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**Geochemical Report on the  
KIT 3-14 Claims  
(YC07107-07118)**

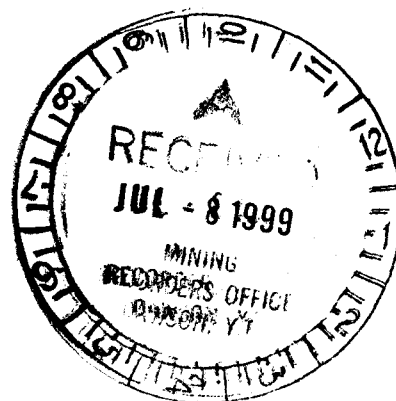
093 999

**NTS 115O/3 and 115J/14  
Latitude 63° 03' N  
Longitude 139° 14' W**

**Dawson Mining District  
Yukon Territory**

**Prepared for Farrell Andersen by  
Prospex Geological Enterprises**

**submitted July 7, 1999**



This report has been examined by  
the Geological Evaluation Unit  
under Section 53 (4) Yukon Quartz  
Mining Act and is allowed as  
representation work in the amount  
of \$ 4066.00.

*M. Burt*  
for Regional Manager, Exploration and  
Geological Services for Commissioner  
of Yukon Territory.

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## Introduction

An evaluation for a source of the placer gold recovered from the streams draining Thistle Mountain was initiated by Sparkling Minerals Incorporated in 1990. Placer gold morphology and creek economics indicate a proximal origin in Ballarat Creek for the alluvial gold. Gold assays nearing 1 ounce per ton in quartz vein float were located in Ballarat Creek and vein float carrying 0.8 grams gold was located on the east flanks of Thistle Mountain. More vein float from Ballarat Creek was sampled in 1996 and assayed above detection limit (>7000ppb) using 30 gram fire-assay and atomic absorption technique. In 1991 detailed geochemical prospecting and regional mapping targeted two types of quartz veining. Trenches were excavated on both types of veining in 1993 but were never geologically mapped or sampled.

The KIT claims were staked to encompass the vein float and anomalous soil values taken by Sparkling Minerals Incorporated on a 1km x 1km grid in 1991. The claims also cover the strike extension of felsic dikes cut by Fe-oxide rich, vuggy quartz veining. A 75-metre wide section of these dikes was exposed in Ballarat Creek by placer miners in 1991.

Reinterpretation of the 1991 report identifies the host rock covering the property as early to mid-Paleozoic Nisutlin Assemblage. Felsic meta-granite, possibly Mississippian age, also occurs on the west half of the property.

A total of 5 days were spent on the property from July 2 to July 6, 1998. Traverses made along the central claim line identified new soil anomalies and confirmed 1991 soil-grid values. Soil samples were analyzed at Chemex Laboratories in Vancouver for gold by 30-gram fire assay and other elements by ICP at -150 mesh screen size.

## Location, Access and Topography

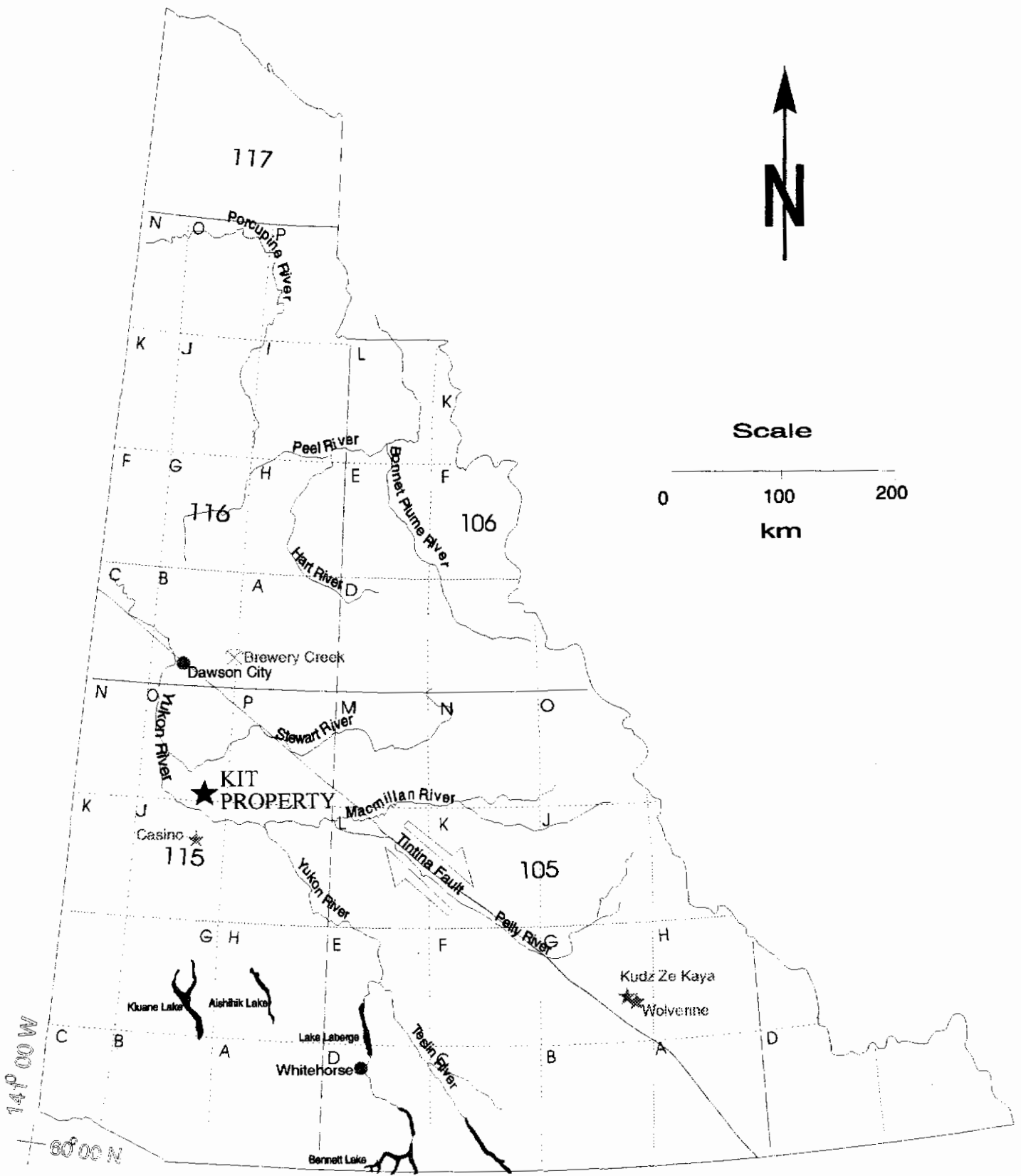
The 14 KIT claims are located 120 kilometres south of Dawson City at latitude 63° 00' and longitude 139° 06' W. (Figure 1). Access to the property is via the Yukon River during summer and tote-road onto the property during winter. Airstrips located at Ballarat Creek and Thistle Creek can be used during either season. Within the region 4WD roads connect the creeks and provide access onto the property and into adjacent prospective areas.

The property covers part of the unglaciated Klondike Plateau, a peneplain uplifted in the Tertiary period and incised by streams into v-shaped valleys with interconnecting ridges. Elevation ranges from 890 metres at valley bottom to 1503 metres at the peak of Thistle Mountain. Tree-line is at approximately 1219 metres. Due to prolonged and deep weathering of bedrock, outcrop exposure is most easily found on the ridges above tree-line and in canyons within the valleys. The area escaped the last two glaciations and the placer gold gravels are of local origin.

The KIT claims are staked over gold in soil anomalies outlined by the 1991 Sparkling Minerals program. Soil development varies on the property and continuous, well-developed soil horizons are difficult to find. North and west facing slopes contain thick, frozen layers of moss and decomposed organic material. South and east facing slopes have a veneer of rocky soil and fine loess overtop large blocky talus.

The climate is characterised by low precipitation and a wide temperature range. Winters are cold, and temperatures of -30°C to -40°C are common. Summers are moderately cool to hot, with daily highs of 10°C to 25°C. The property is snow free from late May to the end of September, and the creeks keep flowing from May until October.

Figure 1: Location Map of the KIT Property



## Property Information

The KIT property is located in the Dawson Mining District of the Yukon Territory. The property consists of 14 full size claims staked in May 1998 according to the Yukon Quartz Mining Act (Figure 2). The claims are shown on Yukon Quartz mapsheet 115P/14 and 115O/3. Claim data is shown in table 1 and post locations are given in table 2.

Table 1: List of Claims

Claim Name	Grant Numbers	Date of Record	New date for renewal*
KIT 3-6	YC07107-07110	01-May-1998	01-May-2001
KIT7-10	YC07111-07114	01-May-1998	01-May-2002
KIT 11-14	YC07115-07118	01-May-1998	01-May-2001

\*contingent on acceptance of this report

Table 2: Claim Post Locations-UTM Zone 7V

Easting	Northing	Post One	Post Two
595121	6986224	none	KIT 3/4
595454	6986502	KIT 3/4	KIT 5/6
595891	6986687	KIT 5/6	KIT 7/8
596261*	6986862*	KIT 7/8*	
596603	6987177	KIT 11/12	KIT 9/10
597004	6987340	KIT 13/14	KIT 11/12
597360**	6987630**	KIT 15/16**	KIT 13/14**

\*posts 1 KIT 9 & 10 also

\*\*approximate location

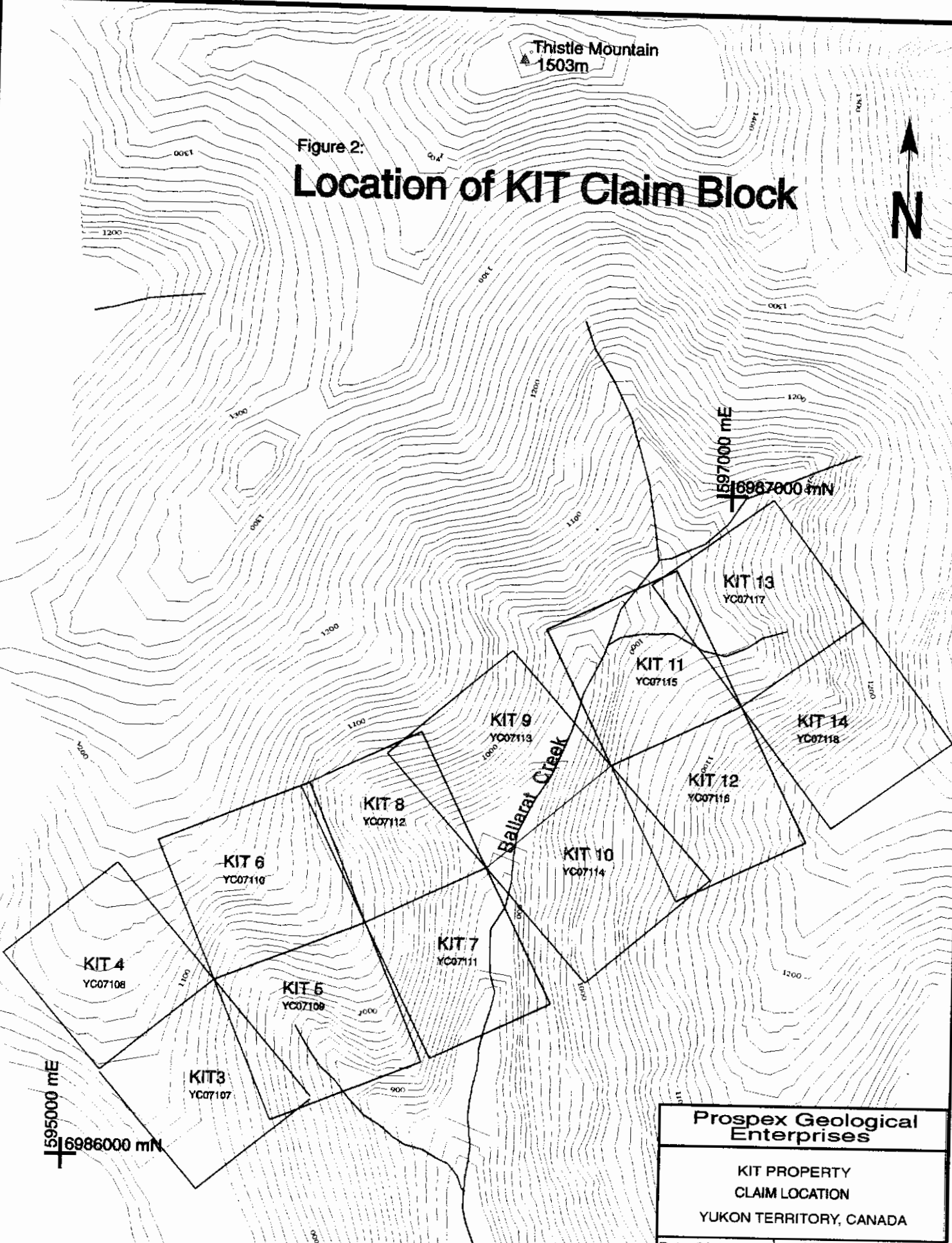
The claims are registered with the Dawson Mining Recorder and are 100% owned by Farrell Andersen.

## Previous Exploration

Placer mining has been documented around Thistle Mountain since 1898 (Bostock, 1957). A hydraulic concession for Ballarat Creek was granted in 1901. The discovery claim on the creek is located approximately 2km south of the KIT property and archives show only 6 claims immediately above discovery were mined, suggesting a proximal source for the gold. Mining was intermittent from 1957 until 1981 when rich gravels were exposed downstream Ballarat Creek. Ballarat and other creeks in the vicinity have been continuously mined since then (1982 to 1999).

Thistle Mountain  
1503m

Figure 2:  
**Location of KIT Claim Block**



<b>Prospex Geological Enterprises</b>	
KIT PROPERTY CLAIM LOCATION YUKON TERRITORY, CANADA	
Date: 04-Jul-99	NTS: 1150/3 115J/14
File: clm_map.CDR	Author: FJA Figure 2

Hard rock exploration was limited to isolated claims staked intermittently since 1901. Most claims were staked on ground believed to host the Black Fox showing, a 0.9 metre wide quartz vein that was worked at the turn of the century. Exposed in 1915, the vein contains chalcopyrite, galena and pyrite (Cairnes, 1917). The vein location is well described but the vein and subsequent workings have not been located.

In 1990, Sparkling Minerals embarked on a land acquisition program hoping to locate a potential source for the alluvial gold in the region. Regional mapping, prospecting, and contour and grid soil sampling were carried out in 1991. Over 100 rock samples and 400 soil samples were collected in 1990 and 1991. Some trenching was done on the property by Sparkling Minerals in 1993 to satisfy assessment work, but no report was filed.

Interest in the region was shown when Faith Mines Ltd. staked 164 claims adjacent to and surrounding the north half of Sparkling Minerals property. Faith Mines did a magnetometer survey and dropped the claims in 1995. In 1997 the last quartz claims of Sparkling Minerals expired.

## **1998 Work Program**

Access to the property was provided by Bonanza Aviation from Dawson City to Ballarat Creek airstrip, and from there by two-wheel drive truck to a base camp. The field crew consisted of assistants Jack Andersen, Charlie Dog and geologist Farrell Andersen. Five days were spent exploring the property and 37 soil samples and 5 stream samples were collected.

Work included sampling along the central claim line in conjunction with tagging of claim posts, re-establishing stations on the 1991 soil grid, examining previous sample sites for quality of sample, and taking bulk stream samples from the major tributaries of Ballarat Creek. Soil sample spacings varied from 50 to 200 metres depending on availability of soil. Sample locations were tied into claim posts and claim posts were located on the ground using a hand-held Global Positioning System (GPS) receiver. The stream samples were analysed by a third-party and are not included in the statement of expenditures applied to the property.

## **Geology**

The KIT claims lie southwest of the Tintina Trench within the Yukon Tanana Terrane. The geology has not been mapped since Bostock came through with pack horses in the mid 1930's (GSC Map 711A, published 1942). The best reference for geology in the area is the tectonic assemblage map of the Cordillera (Wheeler et al, 1991). A regional linear visible on Land-Sat and air photos is located 25 kilometres north of the property. This linear parallels the Tintina Trench and may be an extension of south-east structures (Teslin Fault Zone or Big Creek fault).

The major rock assemblage underlying the KIT claims can be correlated to the Nisutlin Subterrane (Gabrielse and Yorath, 1992). It is a package of interbedded mica-rich quartzofeldspathic schists, gneiss and minor marble intruded by thick metagabbro and mafic metavolcanic sills. Outcrops of felsic quartzofeldspathic schists and gneiss of the Devonian Mink Creek Suite are found less than one kilometre south of the property. A distinct linear seen on air photos may relate to this contact. Three kilometres north of the property is another interpreted contact where the Nisutlin Subterrane is thrust onto a package of silicious and carbonaceous Proterozoic to Cambrian sediments collectively referred to as the Nisling Terrane. This contact is likely responsible for the drainage patterns of Thistle Creek and its north flowing tributaries.

The Nisutlin Assemblage is interpreted to be a pericratonic off-shelf basin, correlating to the larger Kootenay Terrane in southeast BC. Around the property, the Nisutlin Assemblage, or allochthon, represents a thrust



portion of a larger rift related basin, possibly correlative to the Grass Lakes region (NTS 105G/7). The Nisutlin Assemblage of meta-gabbro, hornblende gneiss, quartz mica schist and calcareous biotite-garnet schists on the property resemble units 2 and 1 of Murphy and Hunt in the Fyre Lake region (Hunt and Murphy, 1998). Included with the mafic volcanic package on Thistle Mountain is a sericite-muscovite-feldspar schist. The parent of this unit may have been a rhyolite or tuff. Float of this rock is found on the south flanks of Thistle Mountain.

The felsic schist/gneiss, referred to as the Pelly Gneiss in older nomenclature, is commonly present throughout the YTT, and around the property it may have been thrust onto the Nisutlin or have intruded the Nisutlin. Both scenarios could happen before or after the thrusting event placing the Nisutlin panel atop the Nisling. Both the Nisutlin and Mink Creek Suite are strongly deformed. Metamorphic grade in the Nisutlin is undivided amphibolite facies. On the property foliation trends 060 with moderate to steep south east dips and prominent joint orientation is 040/vertical.

The KIT claims are underlain by two-mica quartzite, phyllite and biotite-feldspar schist and gneiss, locally garnet bearing and calcareous. A foliated, sometimes augen, felsic granite is found as talus on the property and often contains quartz veins along joints and fractures. The meta-granite macroscopically looks different than the Pelly Gneiss and may be a Mississippian event as recorded in the Fyre Lake region. This talus is common on the west side of Ballarat Creek.

Faulting can be inferred to be partly responsible for the geologic complexity of the area. Numerous linears can be identified on air photos, and pingos are found in several valleys. No offsetting features or markers have been located yet.

Examples of post-accretionary intrusive activity mapped in the area consist of pyroxene-amphibole gabbro, felsic pegmatite and aplite dikes and sills, and a pale green silicious quartz-augite porphyry volcanic. The ages of these intrusives are unknown. The gabbro has weak metamorphic fabric and seems spatially related to the Nisutlin/Pelly Gneiss contact. They may be fault slices of Slide Mountain Terrane (Mortenson, 1992) or the rock may correlate to the Jurassic Pyroxene Mountain pluton east of the property. The felsic dike rocks show no fabric, and may be related to the quartz veining (Bostock, 1957). The porphyritic volcanic was found outcropping northeast of the current property hidden within the brush and was not significantly exposed. Float of this same rock was found in an isolated tributary of Ballarat Creek downstream of the property. Its location and angular nature indicate more outcrops exist.

## **Mineralization and Veining**

The earliest episode of quartz veining consists of lenticular and discontinuous, massive quartz that sub-parallel the foliation. Around Thistle Mountain this variety contains disseminated chalcopyrite and malachite stain as well as pyrite, specular hematite and magnetite. The quartz veins consist of massive interlocked white crystalline quartz that splinters easily due to subsequent deformation. There is no associated alteration of the host rock. The quartz may have injected into dilatant zones that would occur during folding and metamorphism.

A second episode of veining consists of massive white quartz that is locally pitted, vuggy, and has cubes of galena. Samples of this vein were located as float in 1990 and assayed 0.925 ounces per tonne (rock 1625). A sample from a stream float boulder taken in 1996 assayed over 7 grams per tonne (rock 96-001). The sample sites locate on the KIT 7 claim. Appendix A shows that all elevated values in gold come from this style of veining (Andersen). The veins do not alter the host rocks and contacts are sharp. Occasional selvages of chlorite, epidote and hematite are seen.

A placer cut briefly exposed a 75-metre wide section of 2m quartz-feldspar dikes spaced by calcareous biotite schist in 1991. The dikes trend parallel to the foliation but have vertical dips. Cutting the felsic dikes are

oxidized secondary quartz veins up to 30cm width. The veins are vuggy with drusy quartz growth to 3cm size. The veins contain up to 2% pyrite and 3% hematite (specular and earthy) and limonite (oxidized pyrite). Minor pyrite is disseminated in the felsic dikes. Fourteen samples of this system were collected in 1991. The highest gold value assayed 0.7 grams per tonne (rock 1690). The exposure is now under tailings in Ballarat Creek on the KIT 9 claim. Placer nuggets mined downstream of this point contained quartz inclusions and quartz pebbles studded with gold. Pegmatite dikes mapped atop the ridge occur on trend with this exposure. A vein float sample (1648) may be on trend to the east of the creek occurrence. Float and talus of veined felsic meta-granite found on the west half of the property may be the west extension.

The small pyroxene-amphibole bodies found in the whole Ballarat valley have up to 10% pyrrhotite and silver pyrite (marcasite). Placer concentrates on upper Ballarat Creek contained a black tarnishing silver mineral with crystalline form whenever these bodies were included in the cut. Qualitative analysis at UBC by John knight identified it as alloy of native silver and mercury with trace gold.

A 20-metre long gossan is located on the left limit of Ballarat Creek approximately 400 metres downstream from the KIT claims. The rock is composed of cm scale and smaller quartz fragments cemented by a quartz and earthy hematite matrix. Boulder gravels partially underlie this exposure and it is undetermined if the gossan is in-situ or transported. The gossan is proximal to a 10 metre wide white marble band within biotite-feldspar schist (Nisutlin Assemblage).

## Results

The 1998 soil samples were collected along the central claim line shared by the KIT 3-14 claim posts. Analyses were done by Chemex Laboratory in Vancouver using -150 mesh screen size. Soil location, description and gold value is recorded in table 3.

Table 3: 1998 soil quality

Sample # Prefix 9870	Grid East	Grid North	Claim Name	Sample Horizon	Sample Quality	Depth (cm)	Gold ppb
301	595891	6986687	KIT 7/8	B/C	high	50	65
302	595933	6986711	KIT 7/8	B/C	high	40	30
303	595979	6986733	KIT 7/8	A	low	50	30
304	596161	6986817	KIT 7/8	B	moderate	35	10
305	596203	6986845	KIT 7/8	B	moderate	30	<5
306	596255	6986861	KIT 7/8	B	high	70	<5
307	596289	6986901	KIT 9/10	B	high	30	<5
401	597005	6987341	KIT11/12	B	high	30	<5
402	596952	6987320	KIT11/12	A/B	moderate	40	<5
403	596907	6987300	KIT11/12	B	high	40	15
404	596863	6987279	KIT11/12	B	high	40	<5
405	596760	6987244	KIT11/12	SILT	low	70	<5
406	596667	6987204	KIT11/12	B	high	40	<5
407	596603	6987178	KIT11/12	B/C	moderate	50	<5

Sample # Prefix 9870	Grid East	Grid North	Claim Name	Sample Horizon	Sample Quality	Depth (cm)	Gold ppb
408	596526	6987109	KIT9/10	B	moderate	50	<5
409	596490	6987075	KIT9/10	A	low	50	5
410	596454	6987044	KIT9/10	A	moderate	40	<5
411	596416	6987008	KIT9/10	A	moderate	40	<5
501	595122	6986224	KIT3/4	B	high	30	<5
502	595148	6986258	KIT3/4	B	high	15	<5
503	595184	6986292	KIT3/4	B	high	15	<5
504	595222	6986321	KIT3/4	B	high	20	<5
505	595258	6986355	KIT3/4	B	high	30	<5
506	595299	6986388	KIT3/4	B	high	30	<5
507	595338	6986413	KIT3/4	B	high	30	<5
508	595376	6986447	KIT3/4	B	high	70	<5
509	595419	6986479	KIT3/4	B	high	60	20
510	595481	6986523	KIT5/6	B	high	50	<5
511	595578	6986561	KIT5/6	B	high	40	<5
512	595626	6986588	KIT5/6	B	low	40	<5
513	595675	6986606	KIT5/6	B	high	40	15
514	595720	6986623	KIT5/6	B	high	50	20
515	595766	6986645	KIT5/6	B	high	40	15
516	595814	6986659	KIT5/6	B	high	20	<5
517	595861	6986677	KIT5/6	B	high	40	<5
518	596203	6986845	KIT 9	C	high	30	<5
519*	10+00	11+25	KIT 9	C	low	30	<5
520*	9+95	11+50	KIT9	C	moderate	10	<5

\*samples 519 and 520 based on 1991 soil grid

Gold values varied from below detection limit (<5ppb) to 65ppb. Figure 3 gives a visual presentation of soil location and results from the 1998 program. Included with the 1998 samples are soil-grid values greater than 30ppb gold (87th percentile) that were collected in 1991.

Samples 9870301-303 and samples 513-515 occur at approximately the same elevation and are 150 metres apart on opposite sides of a ridge. These samples infill the 1991 data suggesting trends around 070 degrees with steep north to vertical dips.

Samples 9870301 and 302 were both good quality B/C horizon soil over foliated granites and quartz-biotite schist. Sample 9870303 was a low quality sample of lower A horizon but still ran 30ppb gold. Another lower A horizon sample in 1991 analysed 204ppb gold (grid point 36). This indicates that A horizons can be sampled as long as there is some residual soil.



scale  
1:10 000

595000 mE

596000 mE

597000 mE

598000 mE

6987000 mN

6986000 mN

1991 Soil Samples Au\_ppb

- ▲ 400 to 1,000 (1)
- ▲ 200 to 400 (4)
- △ 100 to 200 (10)
- ▲ 50 to 100 (12)
- ▲ 30 to 50 (14)

1998 Soil Samples Au\_ppb

- ★ 50 to 100 (1)
- ★ 30 to 50 (2)
- ☆ 15 to 30 (5)
- ★ 2.5 to 15 (27)

**Prospex Geological Enterprises**

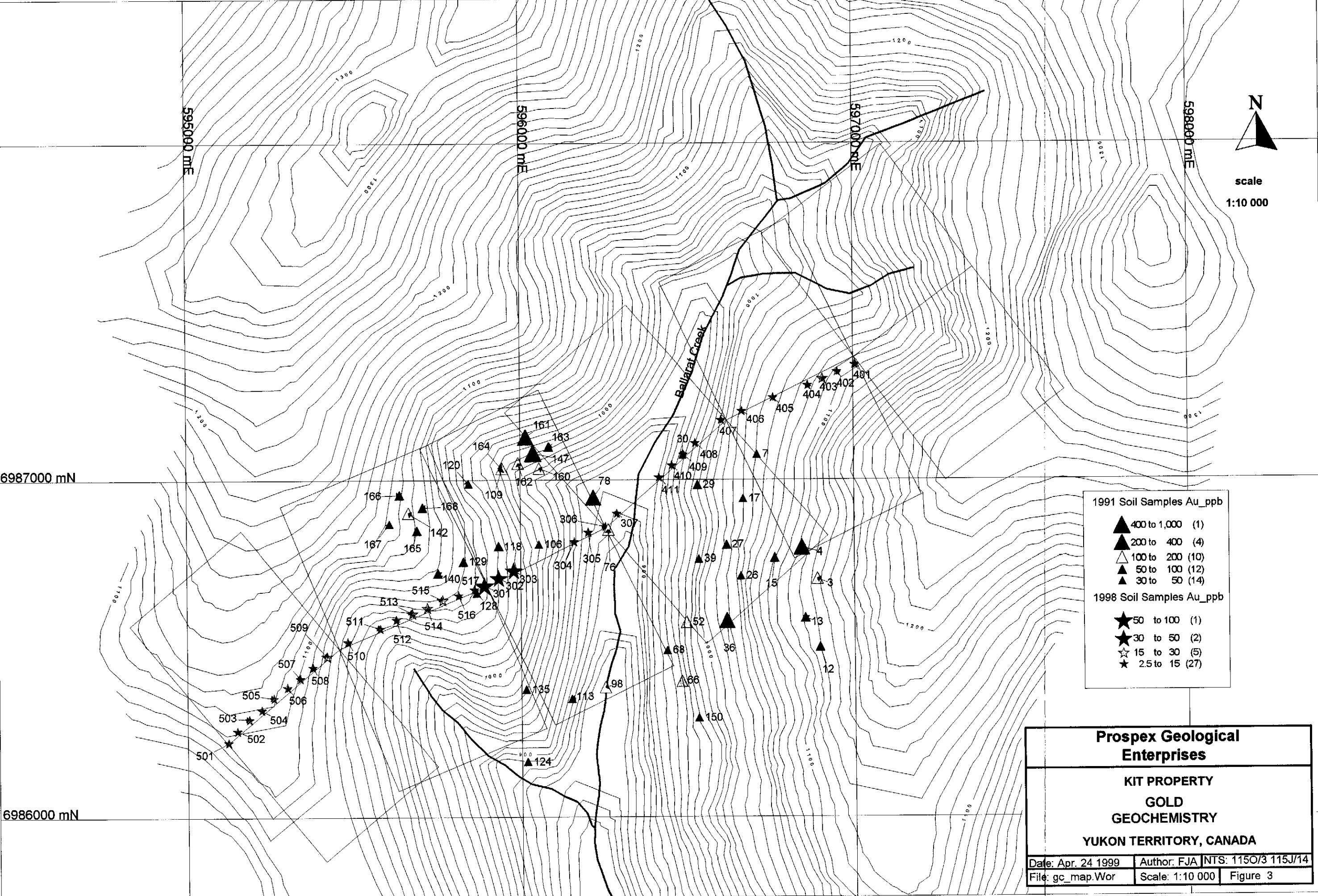
**KIT PROPERTY**

**GOLD GEOCHEMISTRY**

**YUKON TERRITORY, CANADA**

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Date: Apr. 24 1999    Author: FJA    NTS: 1150/3 115J/14  
File: gc\_map.Wor    Scale: 1:10 000    Figure 3



Duplication of 1991 gold results was imperfect. This may be a result of a finer sieve size used for the 1998 data than the 1991 data (150 versus 80 mesh). Sample 9870306 was taken at a 70cm depth beside 1991 grid point #76 (170ppb). Sample 9870518 is also from 1991 grid point #76. This sample was collected in 1996 from the same opening as the original sample. Soil consisted of brown micaceous C horizon. Both samples analysed at a finer size fraction failed to duplicate the 1991 value.

Two other 1998 samples are considered duplicates. Samples 9870519 and 520 were collected in 1996 from grid points 153 and 154 respectively. The two samples were taken in 1991 as part of an infill survey between soils with greater than 100ppb gold. The samples were of poor quality and frozen C horizon soil. By 1996 the sites were thawed and holes were resampled. The soils were given 1998 sample numbers and submitted with the samples collected during the 1998 program. Neither the 1991 nor the 1998 samples proved to be anomalous.

Sample 511 contained the highest copper, iron, molybdenum and arsenic values. Rock chips at the sample site are biotite/chlorite-feldspar schist.

There were weak elevations (8-12ppm) in arsenic throughout the 98705xx series. These values fall between the 65th and 94th percentile. The mean value for arsenic from 420 soil samples collected since 1991 is 6.5ppm. Appendix B contains statistical information for arsenic, gold, lead and silver. Copies of the 1998 assay sheets are enclosed as Appendix C.

## Conclusions and Recommendations

Gold on the KIT claims is associated with yellow stained, moderately easy fracturing, milky white quartz with localized open spaces and cavities. The quartz is sulfide poor, and metals found consist of pyrite, specular hematite, chalcopyrite, galena, and gold. Dark red brown Fe-oxides often coat the vein surfaces and cover fracture surfaces. The veins appear to transect the host geology along planes of weakness such as strong foliation in the Nisutlin Assemblage and along joints and fractures in the meta-granite. Soil sampling in 1998 defined a 100 metre wide anomaly from samples 9870301-303. The program confirmed the presence of gold in soil within the 1991 Sparkling Minerals soil grid. New data was supplied by samples 9870401 to 406. A spot high of 15ppb gold was collected at site 9870403.

Faulting may have a relationship to the mineralizing fluids. A possible north-west trending fault exists in Ballarat Creek cutting the KIT 7-10 mutual claim boundary. A collapsed pingo exists at this point in Ballarat Creek adjacent to posts 1 KIT 7-10. The veined outcrop exposed in 1991 occurs 75 metres upstream of this pingo. Sericite-muscovite schists, possibly meta-rhyolites, first occur upstream of the pingo.

The mineralization event is still unknown. Vein samples with galena can be age dated. High grade gold values appear coincident with galena and probably occur as the same mineralizing event. Fluid inclusion studies on the quartz vein crystals can help constrain a temperature and composition of the hydrothermal fluids. Petrologic studies done on the collected bedrock and vein suites would aid in relating the geology to the mineralization. Placer concentrates would reveal clues to the metal association with the gold. It would not be surprising to find a correlation between tungsten and gold on this property.

The combined 1991 and 1998 results help define a direction to take exploration on the KIT property and outlying region. A program of trenching and rock sampling of anomalous soil values should be undertaken on the KIT 7 and 8 claims. Further explorations on the east permafrosted slopes are required to expand the 15ppb gold high at 403 and also explore the highly anomalous (>200ppb gold) 1991 samples located on the KIT10 claim.

Ground magnetic surveys would help identify geologic contacts and structures around the property. Having the data before trenching would help confirm and identify targets. The felsic units and low sulphide quartz veins may show up as magnetic lows. A low-level airborne survey over the immediate region allows mapping of geology and important structural features. The survey could outline a buried intrusion that may be the generating source of the hydrothermal fluids.

## References

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## Qualifications

Farrell J. Andersen:

- is sole proprietor of Prospex Geological Enterprises who has produced this report.
- is the registered owner of the KIT 3-14 claims.
- carried out the exploration described in the 1998 program.
- also conducted the geologic investigation by Sparkling Minerals in 1991 and 1992.
- graduated from the University of British Columbia in 1989 with a Bachelors of Science in Geology.

A handwritten signature in black ink that reads "Farrell Andersen". The signature is written in a cursive style with a large, looping initial 'F'.



## 1998 Exploration Expenditures on the KIT 3-14 Claims

Soil Geochemistry 38 samples @19.60	\$744.80
Field Supplies & Maps	51.25
Transportation Dawson to Ballarat strip	\$456
Ballarat strip to Dawson	456
	<u>912.00</u>
Camp Costs	259.75
Labour July 2-6, 1998 4 days @275	1100.00
Report Generation	<u>1000.00</u>
Total Expenditures	<u>\$4067.80</u>

*Lucretia Anderson*  
*July 8/99.*

## **Appendix A: Description of Vein Rock Samples**

## Description of rock samples with greater than 400ppb gold

From the following descriptions of vein samples gold can be correlated to a distinct style of vein. The descriptions are taken from 1991 and 1996 rock sample notebooks.

Sample #:	Au_ppb	Ag_ppm	Pb_ppm
1610	3446	<0.1	2

Description: Float sample of vuggy white qz with 10% massive stringers of a dark grey to black metallic mineral. Has a brownish-red streak. Hematite? Has a platy habit. Also 1% very fine grained pyrite in the quartz.

Sample #:	Au_opt	Ag_ppm	Pb_ppm
1625	0.925 oz/T	53	1.53%

Description: Float. Massive milky wjite to translucent vuggy qz vein cut by siderite/limonite infilled fractures and lenses. 10% patchy cubic silver metal, soft, withblack streak (galena).

Sample #:	Au_ppb	Ag_ppm	Pb_ppm
1626	675	1.8	382

Description: Float. White massive quartz vein with vugs infilled by druse quartz. Siderite/ brown carbonate altering to clays. Limonitic seams.

Sample #:	Au_ppb	Ag_ppm	Pb_ppm
1635	414	2.2	8950

Description: Float. Opaque white quartz stained yellow along fractures. Open space textures (vugs, drusy qz, large partially formed qz crystals). 3% galena as 2mm to 1cm cubes in a mass bleb environment. Yellow white carbonate infilling some vugs. Galena surface altering to anglesite. Galena also disseminated as specks within sample.

Sample #:	Au_ppb	Ag_ppm	Pb_ppm
1644	618	1.1	348

Description: Float. Massive white qz veining cutting a yellow-brown stained qz-feldspar fine grained host rock. Veining forms a "rind" similar to 1643, no visible galena. Veining is limonite rich along fracture surfaces and infilling of vugs. Carbonate mixed in with limonites.

Sample #:	Au_ppb	Ag_ppm	Pb_ppm
1648	817	1.5	3

Description: Float. 10cm dogtooth quartz vein in quartzite host. Quartz crystals elongated to 3cm, interlocked with open spaces. Limonite between crystals.

Sample #:	Au_ppb	Ag_ppm	Pb_ppm
1690	698	0.5	9

Description: Grab. Massive to sugary textured interlocked quartz crystals as veins/veinlets in qz-feldspar host. rectangular pits in feldspar component of rock. 1% limonite blebs. Black coating (manganese) on surface of chips.

Sample #:	Au_ppb	Ag_ppm	Pb_ppm
96-006	>7000	51.9	5934

Description: Pieces off a large, vuggy, yellow stained quartz boulder. Host rock is the fine grained qz/feldspar (quartz monzonite?) with weak off-white clay alteration. About 3% orange brown powdery coating of fractures. minor (1%) black to silvery specks of sulfide. Large 91.5cm) quasi-cube shaped, strongly clay altered pale grey mineral (clay altered galena?)

**Appendix B: Statistics for 1991-19998 soil samples**

**Statistics for Au\_ppb in soil samples:**

		Soil values (shown on Figure 3) as Percentile Ranges		
Mean	19			
Median	6.5			
Mode	3	<u>Colour Code</u>	<u>Range of Au_ppb</u>	<u>Lower Percentile</u>
Minimum	3	magenta	400-1000	100th
Maximum	811	red	200-400	99th
Count	420	yellow	100-200	96.5th
		green	50-100	93rd
		dark blue	30-50	87th
		light blue	15-30	70th
		grey	2.5-15	background

**Statistics for Ag\_ppm in soil samples:**

		<u>Lower Percentile</u>	<u>Ag_ppm</u>
Mean	0.17		
Median	0.1	99th	0.5
Mode	0.1	95th	0.4
Minimum	0.1	83rd	0.3
Maximum	0.6	53rd	0.2
Count	420		

**Statistics for As\_ppm in soil samples:**

		<u>Lower Percentile</u>	<u>As_ppm</u>
Mean	6.5		
Median	6	99th	22
Mode	4	95th	13
Minimum	1	85th	10
Maximum	32	65th	8
Count	420	55th	7

**Statistics for Cu\_ppm in soil samples:**

		<u>Lower Percentile</u>	<u>Cu_ppm</u>
Mean	35.1		
Median	29	99th	133
Mode	23	95th	75
Minimum	13	85th	49
Maximum	199	75th	40
Count	420	65th	35

**Statistics for Pb\_ppm in soil samples:**

		<u>Lower Percentile</u>	<u>Pb_ppm</u>
Mean	13.2		
Median	9	99th	100
Mode	9	98th	53
Minimum	1	95th	37
Maximum	174	85th	18
Count	420	78th	15
		68th	13

**Appendix C: Sample and Analysis Techniques  
1998 Soil Sample Assay Sheets**

## **Sample and Analysis Techniques**

Samples were collected into Kraft envelopes from 15 to 70 centimetre depth using a soil auger. Spacing varied from 50 to 200 metres, depending on availability soil. Sample contamination by organics was a problem on the KIT 9-14 claims (samples 9870307, 9870401-411), and poor soil development intermixed with colluvium exists on the KIT 7-8 claims (samples 9870301-306). Excellent soil quality was obtained from the KIT 3-6 claims (samples 9870501-517).

Samples were analyzed for gold using fire assay and atomic absorption (AA) techniques on a 30 gram sub-sample plus inductively coupled argon plasma (ICP) technique for 32 other elements.

Samples were dried, disaggregated and sieved to -150 mesh. they were then analyzed using standard 30gram fire assay (one assay ton) for gold and ICP (G32 package) for 32 elements.

### Gold by Fire Assay / Atomic Absorption Spectroscopy (FA-AA):

A 30g sample is fused with neutral lead oxide flux inquarted with 6mg of gold-free silver and then cupelled to yield a precious metal bead. These beads are digested in 0.5ml concentrated nitric acid for 30 minutes and then 1.5 ml of concentrated hydrochloric acid is added and the mixture is digested for 1 hour. The samples are cooled, diluted to a final volume of 5ml, homogenised and analyzed by atomic absorption spectroscopy. Detection and upper limits are 5 and 10,000ppb, respectively.

### Inductively-Coupled Plasma-Atomic Emission Spectroscopy (ICP-AES):

A prepared sample (1.0g) is digested with concentrated nitric and aqua regia acids at medium heat for two hours. The solution is diluted to 25ml with demineralized water, mixed and analyzed for 32 elements using a Jarrell Ash 1100 plasma spectrometer after calibration with proper standards. The analytical results are corrected for spectral inter-element interference.





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## CERTIFICATE OF ANALYSIS

### A9913349

SAMPLE	PREP CODE		Au ppb	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn
	FA+AA		ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	%	ppm
GC9870301	216	202	65	< 0.2	2.60	4	320	< 0.5	< 2	0.30	< 0.5	10	30	47	4.20	< 10	< 1	0.30	10	1.07	385
GC9870302	216	202	30	< 0.2	1.27	4	300	< 0.5	< 2	0.29	< 0.5	7	19	19	2.50	< 10	< 1	0.09	< 10	0.31	195
GC9870303	216	202	30	< 0.2	1.28	4	270	< 0.5	< 2	0.33	< 0.5	8	22	24	2.29	< 10	< 1	0.07	10	0.34	400
GC9870304	216	202	10	< 0.2	1.60	2	170	< 0.5	< 2	0.20	< 0.5	9	27	23	2.77	< 10	< 1	0.09	< 10	0.57	320
GC9870305	216	202	< 5	< 0.2	1.86	6	320	< 0.5	< 2	0.47	< 0.5	14	44	32	3.40	< 10	< 1	0.10	< 10	0.88	415
GC9870306	216	202	< 5	< 0.2	3.08	2	490	< 0.5	< 2	0.53	< 0.5	25	56	45	5.20	< 10	< 1	0.90	< 10	1.86	645
GC9870307	216	202	< 5	< 0.2	1.76	6	240	< 0.5	< 2	0.43	< 0.5	11	37	26	2.78	< 10	< 1	0.14	10	0.84	285

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SAMPLE	PREP CODE	Mo ppm	Na %	Ni ppm	P ppm	Pb ppm	Sb ppm	Sc ppm	Sr ppm	Tl %	Tl ppm	U ppm	V ppm	W ppm	Zn ppm
GC9870301	216 202	4	0.03	15	580	< 2	< 2	7	42	0.08	< 10	< 10	79	< 10	68
GC9870302	216 202	5	0.01	12	270	8	< 2	3	20	0.04	< 10	< 10	45	< 10	48
GC9870303	216 202	4	< 0.01	12	510	8	< 2	3	23	0.05	< 10	< 10	38	< 10	52
GC9870304	216 202	3	< 0.01	13	340	6	< 2	4	15	0.08	< 10	< 10	62	< 10	54
GC9870305	216 202	4	< 0.01	21	360	6	< 2	6	21	0.10	< 10	< 10	76	< 10	64
GC9870306	216 202	4	< 0.01	24	1180	< 2	< 2	5	30	0.20	< 10	< 10	87	< 10	122
GC9870307	216 202	2	< 0.01	21	680	< 2	< 2	4	31	0.12	< 10	< 10	51	< 10	56

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SAMPLE	PREP CODE		Au ppb	Ag	Al	As	Ba	Be	Bi	Ca	Cd	Co	Cr	Cu	Fe	Ga	Hg	K	La	Mg	Mn
	FA+AA		ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	%	ppm	ppm	%	ppm	%	ppm	
GC9870401	216	202	< 5	< 0.2	1.48	6	140	< 0.5	< 2	0.30	< 0.5	16	27	18	3.06	< 10	< 1	0.09	< 10	0.68	775
GC9870402	216	202	< 5	< 0.2	2.07	4	150	< 0.5	< 2	0.25	< 0.5	12	26	27	3.70	< 10	< 1	0.07	< 10	0.78	435
GC9870403	216	202	15	< 0.2	1.50	2	140	< 0.5	< 2	0.26	< 0.5	8	30	20	2.43	< 10	< 1	0.07	< 10	0.56	270
GC9870404	216	202	< 5	< 0.2	1.55	6	150	< 0.5	< 2	0.27	< 0.5	16	30	20	3.23	< 10	< 1	0.09	< 10	0.66	925
GC9870405	216	202	< 5	< 0.2	1.34	2	140	< 0.5	< 2	0.29	< 0.5	7	25	15	2.38	< 10	< 1	0.09	< 10	0.62	215
GC9870406	216	202	< 5	< 0.2	1.40	2	220	< 0.5	< 2	0.44	< 0.5	8	24	23	2.45	< 10	< 1	0.10	< 10	0.66	300
GC9870407	216	202	< 5	< 0.2	1.44	< 2	160	< 0.5	< 2	0.25	< 0.5	6	25	18	2.30	< 10	< 1	0.10	< 10	0.65	200
GC9870408	216	202	< 5	< 0.2	1.88	4	190	< 0.5	< 2	0.26	< 0.5	9	43	27	3.25	< 10	< 1	0.26	< 10	1.19	365
GC9870409	216	202	5	< 0.2	1.75	6	210	< 0.5	< 2	0.24	< 0.5	10	28	25	2.64	< 10	< 1	0.17	< 10	0.82	340
GC9870410	216	202	< 5	< 0.2	2.11	4	310	< 0.5	< 2	0.49	< 0.5	25	35	26	3.29	< 10	< 1	0.10	< 10	0.99	1090
GC9870411	216	202	< 5	0.2	1.75	4	350	< 0.5	< 2	0.39	< 0.5	16	29	26	2.63	< 10	< 1	0.11	10	0.78	680
GC9870501	216	202	< 5	0.2	1.95	6	270	< 0.5	< 2	0.36	< 0.5	17	31	25	3.30	< 10	< 1	0.10	10	0.86	825
GC9870502	216	202	< 5	< 0.2	2.25	8	120	< 0.5	< 2	0.17	< 0.5	10	32	22	3.47	< 10	< 1	0.05	< 10	0.70	480
GC9870503	216	202	< 5	< 0.2	2.33	8	140	< 0.5	< 2	0.18	< 0.5	10	34	21	3.65	< 10	< 1	0.05	< 10	0.69	270
GC9870504	216	202	< 5	< 0.2	2.16	6	200	< 0.5	< 2	0.30	< 0.5	13	34	42	3.43	< 10	< 1	0.08	< 10	0.81	355
GC9870505	216	202	< 5	< 0.2	1.93	6	210	< 0.5	< 2	0.21	< 0.5	8	31	24	2.92	< 10	< 1	0.06	< 10	0.55	290
GC9870506	216	202	< 5	< 0.2	1.88	8	240	< 0.5	< 2	0.23	< 0.5	9	27	22	3.14	< 10	< 1	0.07	10	0.65	455
GC9870507	216	202	< 5	< 0.2	1.97	12	220	< 0.5	< 2	0.19	< 0.5	10	32	19	3.12	< 10	< 1	0.06	< 10	0.68	360
GC9870508	216	202	< 5	< 0.2	2.13	6	400	< 0.5	< 2	0.43	< 0.5	12	29	48	3.95	< 10	< 1	0.28	< 10	1.18	535
GC9870509	216	202	20	< 0.2	2.02	8	320	< 0.5	< 2	0.30	< 0.5	14	38	23	3.49	< 10	< 1	0.05	10	0.73	535
GC9870510	216	202	< 5	< 0.2	2.36	6	370	< 0.5	< 2	0.37	< 0.5	13	34	48	3.82	< 10	< 1	0.51	< 10	1.27	720
GC9870511	216	202	< 5	< 0.2	3.02	12	440	< 0.5	< 2	0.77	< 0.5	23	59	83	6.29	10	< 1	0.36	10	1.28	525
GC9870512	216	202	< 5	< 0.2	2.12	6	480	< 0.5	< 2	1.15	< 0.5	21	56	45	4.73	< 10	< 1	0.09	30	0.88	1750
GC9870513	216	202	15	< 0.2	2.27	10	550	< 0.5	< 2	0.62	< 0.5	17	38	42	3.85	< 10	< 1	0.15	20	0.84	595
GC9870514	216	202	20	< 0.2	2.41	2	390	< 0.5	< 2	0.41	< 0.5	18	55	40	3.86	< 10	< 1	0.10	10	1.02	615
GC9870515	216	202	15	< 0.2	1.95	6	240	< 0.5	< 2	0.18	< 0.5	13	35	33	3.93	< 10	< 1	0.09	10	0.72	350
GC9870516	216	202	< 5	< 0.2	2.75	10	250	< 0.5	< 2	0.14	< 0.5	14	37	34	4.49	< 10	< 1	0.18	< 10	0.97	365
GC9870517	216	202	< 5	< 0.2	2.26	6	710	< 0.5	< 2	0.23	< 0.5	11	37	25	3.56	< 10	< 1	0.06	10	0.59	440
GC9870518	216	202	< 5	< 0.2	2.43	6	340	< 0.5	2	0.37	< 0.5	23	39	35	4.58	< 10	< 1	0.43	10	1.27	675
GC9870519	216	202	< 5	< 0.2	2.47	2	390	< 0.5	< 2	0.40	< 0.5	21	70	42	3.65	< 10	< 1	0.93	< 10	1.87	530
GC9870520	216	202	< 5	< 0.2	1.63	4	160	< 0.5	< 2	0.17	< 0.5	15	54	32	3.47	< 10	< 1	0.15	< 10	0.93	395

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## A9913350

SAMPLE	PREP CODE		Mo	Na	Ni	P	Pb	Sb	Sc	Sr	Tl	Tl	U	V	W	Zn
			ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm
GC9870401	216	202	1	0.01	13	680	4	< 2	4	19	0.10	< 10	< 10	64	< 10	68
GC9870402	216	202	2	< 0.01	11	440	2	2	5	20	0.07	< 10	< 10	69	< 10	106
GC9870403	216	202	2	< 0.01	12	740	8	< 2	4	18	0.07	< 10	< 10	44	< 10	54
GC9870404	216	202	3	< 0.01	14	640	10	< 2	4	17	0.08	< 10	< 10	56	< 10	78
GC9870405	216	202	5	< 0.01	11	440	12	< 2	3	19	0.07	< 10	< 10	51	< 10	60
GC9870406	216	202	3	< 0.01	12	510	2	< 2	4	28	0.07	< 10	< 10	49	< 10	54
GC9870407	216	202	3	< 0.01	11	500	6	< 2	3	19	0.08	< 10	< 10	47	< 10	58
GC9870408	216	202	4	< 0.01	16	560	4	< 2	6	18	0.11	< 10	< 10	67	< 10	78
GC9870409	216	202	3	< 0.01	13	460	8	< 2	4	22	0.11	< 10	< 10	63	< 10	70
GC9870410	216	202	3	< 0.01	16	590	10	< 2	6	31	0.12	< 10	< 10	80	< 10	88
GC9870411	216	202	3	0.01	13	510	10	< 2	5	28	0.10	< 10	< 10	62	< 10	72
GC9870501	216	202	3	< 0.01	13	660	24	< 2	6	25	0.10	< 10	< 10	75	< 10	92
GC9870502	216	202	3	< 0.01	14	480	6	< 2	3	15	0.09	< 10	< 10	68	< 10	84
GC9870503	216	202	3	< 0.01	18	280	14	< 2	4	18	0.10	< 10	< 10	67	< 10	62
GC9870504	216	202	4	< 0.01	15	510	2	< 2	5	21	0.10	< 10	< 10	69	< 10	52
GC9870505	216	202	5	< 0.01	12	380	10	< 2	4	21	0.11	< 10	< 10	68	< 10	42
GC9870506	216	202	2	< 0.01	14	370	6	< 2	4	18	0.09	< 10	< 10	56	< 10	54
GC9870507	216	202	3	< 0.01	15	310	2	< 2	3	17	0.09	< 10	< 10	67	< 10	56
GC9870508	216	202	3	< 0.01	13	790	6	2	6	26	0.09	< 10	< 10	77	< 10	92
GC9870509	216	202	4	< 0.01	17	450	< 2	< 2	4	20	0.08	< 10	< 10	64	< 10	64
GC9870510	216	202	4	< 0.01	17	1030	< 2	< 2	4	22	0.17	< 10	< 10	82	< 10	86
GC9870511	216	202	8	0.02	29	2370	< 2	< 2	7	43	0.12	< 10	< 10	115	10	152
GC9870512	216	202	5	0.01	31	510	14	< 2	11	67	0.06	< 10	< 10	72	< 10	88
GC9870513	216	202	5	< 0.01	20	610	6	< 2	7	40	0.09	< 10	< 10	71	< 10	76
GC9870514	216	202	6	< 0.01	25	390	6	< 2	6	27	0.13	< 10	< 10	70	< 10	76
GC9870515	216	202	5	< 0.01	18	390	6	< 2	5	14	0.09	< 10	< 10	67	< 10	70
GC9870516	216	202	4	< 0.01	19	280	< 2	2	6	16	0.12	< 10	< 10	87	< 10	68
GC9870517	216	202	3	< 0.01	19	300	8	2	7	20	0.08	< 10	< 10	62	< 10	64
GC9870518	216	202	3	< 0.01	17	730	< 2	< 2	5	24	0.14	< 10	< 10	84	< 10	100
GC9870519	216	202	3	< 0.01	24	1010	< 2	< 2	2	22	0.17	< 10	< 10	56	< 10	90
GC9870520	216	202	4	< 0.01	18	460	< 2	< 2	3	12	0.10	< 10	< 10	69	< 10	74

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