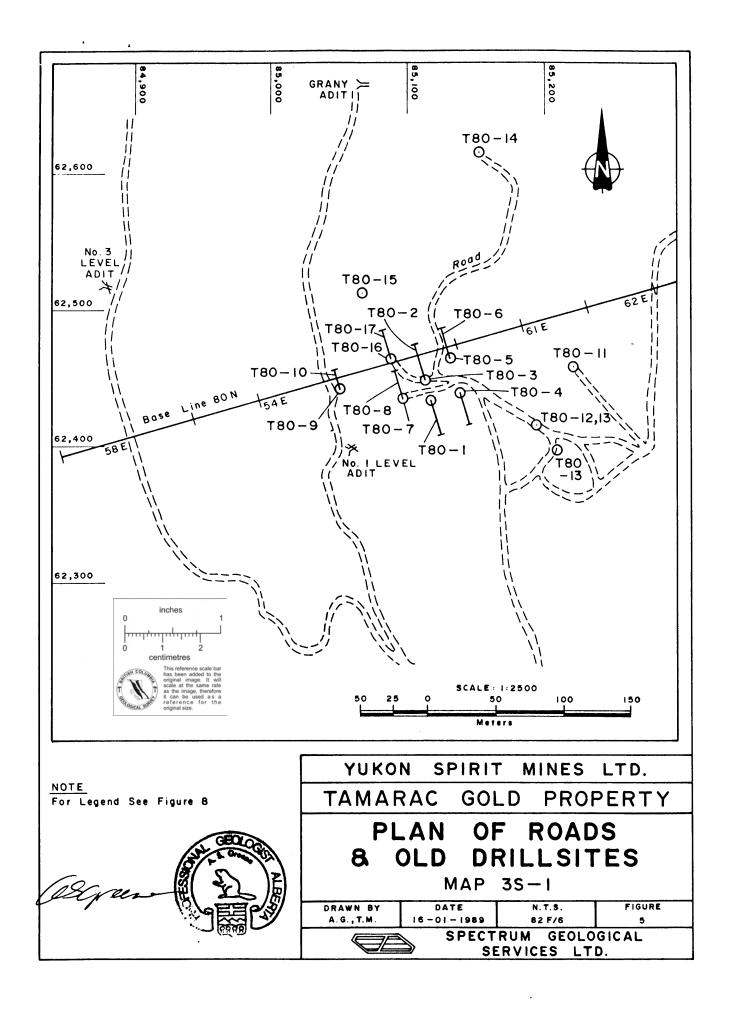
As Burton notes, there are several other mineralized veins in the vicinity of the workings. Recent sampling (see Table 1-1) of a north striking quartz vein in the vicinity of the 1 Level raise yielded values of .119 oz Au/st (4.2 g/t) over a width of 1 meter. An east striking quartz vein at the Powell Shaft yielded .122 oz. Au/st. over a width of .15 meter. Other veins sampled by Burton in the area contain similar gold values.

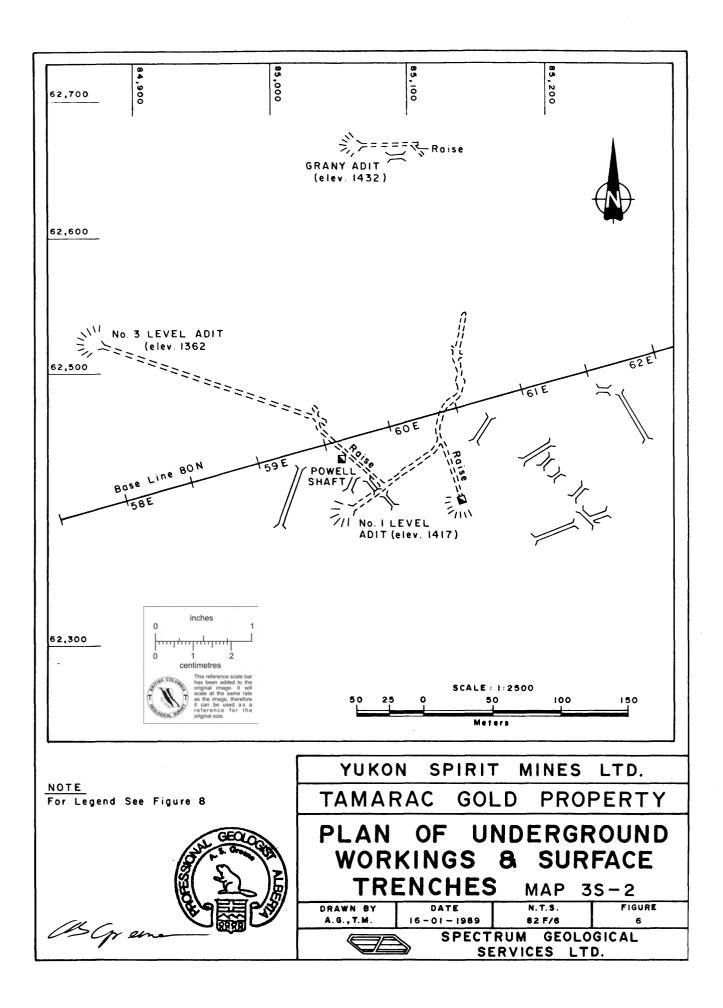
Discussion:

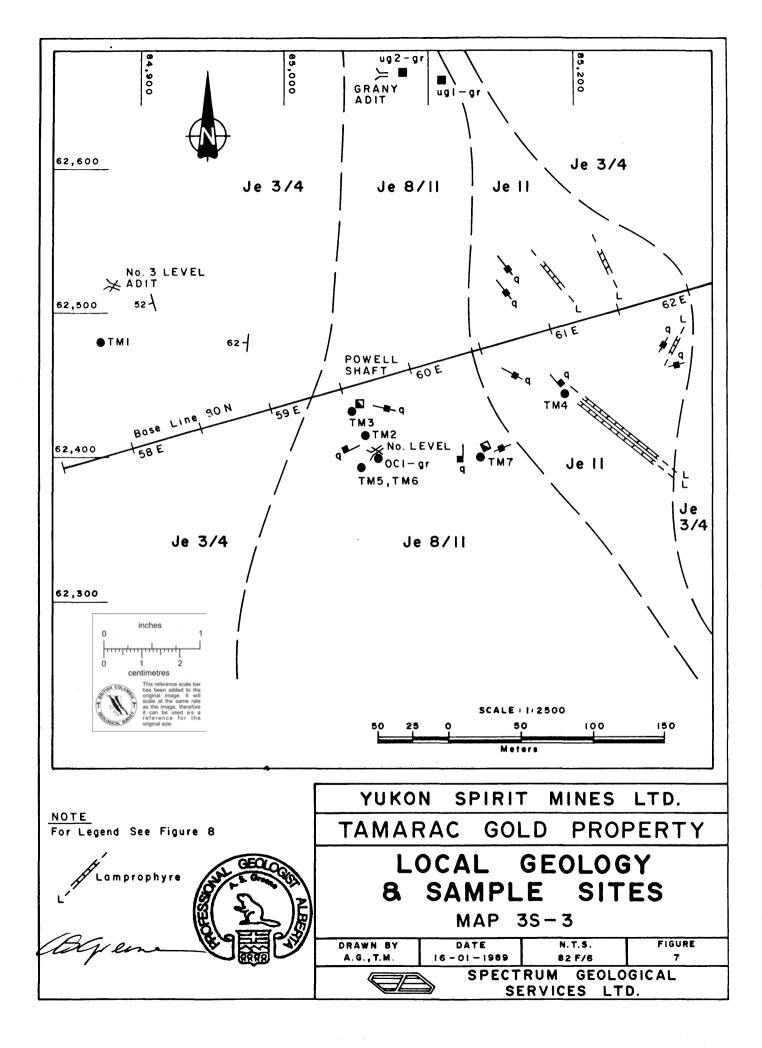
The feldspar porphry rock unit (mapped as units Je8 and Je11 on the property) is an important guide and host rock to gold mineralization in the area (eg. Silver King Porphry). Felsic volcanics in general are hosts to, or associated with, gold mineralization in other volcanogenic gold producing regions. Irregular bodies of quartz-feldspar porphry are in intimate association with exhalite gold deposition in the Timmins area. A suite of rocks, including syenite porphry, augite porphry and syenite, similar in composition to the rocks in the Tamarac vein area, hosts the majority of ore bearing structures in the Kirkland Lake area. The gold bearing volcanic intrusives in the Kirkland Lake area have similar or perhaps identical features in common with the feldspar porphry of the Tamarac property. They are lenticluar in shape, concordant to the volcanic and sedimentary rocks enclosing them and gold mineralization occurs as disseminated auriferous pyrite and in quartz stockworks.

The Tamarac feldspar porphry should be examined in detail as a possible host to significant and perhaps more widespread volcanogenic gold deposition on the property.









		END
•	Outcrop Sample Site.	
0	Float or Overburden Samp	le Site.
-	Underground Sample Site	
D	Trench Sample Site.	
0	Drillsite (plan).	
	Drillsite(section).	
, I I I	Trench or Excavation.	
$\langle \chi \chi H \rangle$	Dump.	
	Bench Mark, Survey Point	
~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Fault (defined , assummed)	
	Geological Boundary (define	ed, assummed).
×	Mineral Occurrence.	
	Shaft.	
	Raise.	
45	Foliation(dip).	
- 45	Bedding(dip).	
45	Jointing(dip).	
	Lineation (plunge).	
45	Vein <0.3m(dip).	YUKON SPIRIT MINES LTD.
	Vein >0.3m(dip).	TAMARAC GOLD PROPERTY
	Trench.	MAP SYMBOLS
- →	Old Adit Site.	To Accompany
_ ≍	Adit (open).	FIGURES 5,6,7,9,10
≠	Adit (caved).	A.G., T.M. 16-01-1989 82 F/6 8 SPECTRUM GEOLOGICAL
<b></b>		SERVICES LTD.

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LEGEND

CENOZOIC TERTIARY OR OLDER KT1 - lamprophyre dykes **KTr -** rhyolite dykes MESOZOIC JURASSIC Jn - Nelson Intrusions: Jn1 - granodiorite LOWER AND MIDDLE JURASSIC ROSSLAND GROUP Jh - Hall Formation: siltstone, sandstone, conglomerate, argillite, minor limey argillite, impure limestone Je - Elise Formation: mafic to intermediate flows, tuffs and sub volcanic intrusions Jell - plagioclaise porphry including the Silver King Intrusion Je8 - plagioclaise porphryitic flows (15-30% plagioclaise) Je4 - medium grained augite porphry flow breccia Je3 - medium grained augite porphry flows

# SECTION 3 - SURVEYS

#### SECTION 3 - SURVEYS

### 3.1 Geochemistry

As part of the present program, a soil geochemical survey was carried out in the area of known mineralization and to the north, west and east of the Tamarac mine area. the objectives of this survey were to delineate overburden covered extensions of known mineralization and to assess the potential for parallel-or otherwise related mineralized structures.

A total of 603 samples were collected at 25 meter intervals on 50 meter spaced lines over an area covering 87 hectares in the central and northeastern part of the property.

Overburden within the survey area is generally thin (0.5 -1.5 meters) and consists of a mixture of fine red-brown material, colluvium and angular bedrock fragments. Approximately .2 kg. of the B soil horizon was collected at depths between 10 and 20 cm. and placed in standard kraft envelopes. Samples were shipped to Acme Analytical Laboratories Ltd. where -80 mesh sieved samples were assayed by standard acid leach/AA techniques for gold and ICP techniques for a suite of 30 elements. Raw data and mapped plots are included in APPENDIX 2.

Statistical presentations and element distribution and intensity maps were prepared by New Horizon Software of Vancouver.

**Results** (see APPENDIX 2 and SHEET 2)

Survey results show striking anomalous zones in several metal groups.

Both arithmetic and logarithmic distribution curves in these elements were markedly bimodal or skewed. Gold distributions were trimodal.

In some cases, since elements were highly anomalous over relatively large areas, logarithmic frequency distribution curves were used to determine anomalous cutoffs. In bimodal distributions, the cutoff was set at the trough or upward inflection of the curve; in skewed only distributions, the mean or alternatively, the upward inflection point to the right of the mode determined the cutoff. The lower cutoffs for anomalous soil sample geochemical values are set as follows:

	<u>Cutoff</u>	<u>Maximum Value</u>
Arsenic:	50 ppm	9616 ppm
Barium:	200 ppm	839 ppm
Chromium:	50 ppm	339 ppm
Cobalt:	20 ppm	111 ppm
Copper:	50 ppm	547 ppm
Gold:	50 ppb	4350 ppm
Lead:	40 ppm	867 ppm
Lanthanum:	10 ppm	23 ppm
Nickel:	50 ppm	275 ppm
Zinc:	150 ppm	351 ppm

(Note that cutoffs for arsenic and gold are considerably higher than what might otherwise be considered anomalous.)

Copper, nickel, cobalt and chromium anomalous zones are coincident, occur in augite porphry rock and show strong linear definition in two directions and a generalized triangular ring-like shape. A major anomaly zone, about 100 meters wide occurs in the southeast quadrant of the grid following a well defined northeast direction. A second anomaly zone about 75 meters wide follows in a northwest direction from the east side of the grid. A third, less well defined zone about 75 meters wide follows a northeast direction from the north central area of the grid. The generalized shape of the Cu-Ni-Co-Cr anomaly is a sub triangular ring whose western margin lies at the contact between feldspar porphry and augite porphry.

A coincident gold-arsenic anomaly occurs in the center of the grid. The sharply defined zone of anomalous arsenic values and most of the highly anomalous gold values (greater than 100 ppb) are exclusively restricted to the feldspar porphry rock unit and occur over a width of about 150 to 200 meters. The higher concentrations appear to occur at the feldspar porphry - augite porphry contact which coincides with the western boundary of the Cu-Ni-Co-Cr ring anomaly. The anomalous gold-arsenic zone is open at the southern limits of the grid and may also extend to the northwest beyond the northern limit of grid.

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A ring of anomalous barium values (greater than 320 ppm) roughly coincident with spot highs of lead and zinc occurs at the outer margins of the Cu-Ni-Co-Cr ring and at the eastern boundary of an area of anomalous gold and arsenic. Spotty potassium highs generally coincide with anomalous barium.

The center of the Cu-Ni-Co-Cr ring, as well as the area mapped as feldspar porphry defines a lanthanum (rare earth) high. West of the mapped augite porphry - feldspar porphry contact, the lanthanum high is markedly coincident with the gold-arsenic anomaly.

### Interpretation

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The data from the present geochemical program is statistically reliable and the values obtained can readily be presumed to be valid.

The coincident gold-arsenic anomaly coincides almost perfectly with the feldspar porphry rock unit. The central gold anomaly crossing the baseline 80N approximates the position of the Tamarac vein and shows the vein to have a northeast strike. Flanking the Tamarac vein, discreet gold-arsenic anomalies contact the southwest limits of southwest striking linear Cu-Ni-Co-Cr anomalies.

A well defined zoning pattern exists across the ring anomaly. An alteration zone central to the ring is characterized by significantly higher rare earth content, represented here by elevated lanthanum values. This linear zone extends southwestward to parallel or overly the Tamarac Vein. Over the Vein and within the feldspar porphry, the alteration zone coincides with very anomalous arsenic and gold.

Although the central alteration zone extend beyond the lithologic boundaries of the feldspar prophry, anomalous gold-arsenic occurs only within the feldspar porphry.

South of the central alteration zone, a linear Cu-Ni-Co-Cr anomaly represents a zone of high temperature mineralization of this suite consistent with the mafic volcanics in which it occurs. A similar linear anomaly extends from the eastern boundary of the grid in a west northwesterly direction. In both cases, where the anomalous Cu-Ni-Co-Cr zone contacts feldspar porphry rock, anomalous gold occurs. Anomalous Pb-Zn-Ba at the margins of of the Cu-Ni-Co-Cr zones reflects a metal zoning pattern consistent with epizonal type mineralized veins. Anomalous lanthanum, and/or high potassium flank both sides of base metal zone suggesting an alteration zone that halos the base metal mineralization.

The linear nature of the anomalous base metal zone cutting across foliation and bedding suggests fault control to minerlaization-alteration and vein deposition. The fact that base metal mineralization terminates abruptly at the feldspar prophry contact and goldarsenic mineralization begins, suggests that mineralization is controlled by the crosscutting fault structures and that the respective anomalous elements may have been scavanged from the enclosing rock by high temperature ascending hydrothermal fluids. (i.e. Cu-Ni-Co-Cr from the augite porphry; Au-As from the feldspar porphry). Alternatively, the chemistry of the respective rock types controls the elements deposited.

The faults as defined by anomalous Cu-Ni-Co-Cr and anomalous Au-As extend beyond the limits of the present geochemical survey.

## 3-2 <u>Geophysical Survey</u> (see APPENDIX 3)

A short reconaissance geophysical survey covering about 13.5 ha., was conducted in the area of the Tamarac mine workings to acertain if any geophysical EM and magnetic response or signature could be obtained from rock in the vicinity of Tamarac Vein.

An EM-16 VLF electromagentic tool using the Seattle transmitter as a signal source was used to obtain in-phase and quadrature readings at 25 meter intervals at 50 meter line spacings. The survey discerned a broad in-phase conductor striking N 65 deg. E. The signal, however, diminishes rapidly northeast of the underground workings area.

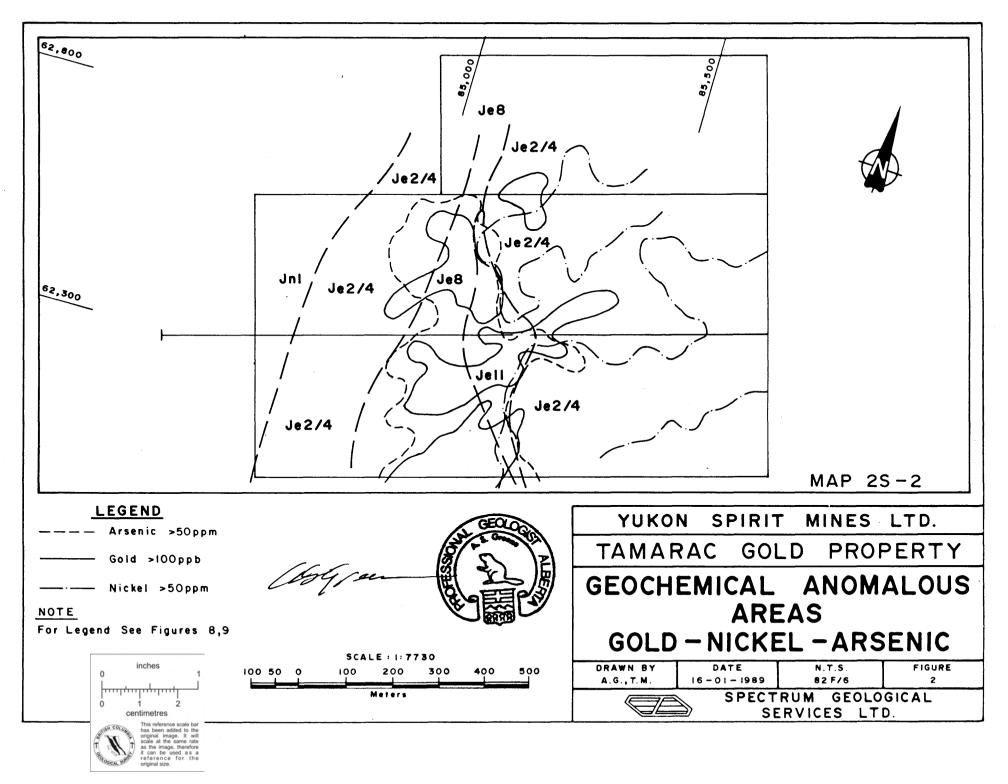
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Results of the VLF-EM survey does indicate a weak or diffuse conductor within the feldspar porphry in the area of the Tamarac Vein. However, the survey does not extend far enough to determine whether the response is local only or part of a general or perhaps irregular pattern within the feldspar porphry. In this instance, a larger area survey is required to determine overall conductor patterns and their relationships to structure.

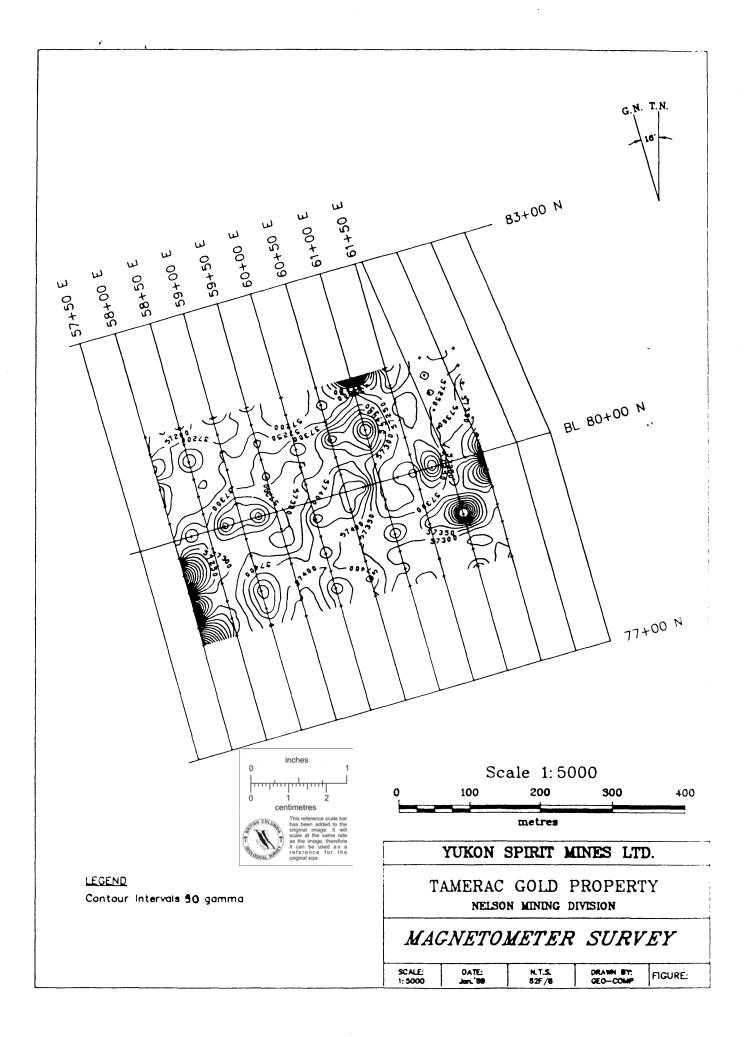
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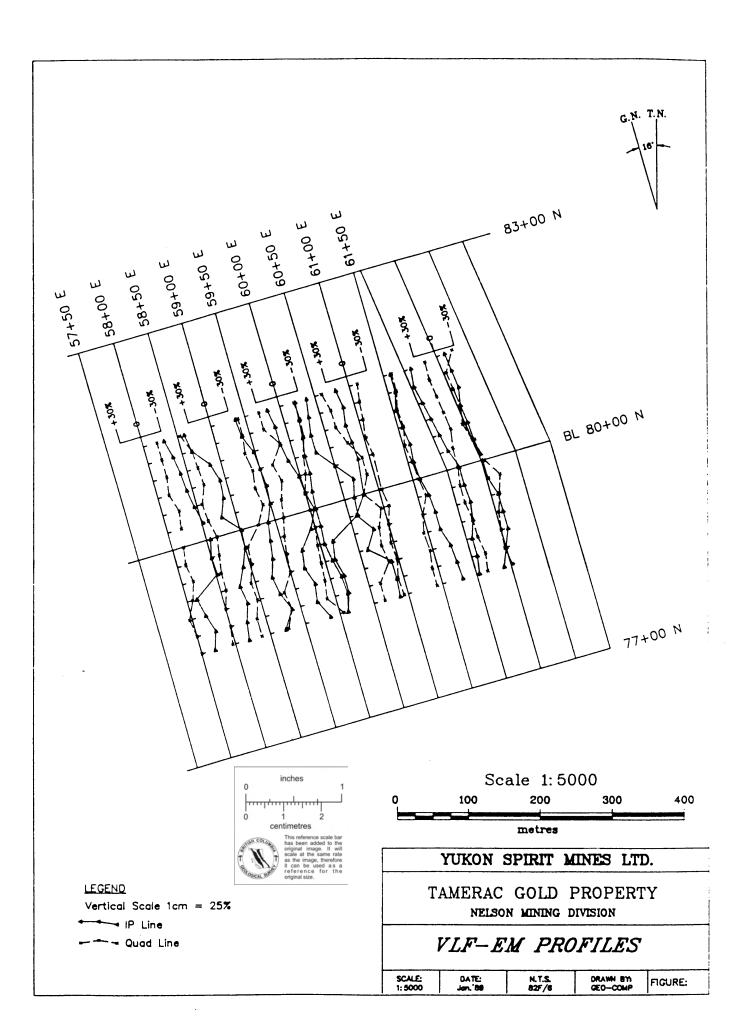
The magnetic survey, done in conjuction with VLF-EM at the same station spacings, did not discern any identifiable magentic contrasts between known geological features. Readings ranged from 57 000 gammas to 57 900 gammas. The isolated magnetic highs at the eastern and northern margins of the survey area occur in augite porphry.

The results of the magnetic survey are generally inconclusive. The magnetic reponse in the area of the inferred alteration zone northeast of the workings within the augite porphry is somewhat lower than other areas within the same rock unit. However, the survey area was not large enough for a reliable pattern to be determined.



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# **REFERENCES**

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# CERTIFICATE and CONSENT

# SUPPLEMENTARY INFORMATION

### REFERENCES

Andrew, K., Hoy, T, 1988: Open File Map 1988-1, ``Preliminary Ge ology and Mineral Occurrences in the Rossland Group Between Nel son and Ymir, Southeastern British Columbia.

Burton, A., 1988: ``Report on the Tamarac Mineral Property, Nelson Mining Division''

Little, H. W., 1960: G.S.C. Memoir No. 302, Nelson Map Area, West Half, B.C.

Minister of Mines, British Columbia: Ann. Rept. 1928

#### CERTIFICATE and CONSENT

I, Alfred Sonni Greene, P. Geol., of Spectrum Geological Services Ltd., with offices at 517A, Vernon Street, Nelson B.C., certify that:

> My address is P.O. Box 57, Kootenay Bay BC 1. VOB 1X0 and that my occupation is that of Geologist.

2. I am a graduate of the University of Calgary, 1969, with a degree of Bachelor of Science - Geology.

I have been a practising geologist since 1969 3. and am a member in good standing of the Association of Professional Engineers, Geologists and Geophysicists of Alberta.

4. This report is based on data acquired by Burton Consulting Inc. and J. Paul Stevenson and Associates, and by limited field examination personally undertaken and on assay results of samples personally obtained.

5. I have no interest, either directly or indirectly, in the properties or securities of Yukon Spirit Mines Ltd.

I consent to the use of this report in the 6. Prospectus, Statement of Material Facts or Qualifying Report for submittal to the Superintendent of Brokers or the Vancouver Stock Exchange.

Date: Jan 24/89 Signed: ABGreen

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A.S. Greene, P. Geol.

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### SUPPLEMENTARY INFORMATION

### Obstacles Toward Exploration

No obstacles are anticipated at this time. However, since the soils and rocks in the Tamarac mine area have anomalously high Arsenic content, due care and attention must be paid to regulations governing excavation or ground disturbance in watershed areas. Planning and proper permitting for road building, trenching and other surface exploration activity is particularly important in environmentally sensitive areas or where health hazards to workers may exist.

### Author's Related Reports

Greene, A. S., 1988: `Summary Report and Proposed Exploration Program, Ymir Consolidated Property, Ymir Area, Nelson Mining Divi sion'' APPENDIX 1 - Tables

# TABLE 1-1 Rock Sample Assay Results and Descriptions

Project: <u>YSM8 - Tamarac Gold Property</u>

Area/Grid: Ymir - Tamarac / T1(1988)

Prospect/Zone: TAMARAC / Tamarac Vein

Taken by/Date: Warren Robb / 1988-09-10

Field	Assay	Au	λ	3
Ref. No	Ref. No.	(oz/st)	(oz/s1	t) Description
TM1		.001	.01	GRANODIORITE/FELDSPAR PORPHRY, very rusty, no visible mineralization
TM2		.004	.01	adit 1; width = 30 cm.; QUARTZ VEIN, 062/ 90, breccia texture, very oxidized, limonitic, no visible mineralization
тмз		.122	.04	adit 2; width = 15 cm.; QUARTZ VEIN, breccia texture, oxidized, limonitic, no visible mineralization
TM4		.001	.01	8050N 5800E; width = 22 cm.; QUARTZ VEIN, 140/70NE, breccia texture, very oxidized, no visible mineralization
TM5		.074	.01	tailings pile; QUARTZ, white, vuggy, infilled with limonite, minor pyrite
TM6		.012	.01	tailings pile; GRANODIORITE, silicified, disseminated pyrite
<b>TM7</b>		.119	.01	<pre>shear zone; width = 100 cm.; QUARTZ VEINS, 004/64W, white, vuggy, infilling shear zone, brecciated texture, very sil- icified selvages, common disseminated pyrite</pre>

Field Rof No	Аявау Ref. No.	Au (oz/st)	Ag (oz/st)	Description
<u>Ref. No</u> ocl-grl	KEL. NO.	(02/81)	l Level; shear zo 50-60/90-70N; wid posite); FELDSPAF limonite staining	Description one, very irregular, av. with = .1 to .5 m. (com- R PORPHRY, abundant g and coating, narrow 5 cm. thick in silici-
ugl-grl			shear; width = .5	ard incline following 5 m. (composite); AN- deposits in shear, 0-
ug2-gr1			sample; series of QUARTZ-PYRITE and 8 cm. (av. 3 cm.)	h drift; composite f narrow shears with d PYRITE-QUARTZ VEINS to ), 10-350/60E, sericite l meter widths in vicin-

Taken by/Date: A. S. Greene / 1988-12-17

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} ; ; ACME ANALYTICAL LABORATORIES LTD. DATE RECEIVED: 852 E. HASTINGS ST. VANCOUVER B.C. V6A 1R6 PHONE(604)253-3158 FAX(604)253-1716 DATE REPORT MAILED:

### ASSAY CERTIFICATE

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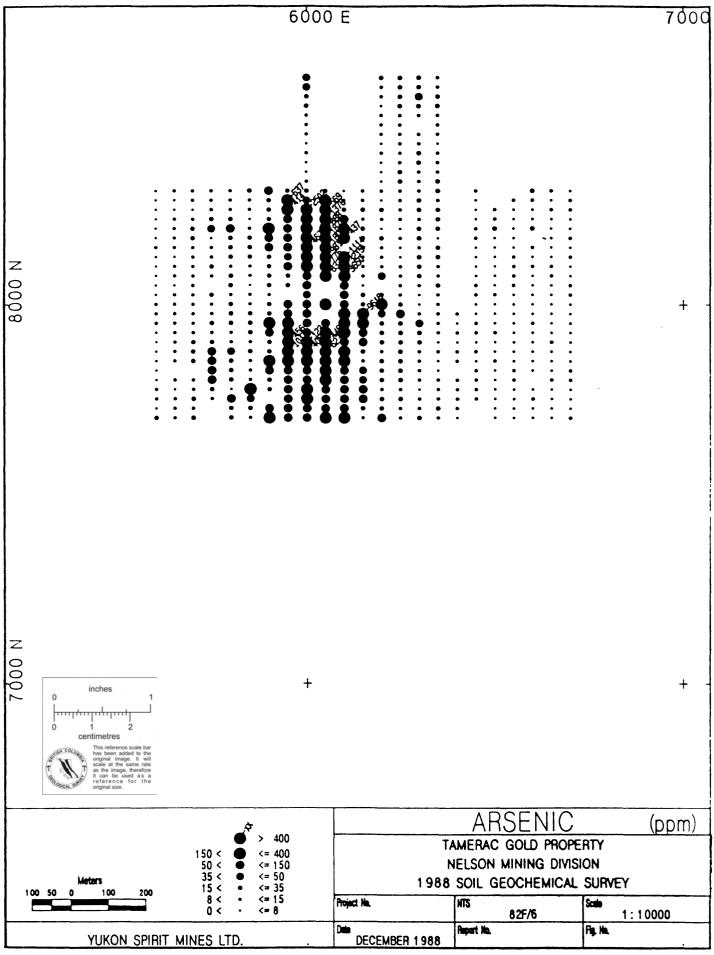
SAM	PLE#	Ag OZ/T	Au OZ/T
0C1	GR1	.01	.018
UG1	GR1	.01	.001
UG2	GR1	.09	.358

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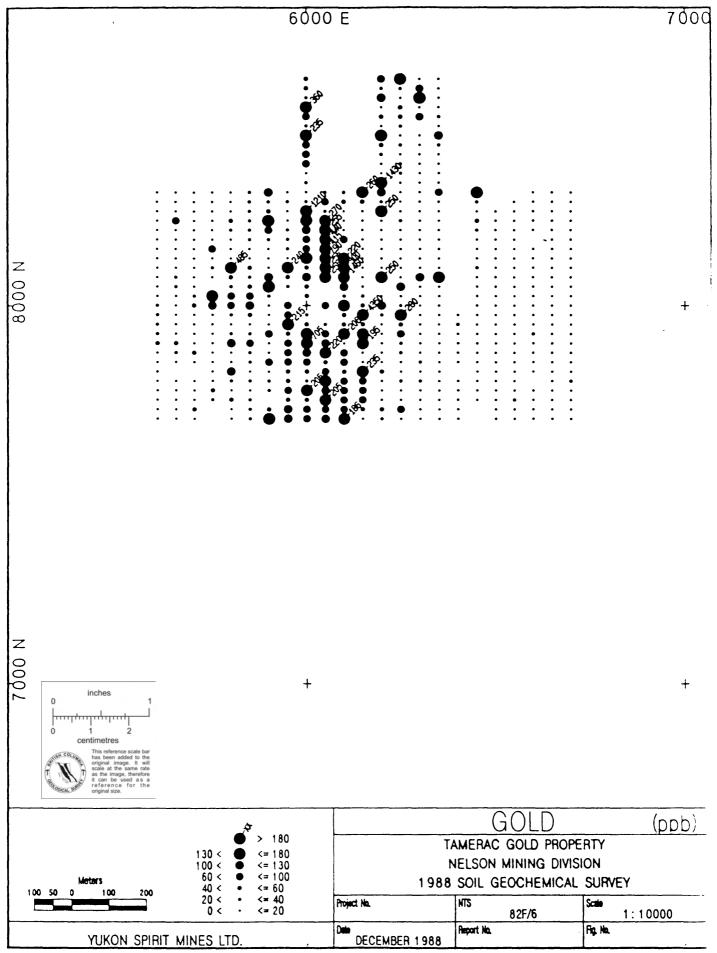
APPENDIX 2 - Soil Geochemistry Data and Plots - Assay Certificates

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New Horizon Software.



New Horizon Software

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GEOLOGICAL REPORT DESIGNATED PROPERTY "B" LILYPAD CLAIM GROUP PROSPECTOR MOUNTAIN AREA DAWSON RANGE YUKON TERRITORY

NTS 115 1/5

62[°]25' N, 137[°]56'W

A Silver-Gold-Lead Prospect

for

YUKON SPIRIT MINES, LTD., 401 - 595 Howe Street, Vancouver, B.C., V6C 2T5

by

JOHN G. PAYNE, PhD 877 Old Lillooet Road, North Vancouver, B.C., V7J 2H6

April 1989

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GEOLOGICAL REPORT DESIGNATED PROPERTY "B" LILYPAD CLAIM GROUP PROSPECTOR MOUNTAIN AREA DAWSON RANGE YUKON TERRITORY

NTS 115 I/5

62[°]25' N, 137[°]56'W

A Silver-Gold-Lead Prospect

#### 1.0 INTRODUCTION

This report was written at the request of Charles Main of Archer, Cathro & Associates (1981) Limited, operator of the property. It is based on a review of data supplied by Archer, Cathro of their work during the period 1981-1984 on the property and surrounding claims, and on personal knowledge of the property acquired during a regional mapping program carried out by the author during 1986 (Payne, et al., 1986). The report discusses the economic geology of the property and outlines a preliminary exploration program.

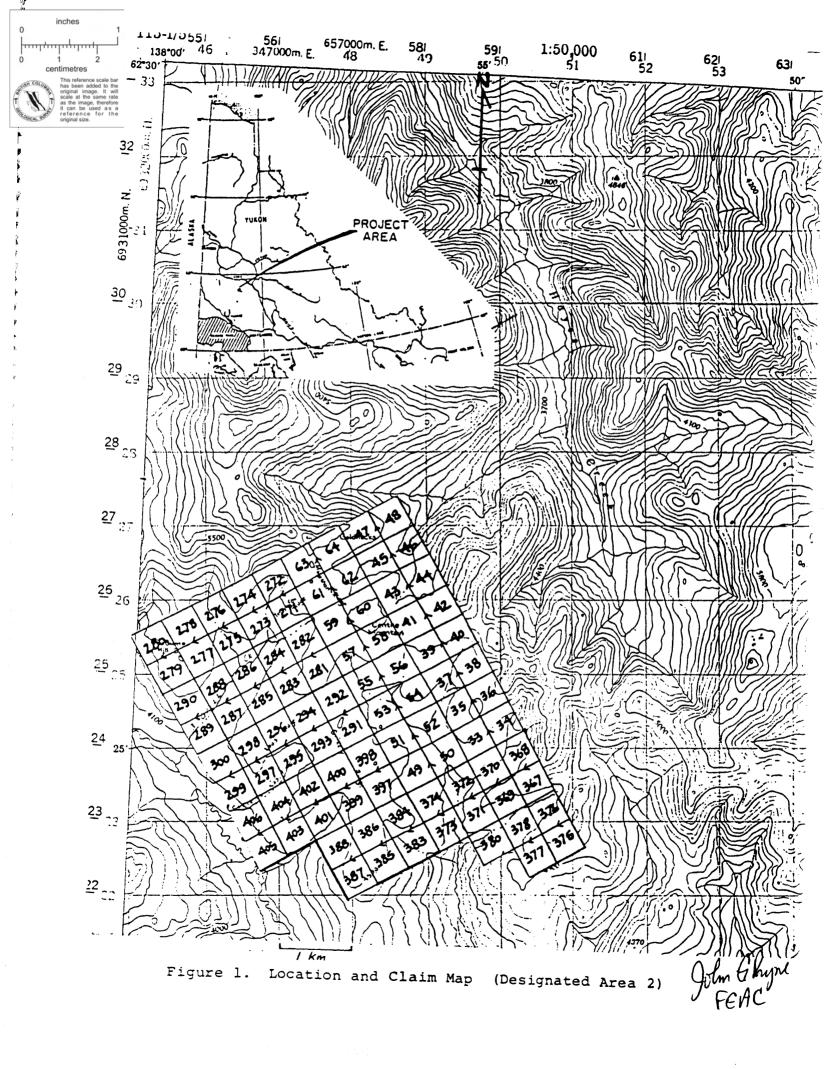
#### 1.1 LOCATION AND ACCESS

The property is on the southwest side of Prospector Mountain in the Dawson Range in central Yukon (Figure 1). Access is by 4-wheel-drive road from Carmacks to just west of the junction of Big Creek and Valerie Creek, about 12 km east of the property. This road could be continued to the property either along the ridge just north of Big Creek, a distance of about 18 km or along the Big Creek Lineament to Hayes Creek and then south along Hayes Creek, a distance of about 20 km. Road construction costs could be shared by exploration programs on adjacent properties on Prospector Mountain. On a ridge 5 km southwest of the property is a fixed-wing airstrip.

Elevation ranges between 1130 and 1680 metres; much of the property is above treeline.

### 1.2 TOPOGRAPHY AND VEGETATION

Prospector Mountain has a relief of 920 metres above the surrounding valleys of Hayes and Big Creek. Slopes are moderate to locally steep on the south side, and steep on the north side. The region was not covered by continental ice sheets during the last glacial advance. Outcrops are confined mainly to ridgetops. At higher elevations, felsenmeer (outcrop weathered by frost action to produce disoriented blocks) is common. This grades downslope into patches of sparser rubble, talus, and solifluxion lobes. North-facing slopes below an elevation of about 1400 metres and broad valleys at all elevations are almost devoid of any indications of bedrock. Drainages are youthful, and exhibit dendritic, V-shaped valleys.



Minor outwash debris from alpine glaciation and colluvium occurs up to elevations of 1050 metres along Big Creek. Eruption of Mount Natazat in the St. Elias Range about 1700 B.P. spread a layer of ash across this part of the Yukon; thickness vary up to several metres because of slopewash and fluvial dispersion. Permafrost is present throughout the region. On south-facing slopes, the active layer (depth of summer thaw) normally extends to 1 metre below surface. On well dried, south-facing slopes, vegetation commonly is grass and patches of aspen, poplar and willow trees. In valleys and moister slopes these blend into groves of white and black spruce. Treeline is about 1250 metres, where trees are replaced by slide alder and above 1400 metres by typical alpine vegetation. North-facing slopes are characterized by permafrost covered by deep moss and peat and shallow-rooted spruce trees. Soil generally is less than 1 metre thick.

#### 1.3 CLAIM STATUS

Table 1 shows the claims and their status; their distribution is shown in Figure 1.

Table 1. Claim Status

Claims	No. of Units	Tag Numbers	Expiry Date
Lilypad 33-64		YA51500-YA51531	Feb. 14, 1990
271-300 367-378		YA61271-YA61300 YA61985-YA61996	Feb. 14, 1990 Feb. 14, 1990
38Ø 383-388	-	YA61998 YA62001-YA62006	Feb. 14, 1990 Feb. 14, 1990
397-406		YA62015-YA62024	Feb. 14, 1990

#### 1.4 PREVIOUS WORK

Exploration work between 1969 and 1980 in the Prospector Mountain region was for porphyry-type Cu-Mo deposits and Cu-Pb-Zn veins.

In 1969 and 1970, a few showings in the region were staked and explored for copper, mainly chalcopyrite and lesser bornite in quartz stringers and veins in both Yukon Group metasedimentary rocks and Carmacks Group volcanic rocks. On Prospector Mountain, minor chalcopyrite, galena, and sphalerite produced geochemical anomalies, and were staked as the Frog and PDY claim groups.

In 1979, Archer, Cathro staked the Lilypad claim group on the basis of geochemical silver anomalies coincident with lead anomalies. By 1980 a larger zone of anomalous silver, lead, gold, and arsenic values was outlined, and 27 mineralized veins were located along prominent topographic linear features.

In 1981 the property was enlarged and an integrated program of surveying, mapping, sampling, bulldozer trenching, and airstrip

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schai construction was undertaken. Wifty additional verns pere located. Trenching on north and west-facing slopes was hampered by permatrost. Veins were erratically mineralized. No. -\$1.10

supr -In 1982 seven dramond drill holes totaling 637 metres explored beneath five of the most interesting showings. These established continuity of structures and sulfide mineralization to depth, and showed that the abundances of sulfides and precious metals vary widely. *51 Et

In 1983 grid soil sampling over the central part of the Lilypad property outlined six primary targets based on coincident base- and precious-metal anomalies 1.43

In 1984, further soil sampling provided greater detail in the target areas. An EM-16 survey tested conductivity of veins and their projections. No strong conductors were identified. Four diamond drill holes totaling 886.6 metres were drilled beneath vein zones with the highest and most consistent gold values.

Designated Property "B" is part of the Lilypad claim group.

#### 2.0 GEOLOGY

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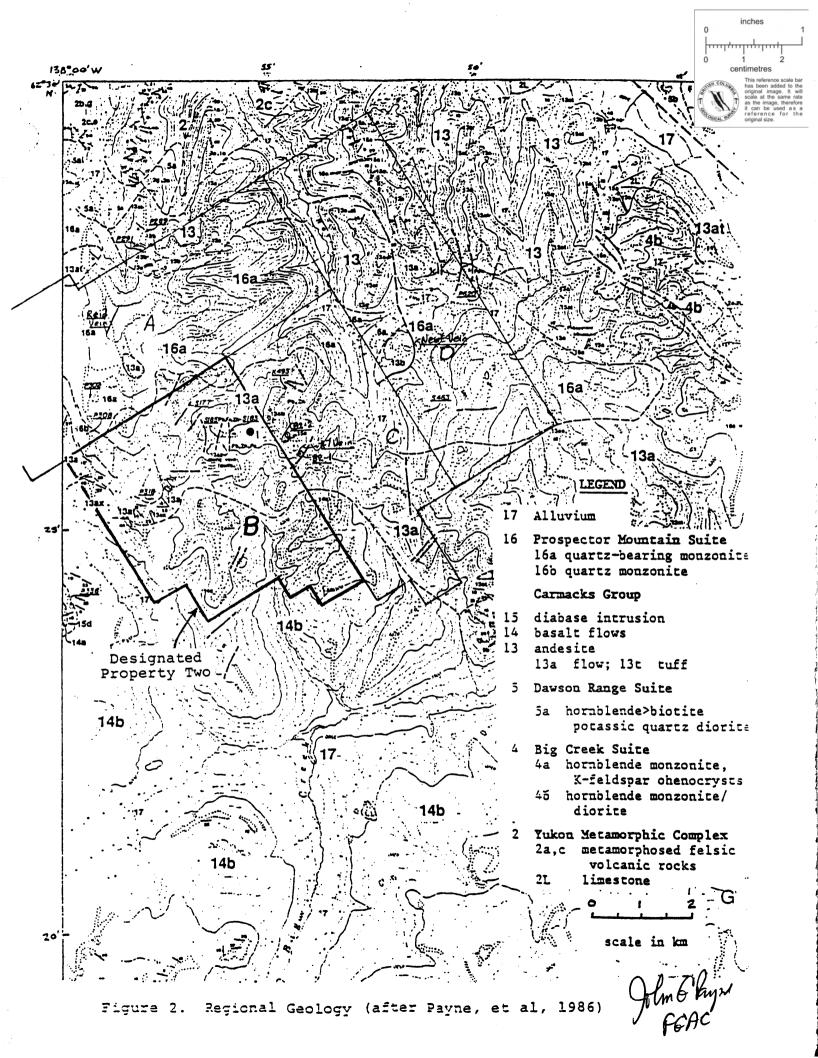
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# REGIONAL GEOLOGY [See Figure 2]

1.158 To the north and locally to the south of prospector Mountain are regions underlain by deformed schists and gneisses of the Yukon Metamorphic Complex. In the Prospector Mountain region, rocks of the metamorphic complex are dominated by metamorphosed felsic volcanic rocks, mainly of tuffaceous origin. On the northwest side of Prospector Mountain, these rocks are intruded and mighatized along the border of a pluton of hornblende potassic quartz diorite of the Dawson Range Suite; dated at 110-100 Ma. NE sti woll ati

Prospector Mountain is underlain mainly by andesitic volcanic and minor sedimentary rocks which have been dated at 60 to 70 Ma, and classified by Archer Cathro geologists as belonging to the Mount Mansen Groups They were classified by Payne, et al. (1986) as being a lower member of the Carmacks Group, mainly because at that time, the Mount Nansen Group was considered to have an age about 100 Ma. (Carlson, G., pers.comm.).

The volcanic rocks were intruded by a large stock of the Prospector Mountain Suite, a medium to fine grained, partly porphyritic, quartz-bearing monzonite dated at 68.2 Ma (Tempelman-Kluit, 1971; biotite K/Ar). The rock is massive and generally weathers to form broad ridges of coarse felsenmeer. Phenocrysts are of K-feldspar and lesser biotite. Finer grained peripheral bodies and dikes have a similar composition and commonly more porphyritic texture; dikes cut both the intrusion and the andesites. Near the southwest corner of Prospector Mountain is a zone of medium to coarse grained, leucocratic guartz-rich guartz monzonite. It generally shows moderate to strong quartz-sericite alteration and contains very abundant guartz veinlets and veins. Although this rock



is texturally similar to quartz monzonite of the Dawson Range Suite, it appears to intrude and alter the andesites, indicating that it is younger, and probably a phase of the Prospector Mountain Suite.

To the south, andesites are overlain unconformably(?) by basalt flows of the Carmacks Group. These dip gently to moderately to the south and southwest.

Many of the major valleys probably are occupied by late faults. The scarcity of outcrop except along ridge crests makes interpretation difficult of geology in the valleys.

Air photos taken in 1981 show a consistent pattern of north-northeast and northeast-trending linear sets. The northeast linear features have steep dips and long strike extents, and form major valleys and prominent saddles. The north-northeast linear features are shorter, and some are discontinuous over distances of less than 200 metres. The linear features commonly are splayed, and do not appear to offset each other. They occur in swarms, the most intense of which are on Centre Mountain, No.7 Hill, Promenade Ridge, and Discovery Ridge.

#### 2.2 **PROPERTY GEOLOGY** (See Figure 3)

The northern half of the property is underlain mainly by andesites of the Carmacks Group, dominated by flows with minor tuffs. To the west, these rocks are overlain by a coarse andesite breccia, which dips gently to moderately south to southwest.

Andesite flows contain phenocrysts of plagioclase (5-15%), clinopyroxene and/or amphibole (2-10%) and minor apatite in a groundmass rock in plagioclase with much less actinolite/chlorite and opaque/Ti-oxide. Some bedded pyroclastic rocks contain up to 3% disseminated magnetite.

Near the west edge of the property, andesites are altered and intruded by Prospector Mountain intrusions, dominated by a fine to medium grained, leucocratic quartz monzonite to monzonite stock, and a few monzonite dikes seen only on Leo's Ridge. The quartz monzonite commonly contains abundant quartz veins and veinlets, and is altered moderately to strongly to quartz-sericite.

The southern half of the property is underlain by basalt flows and basal breccias of the Carmacks Group. These dip gently in several directions, and overlie the andesites with a probably slight angular unconformity.

#### 3.0 ECONOMIC GEOLOGY

#### 3.1 PROSPECTOR MOUNTAIN REGION

In the Prospector Mountain region, sulfide-bearing veins are obvious only on ridges, where they form linear depressions containing patches of scattered oxidized and leached vein material interspersed with sheared and faulted country rocks.

6.



Alteration halos about veins vary from a few metres to a few tens of metres in width, and generally increase in proportion to the width of the vein. They are well fractured and have bleached, earthy colors caused by weak to strong argillic alteration. They are characterized by lack of vegetation, a smaller size of rock fragments in felsenmeer than in surrounding rocks (rarely over 5-10 cm), and manganese, hematite, and limonite staining on fracture surfaces. Further from the veins, wallrocks show weak propylitic alteration.

Vein material consists of transparent, chalcedonic, cockade, drusy or massive quartz, commonly rusty, vuggy, and pitted. Sulfides include galena (and secondary anglesite), chalcopyrite, sphalerite, and pyrite. Galena-rich boulders are up to 30 cm across. Minor minerals include secondary Cu-minerals (malachite and azurite), arsenopyrite, barite, fluorite, and witherite. A useful prospecting guide on ridge crests is a small yellow flower, identified by Tempelman-Kluit as Draba densifolia, a mustard, which blooms in June. Tourmaline occurs in veins as disseminated grains and massive clusters (headwaters of Frog Creek and at Apex Mountain), and in a quartztourmaline breccia zone (Centre Mountain). K-feldspar occurs with quartz in some veins. Minor native gold has been found by panning surface and trenched material from the No.7 vein, on the adjacent property to the east (Designated Property "C").

The highest grade assays of precious metals in rocks from the Lilypad Property are as follows (in oz/ton):

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AU		лу
surface	Ø.784 * (D: Newt Fault)	131.* (A: Reid Vein)
trenches	Ø.202 (C: Tr 7-1, Ø.3 m)	25.74 (C: Tr 7-1, Ø.2 m)
drilling	Ø.236 (C: DH 82-1, 3.Ø m)	5.40 (C: DH 82-2, 0.61 m)

λa

A, C, D: indicate Designated Property Code
* grab sample of massive and semi-massive sulfide

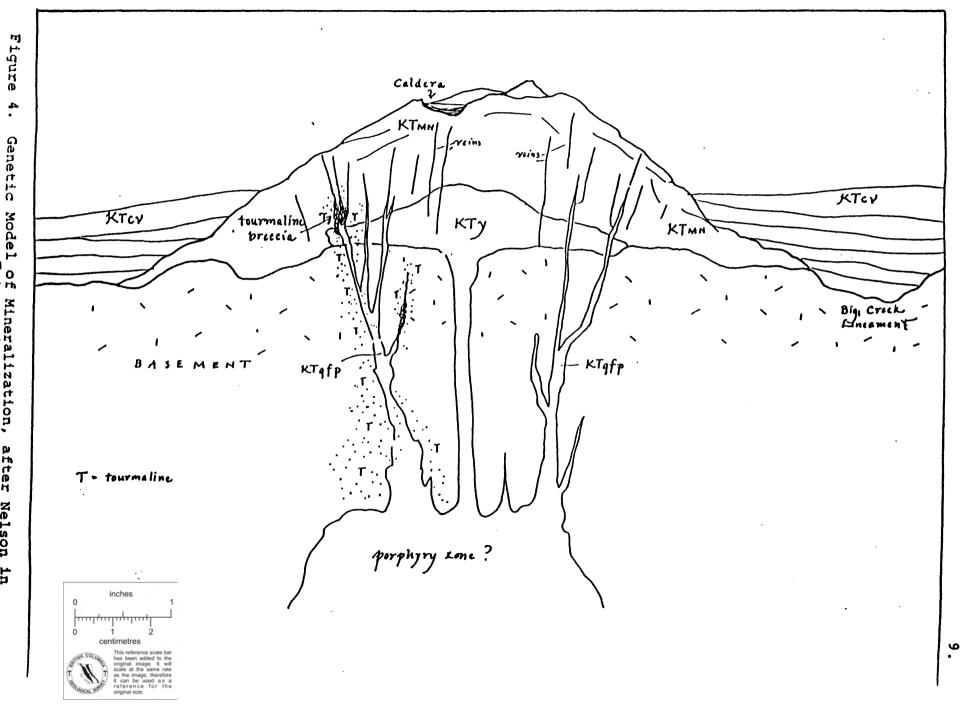
Regional metal zoning in Ag, Au, and Pb generally is erratic, with strong local variation, especially where absolute abundances are low. A few trends in mineral distribution indicate a heat source in the intrusive stock and lower temperature zones to the south and east. In one of these, guartz-tourmaline breccia zone on Centre Mountain contains minor galena, pyrite, chalcopyrite with very low precious metal values in guartz veins associated with the breccia. Further south is massive galena, chalcopyrite, and pyrite. On Leo's Ridge galena with minor tetrahedrite occurs in a gangue of barite.

Drilling results show vertical continuity of veins, with widths increasing slightly with depth. In drill cores, veins grade from fresh, massive wallrocks into highly fractured, weakly bleached wallrock cut by manganese and limonite-coated fractures to one or more subparallel bands of bleached gouge ranging from a few to 50 cm in width. Oxidized sulfides and quartz, carbonate, and/or barite forms pods and veins generally in or bordering gouge zones.

Veins were weathered and leached(?) to a depth of at least 150 metres below surface. Gouge zones are dominated by kaolinite and limonite, in part of supergene origin. Associated with these are secondary Pb-minerals with slight supergene enrichment of silver.

A genetic model was developed by Nelson (1982) (see Figure 4). The guartz-K-feldspar porphyry dikes and tourmaline-quartz breccia zones suggest a genetic link between veins, breccias, and dikes, and

8.



4. Genetic Model of Mineralization, after Eaton and Nelson, 1982. Nelson 5

the monzonite magma chamber below, in a model of an intermediate to felsic volcanic center, with possibly porphyry-style Cu-(Mo) mineralization at deeper levels.

### 3.2 PROPERTY

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Veins and linear features are well exposed on Centre Mountain, Leo's Ridge, and Terry Fox-Marathon Ridges. They occur mainly in andesites of the Carmacks Group, with a few in the overlying basalts along Leo's Ridge. The main Ag-Pb-Au veins on the property include the following:

Location	Veins

Centre Mountain	No.12,	N0.3Ø				
Leo's Ridge	No.32,	No.34,	NO.37,	NO.38,	No.39,	NO.40
Terry Fox Ridge	No.23,	NO.407,	NO.408	3, NO.46	39	

In 1981, veins were trenched and sampled by personnel of Archer Cathro Associates under the supervision of Doug Eaton, generally at 1-metre intervals along the length of the veins. Samples were analysed for Au, Ag, and Pb. The most significant values from the property are listed in Table 2.

Three holes were drilled on the property in 1982 as follows:

Hole	Veins Intersected	Depth	Location
LP 82-3	No.23, 407, 408 veins	(190.5 m)	Terry Fox Ridge
LP 82-4	No.38, 39 veins	(54.6 m)	Leo's Ridge
LP 82-4a	No.38, 39 veins	(81.7 m)	Leo's Ridge)

The best values from vein intersections are shown in Table 3.

Hole	interval (m)	t <b>hicknes</b> s (m)	Au (oz/t)	Ag(oz/t)	Pb(%)	Vein
82-3	42.1-42.5 42.5-42.8 44.7-45.3 Sample 2 *	Ø.4 Ø.3 Ø.6 1.0	0.018 0.038 0.115 0.028	1.40 10.9 0.59 8.26	0.24 1.53 0.20 2.14	407
	Sample 2 * Sample 3 * Sample 4 *	grab # 1.0	0.19 0.092	18.14 8.63	32.9Ø 5.42	
	180.5-181.1	0.6	0.003	0.30	Ø.26	23
82-4a	68.0-69.0 72.54-74.07 74.07-75.70	1.0 1.53 1.63	0.001 0.001 0.001	Ø.45 Ø.91 Ø.40	Ø.10 0.07 0.04	38/39 38/39 38/39

Table 3. Assay Values from Drill Holes

82-4 (no anomalous values)

* interval uncertain, between 27.0 and 48.0 m
# grab sample is of massive sulfide

Table Z.	Wardes		ILCHOLOU			
Location	Trench	No.	Width (m)	Au (oz/T)	Ag (oz/T)	Pb (%)
Centre	12-3	4	0.9	0.008	10.50	1.08
Centre	30-1 30-4	3 1	1.0 1.0	0.005 0.006	2.28 10.12	Ø.46 Ø.44
						·····
Leo's	32-2	2	grab #	0.030 0.000	8.60 0.44	21.00 35.00
	32-3	1 4	1.0 1.0	0.000	3.96	Ø.29
	32-4	2	1.0	0.008	2.72	2.34
		5	grab #	0.032	61.24	29.90
Leo's	34-1	1	grab #	0.032	24.96	
		2	grab #	0.012	24.26	56.90
Leo's	37-1	10	1.0	0.010	12.18	0.82
		11	1.1	0.010	2.52	0.43
		17	grab #	0.005	14.88	33.20
	37-2	2 3	Ø.4 Ø.2	0.000 0.006	8.34 33.64	4.06 73.90
	37-3	2	1.0	0.000	2.94	1.06
,		2 3	grab #	0.000	25.10	55.40
	37-4	1	grab #	0.024		36.80
	37-5	11	Ø.1	0.008	25.20	37.10
		12	1.0	0.004	2.84	2.20
Leo's	38-1	2	Ø.3	0.010	96.54	62.30
		3	1.0	0.010	10.60	2.50
		4	1.0	0.000	4.02	2.03
		5	Ø.3	0.008	14.94	2.84
		6	1.0	0.026	29.66	17.10
-		8	1.0	0.014	0.10	0.06
	38-3	2	1.0	0.106	6.74	0.14
		6	0.4	0.008	26.30	48.70
Leo's	40-1	3	grab #	0.022	70.06	63.90
Terry Fox	407-1	2	1.0	0.028	8.26	2.14
-		3	grab #	0.190	18.14	32.90
		4	1.0	0.092	8.63	5.42
	407-2	1	grab #	0.178	0.24	. 0.16
Terry Fox	408-4	2	2.0	0.016	2.18	0.74
·····		3	1.0	0.010	3.38	Ø.84

# Table 2. Assay Values from Trenches

Note: Samples in a given trench are taken across the vein at intervals of one to a few metres along the length of the vein.

# Grab samples are of massive to semi-massive sulfide.

"A guartz-tourmaline-cemented breccia zone at least 200 m in diameter occurs in andesite near the top of Centre Mountain. The breccia body is cut by numerous 1 to 2 m wide porphyritic dikes, and may be evidence for an explosive, degassing event which directly preceded emplacement of the dikes." (Eaton, 1984)

### 4.0 GEOCHEMISTRY

#### 4.1 LILYPAD PROJECT

In 1983, soil samples were collected from the property by Charles Greig under the supervision of Doug Eaton, as part of the Lilypad program, in which about 8500 samples were collected in a grid. Geochemical anomalies were defined as **intense** for the upper 2% of values, and **moderate** for values between 5% and 2% of the top. These numbers are shown in Table 4.

Table 4. Anomaly Levels in Soil Geochemistry (Lilypad Project)

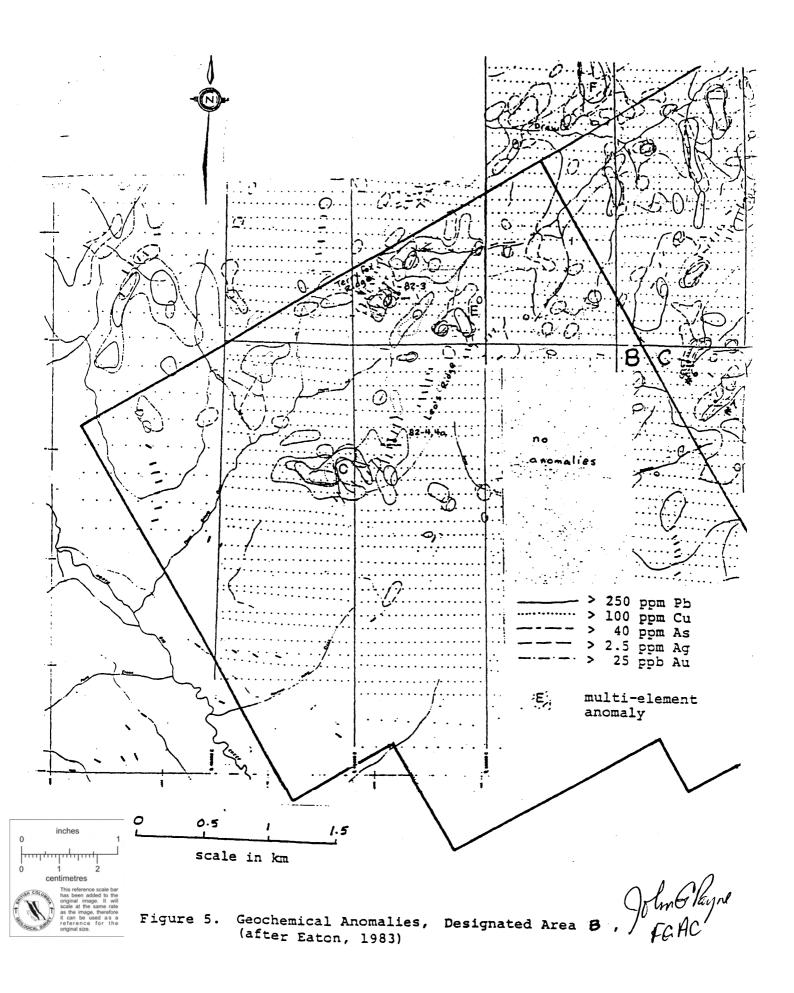
	moderate (2-5%)	intense (2%)
Au	25 ppb	50 ppb
Ag	2.5 ppm	5 ppm
Pb	250 ppm	500 ppm
Cu	100 ppm	150 ppm
As	40 ppm	80 ppm

Mean values and anomaly thresholds are somewhat higher in the Prospector Mountain properties than is common in the Dawson Range, and indicate the large extent of the hydrothermal system being explored. The most intense multi-element anomalies are associated with structures where sulfides have been discovered by prospecting. Distributions of lead and silver are closely related to veins, and anomalous values common have a north to northeast trend parallel to the strike of known veins. Gold is erratically distributed, with single point anomalies common. Copper values tend to follow the hornfelsed contact of the volcanic rocks and the monzonite.

#### 4.2 PROPERTY

A few multi-element geochemical anomalies are present, mainly associated with known vein and vein swarms (see Figure 5). A main anomaly (Anomaly C) is on the ridge crest and western slope of Leo's Ridge southwest of DDH 82-4, and is associated with veins 34, 37, and 40. A second main anomaly (Anomaly E) occurs on the northwest side of Centre Mountain, possibly associated with Vein 12 and probably associated with an undiscovered vein in or near Wishbone Pup Creek. A few smaller anomalies occur on Terry Fox Ridge associated with Veins 23, 407, 408, and 409.

Broad, lower-intensity anomalies occur on the ridge southwest and west of Terry Fox Ridge and to a minor extent on Alaskite Ridge in andesite of the Carmacks Group. In the latter occurrence, the andesite is altered by and underlain by quartz monzonite and monzonite of the Prospector Mountain intrusions. One sample in this region gave 0.089 oz/ton gold and 240 ppm arstalic.



#### 5.9 CONCLUSIONS

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1. A volcanic-intrusive center was developed about 70 Ma. (Carmacks Group or Mount Nansen Group). It included formation of a mainly andesitic volcanic pile, and intrusion of the pile by a monzonite to locally quartz monzonite stock and related porphyritic dikes. This was closely followed by extrusion of basalt flows of the Carmacks Group.

2. Further hydrothermal activity produced quartz-tourmaline breccia zones and a series of veins, mainly trending north to northeast. Veins show moderate to slight metal-zoning outwards from a heat source centered in the monzonite stock. Veins contain economically significant values in silver, gold, and lead.

3. Many of the linear features which may contain veins have not been tested by trenching or have been tested only in a limited amount.

4. An exploration program should test linear depressions which may contain veins, extensions of known veins, and regions of geochemical anomalies where no veins are known. Targets are veins containing values in Ag, Pb, and Au.

5. The program would most economically be done in conjunction with similar programs on adjacent claim blocks, as many of the costs could be shared between the programs.

#### 6.9 RECOMMENDATIONS

## Stage 1. (\$80,000)

the budget assumes that the program will be carried out in conjunction with similar projects on adjacent properties

- a) data compilation (\$ 2,000)
- b) improvement of road access from Big Creek to property area (\$ 30,000)
- c) geological and geochemical evaluation of the property. (\$ 3,000)
- d) 120 hours of bulldozer (D8) trenching of geochemical anomalous zones and other linear features showing significant alteration, which might contain veins; sampling and assaying of samples from veins.

(\$ 40,000)

e) logistics, camp, etc. (\$ 5,000)

#### Stage 2. (\$200,000)

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contingent on positive results from Stage 1.

a) bulldozer trenching along extensions of zones outlined in Stage 1, with follow-up sampling and geochemistry

(\$ 30,000)

(\$ 10,000)

b) diamond drilling of targets outlined by surface trenching to test for continuity at depth

(\$ 145,000)

c) geological supervision and evaluation (\$ 15,000)

d) logistics, camp, etc.

Stage 3. Further work would depend on positive results of Stages 1 and 2. Stage 3 probably would be dominated by diamond drilling.

Khn G.Payne, PhD April 1989

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## 7.9 REFERENCES

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- Payne, J.G., Gonzalez, R.A., Akhurst, K., Sisson, W.G., 1986. Geology of Colorado Creek (115-J/10), Selwyn River (115-J/9), and Prospector Mountain (115-I-5) Map Areas. Indian and Northern Affairs Canada, Northern Affairs: Yukon Region, Open File 1987-3.

#### CERTIFICATE OF ENGINEER

I, John G. Payne, do hereby certify that:

- 1. I graduated from Queen's University, Kingston, Ontario in 1961 with a B.Sc. degree in Geological Engineering.
- 2. I graduated from McMaster University, Hamilton, Ontario in 1966 with a PhD in Geochemistry.
- 3. I am a Fellow of the Geological Association of Canada.
- From 1967 to the present, I have been actively engaged as a geologist in mineral exploration in the North American Cordillera.
- 5. I have examined parts of Designated Area "B" Claim Group as part of a regional mapping program in 1986.
- 6. I have no present or future interest in Designated Area "B" Claim Group or in Yukon Spirit Mines, Ltd.
- 7. This report may be used in a prospectus or a Statement of Material Facts by Yukon Spirit Mines, Ltd.
- 8. I live at 877 Old Lillooet Road, North Vancouver, B.C., V7J 2H6;

Tel: 604- 986-2928.

John Glanne

John G. Payne / PhD April, 1989

GEOLOGICAL REPORT DESIGNATED PROPERTY "D" LILYPAD CLAIM GROUP PROSPECTOR MOUNTAIN AREA DAWSON RANGE YUKON TERRITORY

.

NTS 115 1/5

# 62°27'N, 137°50'W

A Silver-Gold-Lead Prospect

for

YUKON SPIRIT MINES, LTD., 401 - 595 Howe Street, Vancouver, B.C., V6C 2T5

by

JOHN G. PAYNE, PhD 877 Old Lillooet Road, North Vancouver, B.C., V7J 2H6

April 1989

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# GEOLOGICAL REPORT DESIGNATED PROPERTY "D" LILYPAD CLAIM GROUP PROSPECTOR MOUNTAIN AREA DAWSON RANGE YUKON TERRITORY

## NTS 115 1/5

62°27'N, 137°50'W

A Silver-Gold-Lead Prospect

#### **1.0** INTRODUCTION

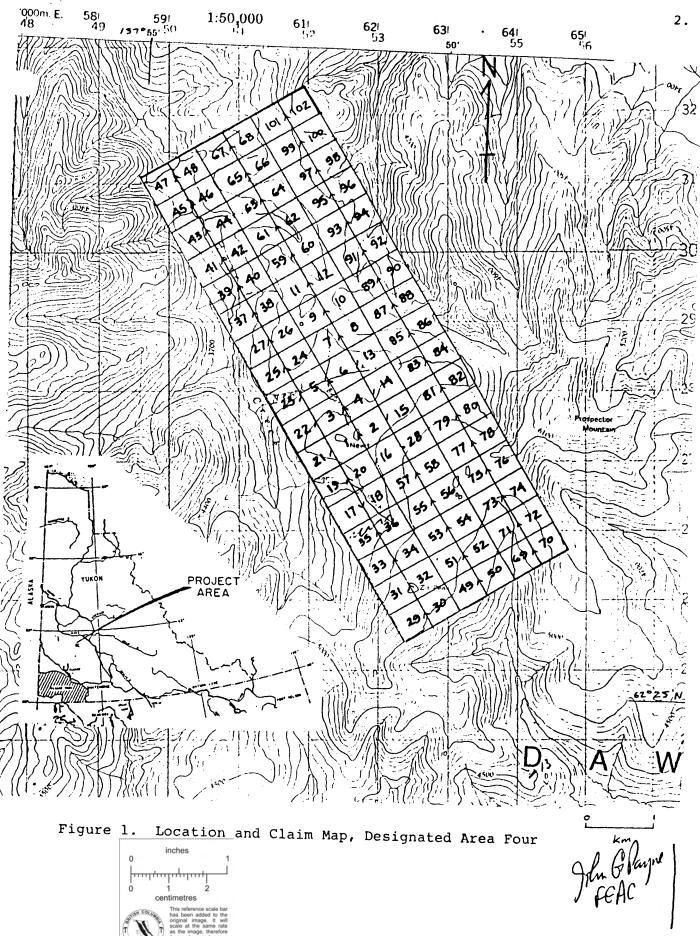
This report was written at the request of Charles Main of Archer, Cathro & Associates (1981) Limited, operator of the property. It is based on a review of data supplied by Archer, Cathro of their work during the period 1981-1984 on the property and surrounding claims, and on personal knowledge of the property acquired during a regional mapping program carried out by the author during 1986 (Payne, et al., 1986). The report discusses the economic geology of the property and outlines a preliminary exploration program.

## 1.1 LOCATION AND ACCESS

The property is on the east side of Hayes Creek near the summit of Prospector Mountain in the Dawson Range in central Yukon (Figure 1). Access is by 4-wheel-drive road from Carmacks to just west of the junction of Big Creek and Valerie Creek, about 11 km east of the property. This road could be continued to the property either along the ridge just north of Big Creek, a distance of about 18 km or along the Big Creek Lineament to Hayes Creek and then south along Hayes Creek, a distance of about 20 km. Road construction costs could be shared by exploration programs on adjacent properties on Prospector Mountain. On a ridge 5 km southwest of the property is a fixed-wing airstrip.

## **1.2** TOPOGRAPHY AND VEGETATION

Prospector Mountain has a relief of 920 metres above the surrounding valleys of Hayes and Big Creek. Slopes are moderate to locally steep on the south side, and steep on the north side. The region was not covered by continental ice sheets during the last glacial advance. Outcrops are confined mainly to ridgetops. At higher elevations, felsenmeer (outcrop weathered by frost action to produce disoriented blocks) is common. This grades downslope into patches of sparser rubble, talus, and solifluxion lobes. North-facing slopes below an elevation of about 1400 metres and broad valleys at all elevations are almost devoid of any indications of bedrock. Drainages are youthful, and exhibit dendritic, V-shaped valleys.



centimetres

Minor outwash debris from alpine glaciation and colluvium occurs up to elevations of 1050 metres along Big Creek. Eruption of Mount Natazat in the St. Elias Range about 1700 B.P. spread a layer of ash across this part of the Yukon; thickness vary up to several metres because of slopewash and fluvial dispersion. Permafrost is present throughout the region. On south-facing slopes, the active layer (depth of summer thaw) normally extends to 1 metre below surface. On well dried, south-facing slopes, vegetation commonly is grass and patches of aspen, poplar and willow trees. In valleys and moister slopes these blend into groves of white and black spruce.

On the property, elevation ranges between 1130 and 1850 metres. Above 1250-metre elevation, trees are replaced by slide alder, and above 1400 metres by typical alpine vegetation. North-facing slopes are characterized by permafrost covered by deep moss and peat and shallow-rooted spruce trees. Soil generally is less than 1 metre thick.

## 1.3 CLAIM STATUS

Table 1. Claim Status

Table 1 shows the claims and their status; their distribution is shown in Figure 1.

Claims	NO	, of Units	Tag Numbers	Expiry Date
Newt	1- 6	6	YA51157-YA51162	Feb. 14, 1991
	7- 20	14	YA51486-YA51499	Feb. 14, 1990
	21-102	82	YA51771-YA51852	Feb. 14, 1990
	156-163	8	YA61309-YA61316	Feb. 14, 1990

#### 1.4 PREVIOUS WORK

Exploration work between 1969 and 1980 in the Prospector Mountain region was for porphyry-type Cu-Mo deposits and Cu-Pb-Zn veins.

In 1969 and 1970, a few showings in the region were staked and explored for copper, mainly chalcopyrite and lesser bornite in quartz stringers and veins in both Yukon Group metasedimentary rocks and Carmacks Group volcanic rocks. On Prospector Mountain, minor chalcopyrite, galena, and sphalerite produced geochemical anomalies, and were staked as the Frog and PDY claim groups.

In 1979, Archer, Cathro staked the Lilypad claim group on the basis of geochemical silver anomalies coincident with lead anomalies. By 1980 a larger zone of anomalous silver, lead, gold, and arsenic values was outlined, and 27 mineralized veins were located along prominent topographic linear features.

In 1981 the property was enlarged and an integrated program of surveying, mapping, sampling, bulldozer trenching, and airstrip

construction was undertaken. Fifty additional veins were located. Trenching on north and west-facing slopes was hampered by permafrost. Veins were erratically mineralized.

In 1982 seven diamond drill holes totaling 637 metres explored beneath five of the most interesting showings. These established continuity of structures and sulfide mineralization to depth, and showed that the abundances of sulfides and precious metals vary widely.

In 1983 grid soil sampling over the central part of the Lilypad property outlined six primary targets based on coincident base- and precious-metal anomalies.

In 1984, further soil sampling provided greater detail in the target areas. An EM-16 survey tested conductivity of veins and their projections. No strong conductors were identified. Four diamond drill holes totaling 886.6 metres were drilled beneath vein zones with the highest and most consistent gold values.

Designated Property "D" is part of the Lilypad-Newt claim group.

## 2.9 GEOLOGY

## 2.1 REGIONAL GEOLOGY (See Figure 2)

To the north and locally to the south of Prospector Mountain are regions underlain by deformed schists and gneisses of the Yukon Metamorphic Complex. In the Prospector Mountain region, rocks of the metamorphic complex are dominated by metamorphosed felsic volcanic rocks, mainly of tuffaceous origin. On the northwest side of Prospector Mountain, these rocks are intruded and migmatized along the border of a pluton of hornblende potassic quartz diorite of the Dawson Range Suite, dated at 110-100 Ma.

Prospector Mountain is underlain mainly by andesitic volcanic and minor sedimentary rocks which have been dated at 60 to 70 Ma, and classified by Archer Cathro geologists as belonging to the Mount Nansen Group. They were classified by Payne, et al. (1986) as being a lower member of the Carmacks Group, mainly because at that time, the Mount Nansen Group was considered to have an age about 100 Ma. (Carlson, G., pers.comm.).

The volcanic rocks were intruded by a large stock of the Prospector Mountain Suite, a medium to fine grained, partly porphyritic, quartz-bearing monzonite dated at 68.2 Ma (Tempelman-Kluit, 1971; biotite K/Ar). The rock is massive and generally weathers to form broad ridges of coarse felsenmeer. Phenocrysts are of K-feldspar and lesser biotite. Finer grained peripheral bodies and dikes have a similar composition and commonly more porphyritic texture; dikes cut both the intrusion and the andesites. Near the southwest corner of Prospector Mountain is a zone of medium to coarse grained, leucocratic quartz-rich quartz monzonite. It generally shows moderate to strong quartz-sericite alteration and contains very abundant quartz veinlets and veins. Although this rock

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is texturally similar to quartz monzonite of the Dawson Range Suite, it appears to intrude and alter the andesites, indicating that it is younger, and probably a phase of the Prospector Mountain Suite.

To the south, andesites are overlain unconformably(?) by basalt flows of the Carmacks Group. These dip gently to moderately to the south and southwest.

Many of the major valleys probably are occupied by late faults. The scarcity of outcrop except along ridge crests makes interpretation difficult of geology in the valleys.

Air photos taken in 1981 show a consistent pattern of north-northeast and northeast-trending linear sets. The northeast linear features have steep dips and long strike extents, and form major valleys and prominent saddles. The north-northeast linear features are shorter, and some are discontinuous over distances of less than 200 metres. The linear features commonly are splayed, and do not appear to offset each other. They occur in swarms, the most intense of which are on Centre Mountain, No.7 Hill, Promenade Ridge, and Discovery Ridge, all west of Designated Property Four.

## 2.2 PROPERTY GEOLOGY (See Figure 3)

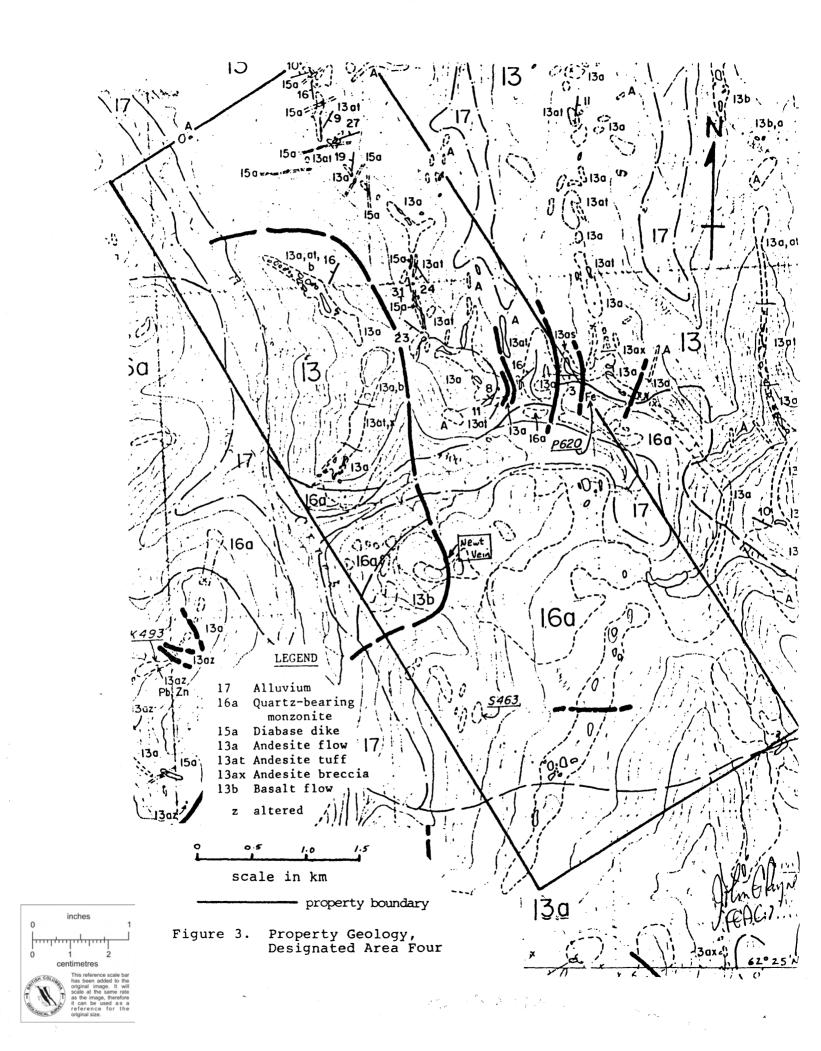
The northern half of the property is underlain by andesites of the Carmacks Group, dominated by flows with lesser tuffs, breccias, and argillite intervals. To the west, possibly in a downfaulted block, basalt flows are interbedded with andesite flows, tuffs, and breccias. Rocks dip gently in numerous directions, with the dominant dips to the west and northwest. Several diabase dikes cut the main northern ridge; these are at a variety of strikes, and most dip steeply; they may be feeders for overlying basalts of the Carmacks Group, since removed by uplift and erosion.

Andesite flows contain phenocrysts of plagioclase (5-15%), clinopyroxene and/or amphibole (2-10%) and minor apatite in a groundmass rock in plagioclase with much less actinolite/chlorite and opaque/Ti-oxide. Some bedded pyroclastic rocks contain up to 3% disseminated magnetite. Basalt flows contain phenocrysts of pyroxene (5-15%) and lesser, commonly inconspicuous ones of plagioclase.

The southern half of the property is underlain mainly by the Prospector Mountain intrusions, dominated by a fine to medium grained, leucocratic quartz-bearing monzonite to monzonite stock. A few monzonite dikes extend from the pluton into the andesites to the north. The monzonite appears to be a shallow-seated intrusion into the andesites. Warping of bedding in andesites may be related to faulting accompanying emplacement of the pluton.

The southern edge of the property is underlain by andesite flows and flow breccias, locally with tuffaceous interlayers showing gently dipping bedding planes.

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## 3.0 ECONOMIC GEOLOGY

#### 3.1 PROSPECTOR MOUNTAIN REGION

In the Prospector Mountain region, sulfide-bearing veins are obvious only on ridges, where they form linear depressions containing patches of scattered oxidized and leached vein material interspersed with sheared and faulted country rocks. Alteration halos about veins vary from a few metres to a few tens of metres in width, and generally increase in proportion to the width of the vein. They are well fractured and have bleached, earthy colors caused by weak to strong argillic alteration. They are characterized by lack of vegetation, a smaller size of rock fragments in felsenmeer than in surrounding rocks (rarely over 5-10 cm), and manganese, hematite, and limonite staining on fracture surfaces. Further from the veins, wallrocks show weak propylitic alteration.

Vein material consists of transparent, chalcedonic, cockade, drusy or massive quartz, commonly rusty, vuggy, and pitted. Sulfides include galena (and secondary anglesite), chalcopyrite, sphalerite, and pyrite. Galena-rich boulders are up to 30 cm across. Minor minerals include secondary Cu-minerals (malachite and azurite), arsenopyrite, barite, fluorite, and witherite. A useful prospecting guide on ridge crests is a small yellow flower, identified by Tempelman-Kluit as Draba densifolia, a mustard, which blooms in June. Tourmaline occurs in veins as disseminated grains and massive clusters (headwaters of Frog Creek and at Apex Mountain), and in a quartztourmaline breccia zone (Centre Mountain). K-feldspar occurs with quartz in some veins. Minor native gold has been found by panning surface and trenched material from the No.7 vein, west of the property.

The highest grade assays of precious metals in rocks from the Lilypad Property are as follows (in oz/ton):

surface	Ø.784 * (D: Newt Fault)	131.* (A: Reid Vein)
trenches	Ø.202 (C: Tr 7-1, Ø.3 m)	25.74 (C: Tr 7-1, Ø.2 m)
drilling	Ø.236 (C: DH 82-1, 3.Ø m)	5.40 (C: DH 82-2, 0.61 m)

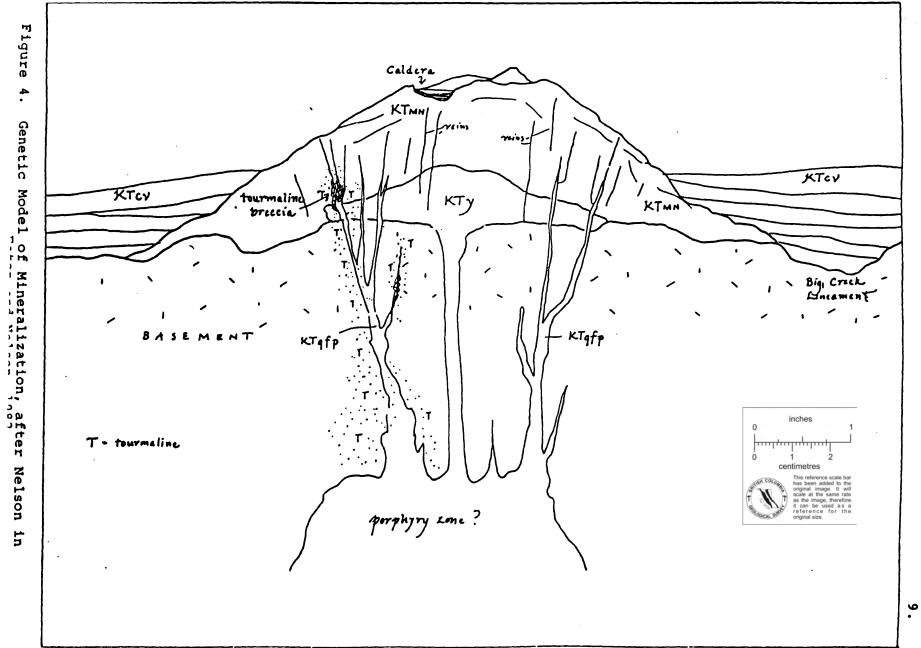
ÞΑ

A, C, D: indicate Designated Property Code
* grab sample of massive and semi-massive sulfide

Au

Regional metal zoning in Ag, Au, and Pb generally is erratic, with strong local variation, especially where absolute abundances are low. A few trends in mineral distribution indicate a heat source in the intrusive stock and lower temperature zones to the south and east. In one of these, guartz-tourmaline breccia zone on Centre Mountain contains minor galena, pyrite, chalcopyrite with very low precious metal values in guartz veins associated with the breccia. Further south is massive galena, chalcopyrite, and pyrite. On Leo's Ridge galena with minor tetrahedrite occurs in a gangue of barite.

Drilling results show vertical continuity of veins, with widths increasing slightly with depth. In drill cores, veins grade from fresh, massive wallrocks into highly fractured, weakly bleached wallrock cut by manganese and limonite-coated fractures to one or more subparallel bands of bleached gouge ranging from a few to 50 cm in width. Oxidized sulfides and quartz, carbonate, and/or barite forms pods and veins generally in or bordering gouge zones.



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4.

Genetic

Nelson

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Veins were weathered and leached(?) to a depth of at least 150 metres below surface. Gouge zones are dominated by kaolinite and limonite, in part of supergene origin. Associated with these are secondary Pb-minerals with slight supergene enrichment of silver.

A genetic model was developed by Nelson (1982) (see Figure 4). The quartz-K-feldspar porphyry dikes and tourmaline-quartz breccia zones suggest a genetic link between veins, breccias, and dikes, and the monzonite magma chamber below, in a model of an intermediate to felsic volcanic center, with possibly porphyry-style Cu-(Mo) mineralization at deeper levels.

## 3.2 PROPERTY

Veins and linear features are well exposed in and near Newt Saddle in both andesite to the west and monzonite to the east. The main Ag-Pb-Au veins on the property include the following: Newt Fault, (unnamed vein zone), Vein 44, Vein 50, and Vein 51. In 1981, grab samples of veins were collected by personnel of Archer Cathro & Associates under the supervision of Doug Eaton, and analysed for Au, Ag, and Pb. The most significant values are listed in Table 2.

#### Table 2. Assay Values from Veins

Vein	NO.	Width (m)	Au (oz/T)	Ag (oz/T)	Pb (%)
	_	• "			
44	1	grab #	0.017	10.78	20.3
	2	grab #	0.058	30.58	53.8
	3	grab #	0.106	12.64	13.8
Newt Fault	1	grab #	0.784 *	77.52	42.4
	2	soil pit	0.060	123.	27.4
		(in altere	a vein)		

# grab samples are of massive and semi-massive sulfides

* This is the highest gold assay from the Prospector Mountain Area

#### 4.0 GEOCHEMISTRY

#### 4.1 LILYPAD PROJECT

In 1983, soil samples were collected from the property by Charles Greig under the supervision of Doug Eaton, as part of the Lilypad program, in which about 8500 samples were collected in a grid. Geochemical anomalies were defined as **intense** for the upper 2% of values, and **moderate** for values between 5% and 2% of the top. These numbers are shown in Table 3.

Table 3. Anomaly Levels in Soil Geochemistry (Lilypad Project)

	moderate (2-5%)	intense (2%)
Au	25 ppb	5Ø ppb
Ag	2.5 ppm	5 ppm
Pb	250 ppm	500 ppm
Cu	100 ppm	150 ppm
As	40 ppm	80 ppm

Mean values and anomaly thresholds are somewhat higher in the Prospector Mountain properties than is common in the Dawson Range, and indicate the large extent of the hydrothermal system being explored. The most intense multi-element anomalies are associated with structures where sulfides have been discovered by prospecting. Distributions of lead and silver are closely related to veins, and anomalous values common have a north to northeast trend parallel to the strike of known veins. Gold is erratically distributed, with single point anomalies common. Copper values tend to follow the hornfelsed contact of the volcanic rocks and the monzonite.

#### 4.2 PROPERTY

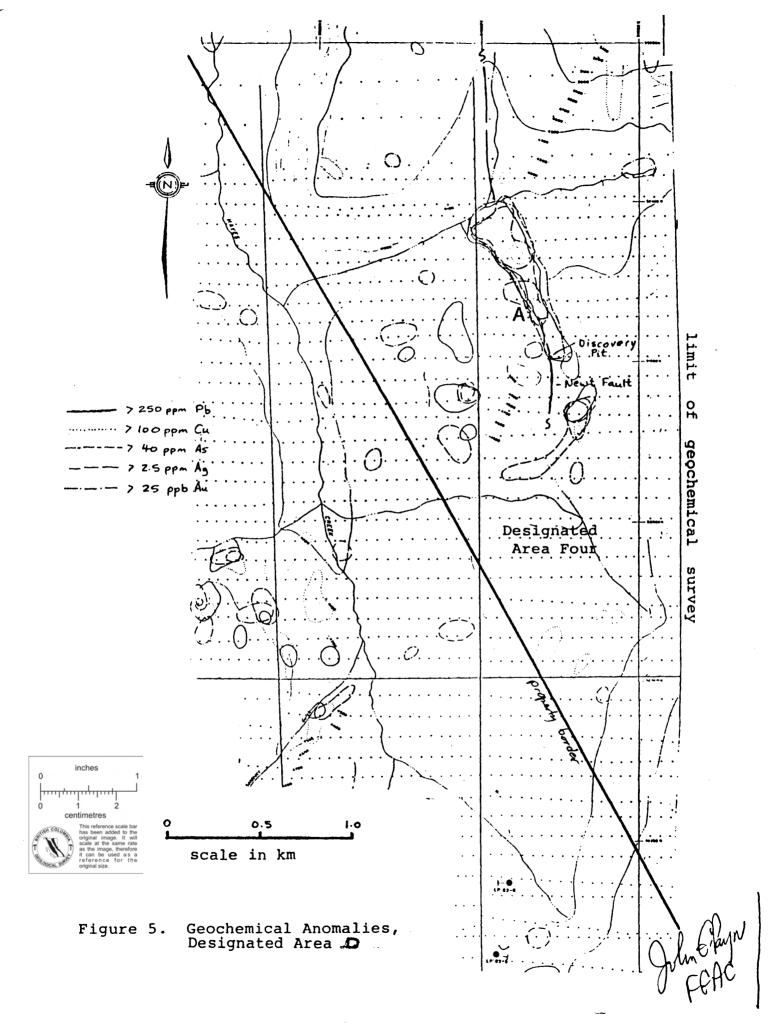
Only a small percentage of the geochemical samples were taken from Designated Area "D".

A large multi-element geochemical anomaly (Anomaly A) coincides with and extends downslope to the north from the main vein zone in Newt Saddle (see Figure 5). The highest gold value in the region, 2690 ppb) was returned from a sample taken near the head of Anomaly A.

A second, much smaller anomaly occurs 200 metres to the south and is offset slightly to the east in a zone of no outcrop. Minor follow-up work failed to discover mineralization to explain the extent and intensity of the anomalies, but did locate evidence of brecciation and alteration. Maximum values in soils are as follows:

Au	2690	ppb
Ag	20	ppm
Pb	2190	ppm
As	595	ppm
Cu	127	ppm

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# 5.0 CONCLUSIONS

1. A volcanic-intrusive center was developed about 70 Ma. (Carmacks Group or Mount Nansen Group). It included formation of a mainly andesitic volcanic pile, and intrusion of the pile by a monzonite to locally guartz monzonite stock and related porphyritic dikes. This was closely followed by extrusion of basalt flows of the Carmacks Group.

2. Further hydrothermal activity produced guartz-tourmaline breccia zones and a series of veins, mainly trending north to northeast. Veins show moderate to slight metal-zoning outwards from a heat source centered in the monzonite stock. Veins contain economically significant values in silver, gold, and lead.

3. Many of the linear features which may contain veins have not been tested by trenching or have been tested only in a limited amount.

4. An exploration program should test linear depressions which may contain veins, extensions of known veins, and regions of geochemical anomalies where no veins are known. Targets are veins containing values in Ag, Pb, and Au. The geochemical survey should be extended to cover the rest of the property.

5. This property has not been tested as extensively as those to the west; the high gold value along Newt Fault is particularly encouraging. Archer Cathro geologists explained that it was not followed up during the previous exploration program because it was found late in the season, and the client had other properties of more interest.

6. The program would most economically be done in conjunction with similar programs on adjacent claim blocks, as many of the costs could be shared between the programs.

## . 6.Ø RECOMMENDATIONS

# Stage 1. (\$20,000)

the budget assumes that the program will be carried out in conjunction with similar projects on adjacent properties

a)	data compilation	(\$ 2,000)
b)	improvement of road access from Big Creek to property area	(\$ 5,000)
c)	geological and geochemical evaluation of the property.	(\$ 10,000)
e)	logistics, camp, etc.	(\$ 3,000)

# Stage 2. (\$ 80,000)

contingent on positive results from Stage 1.

a)	150 hours of bulldozer trenching of geochemic anomalous zones and other linear features sho alteration, which might contain veins; sampli	owin	ng significant
	of samples.	(\$	50,000)
b)	improvement of access road to property area	(\$	20,000)

c)	geological	supervision	and evaluation	(\$	5,000)
d)	logistics,	camp, etc.		(\$	5,000)

Stage 3. Further work would depend on positive results of Stages 1 and 2. Stage 3 probably would be dominated by diamond drilling of targets outlined in Stage 2.

Jøhn G.Payne, PhD April 1989

## 7.9 REFBRENCES

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## CERTIFICATE OF ENGINEER

- I, John G. Payne, do hereby certify that:
- 1. I graduated from Queen's University, Kingston, Ontario in 1961 with a B.Sc. degree in Geological Engineering.
- 2. I graduated from McMaster University, Hamilton, Ontario in 1966 with a PhD in Geochemistry.
- 3. I am a Fellow of the Geological Association of Canada.
- 4. From 1967 to the present, I have been actively engaged as a geologist in mineral exploration in the North American Cordillera.
- 5. I have examined parts of Designated Area "D" Claim Group as part of a regional mapping program in 1986.
- 6. I have no present or future interest in Designated Area "D" Claim Group or in Yukon Spirit Mines, Ltd.
- 7. This report may be used in a prospectus or a Statement of Material Facts by Yukon Spirit Mines, Ltd.
- 8. I live at 877 Old Lillooet Road, North Vancouver, B.C., V7J 2H6;

Tel: 604- 986-2928.

John G. Payne, PhD April, 1989

CERTIFICATE

The foregoing constitutes full, true and plain disclosure of all material facts relating to the securities offered by this Prospectus as required by the Securities Act and its regulations.

DATED at Vancouver, British Columbia, this <u>14th</u> day of <u>September</u>, 1989.

OWEN DOUGLAS RICHMAN

Chief Executive Officer

CARL WOLFGANG SCHEPANNEK Director

OWEN DOUGLAS RICHMAN Chief Financial Officer

JAMES DAVID BONNER

Director

PROMOTER

An

OWEN DOUGLAS RICHMAN

# CERTIFICATE OF THE AGENT

To the best of our knowledge, information and belief, the foregoing constitutes full, true and plain disclosure of all material facts relating to the securities offered by this Prospectus, as required by the Securities Act and its regulations.

DATED at Vancouver, British Columbia, this <u>14th</u> day of <u>September</u>, 1989.

GEORGIA PACIFIC SECURITIES CORPORATION

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