

**SUMMARY REPORT ON  
ELK PROJECT, PROSPECTING PROGRAM  
CARMACKS AREA, YUKON TERRITORY**

**NTS 105L/3, 4, 5, 6**

**BY**

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**January 25, 2000**

99-044

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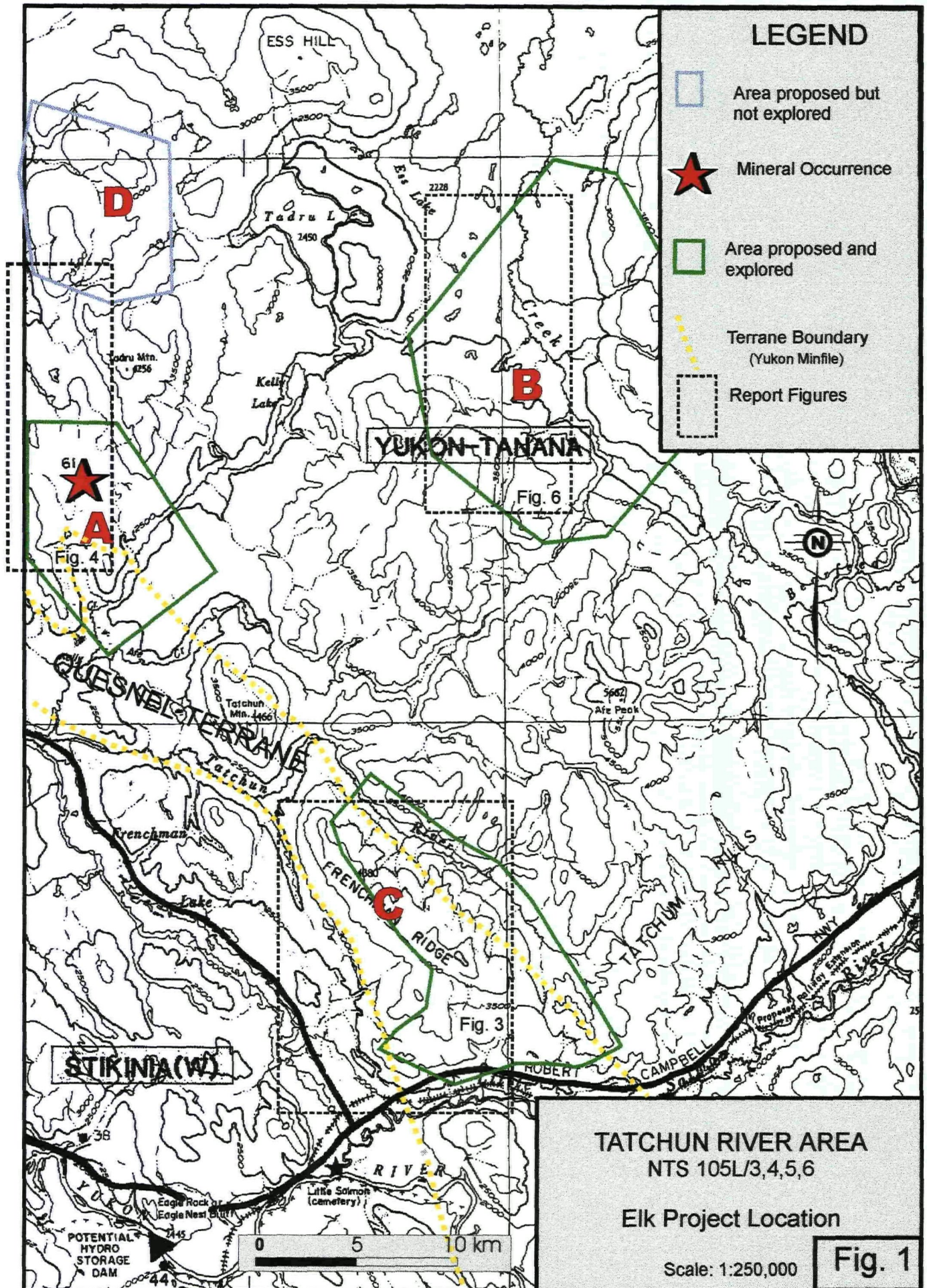
## 1. INTRODUCTION

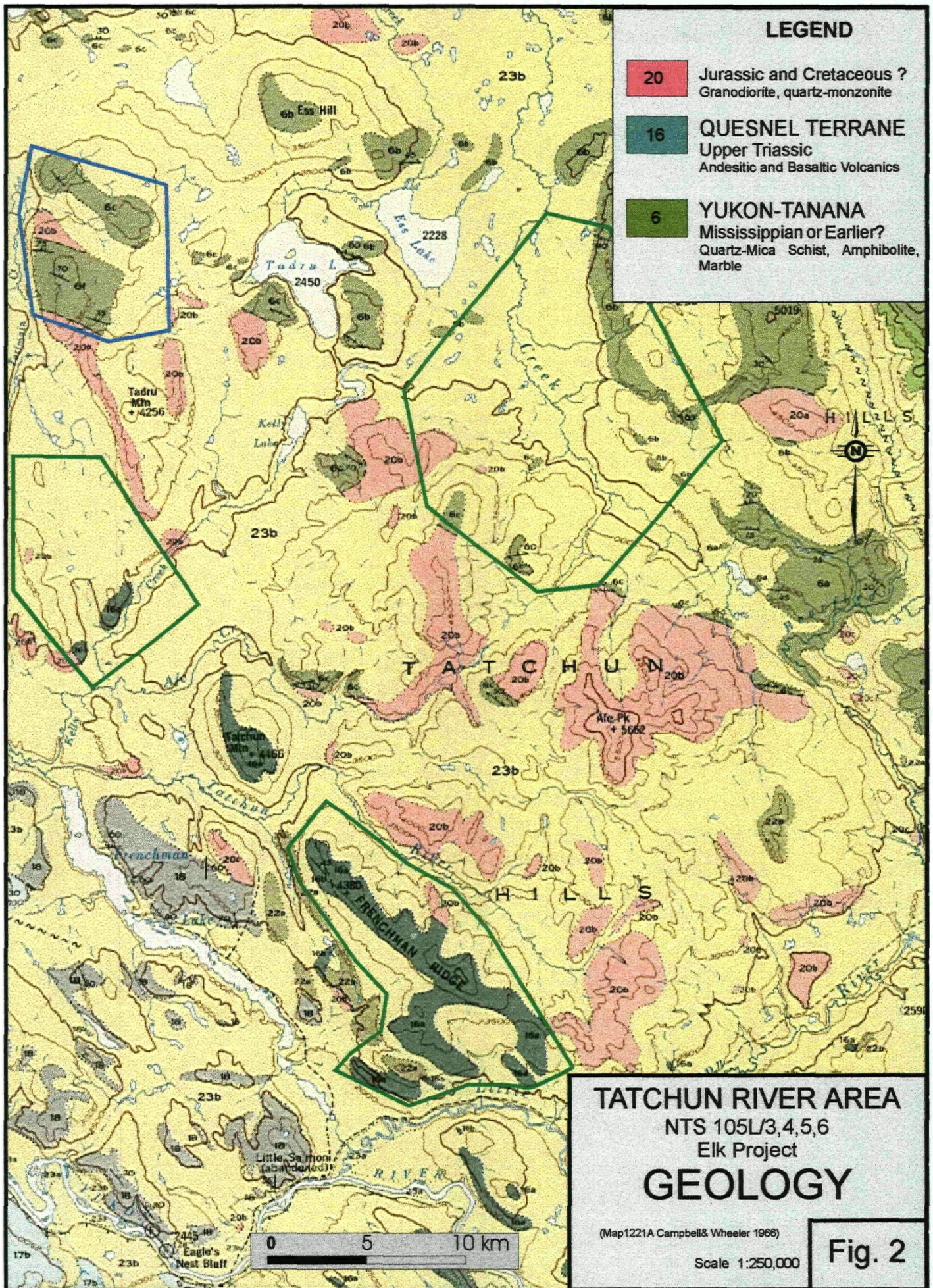
The Elk project is a grassroots mineral exploration program proposed by the writer and accepted for funding under the Yukon Mining Incentives Program. The writer proposed exploring four areas, located approximately 30 to 50 km northeast of Carmacks. These areas are variably underlain by metamorphosed igneous, volcanic and sedimentary rocks, belonging to two distinct geologic terranes. The writer's previous exploration experience in the area in 1971 and recent reevaluations by government and industry geologists of the Yukon-Tanana Terrane, prompted the proposal to evaluate these areas by prospecting.

Two types of targets were sought. The first, is porphyry copper mineralization associated intrusive rocks of the Quesnel Terrane. Two of the prospecting targets include lithologies assigned to this terrane. The second target is massive sulphide mineralization associated with the Yukon-Tanana Terrane (YTT). Recent mineral exploration successes in Finlayson Lake map area, have made the volcanic hosted massive sulphide (VHMS) deposit a viable target elsewhere in Yukon-Tanana Terrane. The metamorphic rocks of the YTT in the project area are not far removed from those of Finlayson Lake area, if the present displacement of the Tintina Fault zone is removed. The Carmacks area was chosen, because it is relatively accessible and it has been under explored because of poor exposure. The lowest priority target of four proposed, was not explored. An examination of a stream draining this area revealed nothing encouraging to justify a fly camp.

A combination conventional prospecting, stream panning and till geochemistry were to be employed. These methods were employed with mixed success. Till sampling was successfully carried out in one target area but sample sites were often limited by deep glaciofluvial and lake sediments which blanket much of the area. Deep frozen organic horizons and volcanic ash often hindered or prevented sampling.

Stream prospecting was also less effective than anticipated. This was primarily due to a lack of water. Many of the drainages in low-lying areas are dry and overgrown. Streams which





**LEGEND**

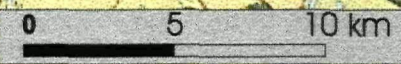
- 20** Jurassic and Cretaceous ?  
Granodiorite, quartz-monzonite
- 16** **QUESNEL TERRANE**  
Upper Triassic  
Andesitic and Basaltic Volcanics
- 6** **YUKON-TANANA**  
Mississippian or Earlier?  
Quartz-Mica Schist, Amphibolite,  
Marble

**TATCHUN RIVER AREA**  
NTS 105L/3,4,5,6  
Elk Project  
**GEOLOGY**

(Map1221A Campbell & Wheeler 1968)

Scale 1:250,000

**Fig. 2**



can be prospected and sampled are widely spaced, leaving large gaps in the sample coverage. A total of 31 till and soil samples, 13 stream sediment samples, 13 rock geochemical samples, 3 panning concentrates and 4 water samples were collected. All samples were analyzed by Acme Analytical Laboratories Ltd. of Vancouver. Soil and stream sediment samples were analyzed by a 36 element ICP/ES & MS package using a 15 gm sample. Rock samples were analyzed by a 32 element ICP package, while gold was analyzed by acid leached ICP/MS on a 10 gm sample. Panning concentrates were pulverized, then a .5 gm sample was leached by acid and analyzed by ICP/ES. Gold analysis on pan concentrates were done by ICP/MS on a 10 gm sample. Water samples were analyzed for 33 elements by ICP/ES.

The writer and field assistant Jason McLaughlin left Vancouver on Aug 1 and continued to Carmacks on Aug 4, after resupplying in Whitehorse. The original plan, to fly to area "A" Tatmain Creek, had to be modified because no local helicopters were available due to forest fire fighting commitments. A camp was established on the shore of the Yukon River, southwest of Frenchman Lake and prospecting commenced in area "C" Frenchman Ridge, in areas accessible on foot, from nearby roads. Area A and B were explored from Aug. 11 to August 25, 1999. On August 26, the crew left the field for Whitehorse due to a serious hand injury suffered by field assistant Jason McLaughlin. Prospecting recommenced on September 1, after the arrival of Chris Eakin, who assisted the writer until the end of the program. The field program ended on September 9, primarily because of poor weather conditions.

This report summarizes the prospecting activity and is divided into three sections, approximately in the order the work was carried on. Sample descriptions are inserted at the end of each project area section, but geochemical analyses are appended to the end of the report.

## **2. LOCATION AND ACCESS**

The prospecting areas are located in central Yukon approximately from 30 to 50 km northeast of Carmacks. Only a small portion of one project area is accessible on foot from the

Campbell highway or the Frenchman Lake road. The remaining targets are accessible by helicopter, based in Carmacks. A Bell 206 helicopter operated by Trans North Helicopters of Whitehorse was used to access the target areas.

### **3. PROSPECTING TARGETS.**

#### **Area C, Frenchman Ridge (Fig. 3)**

The Frenchman Ridge target area is located in the Whitehorse Mining District, 34 km east-northeast of Carmacks, by air. The prospecting target in this area was the Upper Triassic volcanic assemblage which has been assigned to the Quesnel Terrane. Volcanic rocks, and their coeval intrusions within this terrane, in British Columbia, host important Cu, Cu-Au porphyry and skarn deposits. Encouragement to prospect this area came from the writer's previous work in the area. During a 1971 exploration project, one of the project's field assistants reported finding copper mineralization in volcanic rocks. This occurrence was not followed up at the time and the location, although uncertain, did provide encouragement for exploring this area

Four prospecting and sampling traverse were carried out in Frenchman Ridge area in two periods from August 4 to 10, and from September 6 to 9. Two drainage basins on the west side, were prospected and sampled during the first period, because of the unavailability of charter helicopters and because these areas could be reached on foot. In early September, the crew returned by helicopter to continue exploring Frenchman Ridge from a fly camp. By this time, fall weather conditions kept the higher elevations covered by clouds. The northern half of the ridge was prospected by two traverses, usually under limited visibility. This fly camp was demobilized on Sept 9, leaving the southern half of the ridge unexplored

G.S.C. mapping (Campbell, 1966) indicates that the target area is underlain by andesitic to basaltic volcanic rocks and carbonates of the Upper Triassic or earlier age. Basaltic flows and sedimentary rocks of Tertiary age flank the western slope of Frenchman Ridge. Intrusions of biotite granodiorite of Jurassic and/or Cretaceous age are mapped east of Frenchman Ridge and a

small stock is mapped to the west.

Open File 1961 stream sediment sample number 1339 was followed up by prospecting two drainage basins on the west side of Frenchman Ridge. This sample contains 93 ppm Cu, which is in the top 2% of all samples reported. Six stream sediment samples were collected while prospecting these drainages. All analyses returned background concentrations, with copper ranging from 27 to 35 ppm. Gold analyses ranged from 0.3 to 2.2 ppb. Basalt flows and volcanic-derived sedimentary rocks of Tertiary age were intermittently encountered along the stream banks. The target Mesozoic volcanic rocks were out of reach of road based traverses.

The northern half of Frenchman Ridge is underlain by isolated outcrops and felsenmeer of andesitic volcanic rocks. These lie in contact with a steeply southwest dipping, thin bedded, white to grey marble unit. Bedding attitudes vary significantly over short distance but overall dip is to the southwest.

Bedding attitudes in the volcanic rocks are uncertain because of the massive texture of some outcrops and a tectonic? fabric, which penetrates these rocks, either masks original structures or creates the appearance of primary textures. This fabric parallels bedding attitudes in the marble, with a steep southwesterly dips.

No mineralization was observed but epidote alteration, associated with joints and fractures, is common. Metasedimentary and tuffaceous rocks are a minor component of this unit and one float fragment of rhyolite was observed at the north end of the ridge.

Traverses within the target area are presented on Fig. 3. Two regional stream sediment anomalies outside the map area were also examined. Traverse reports for these areas are presented on the following pages.

TRAVERSE EC 08/06, Little Salmon River Area 105L/3

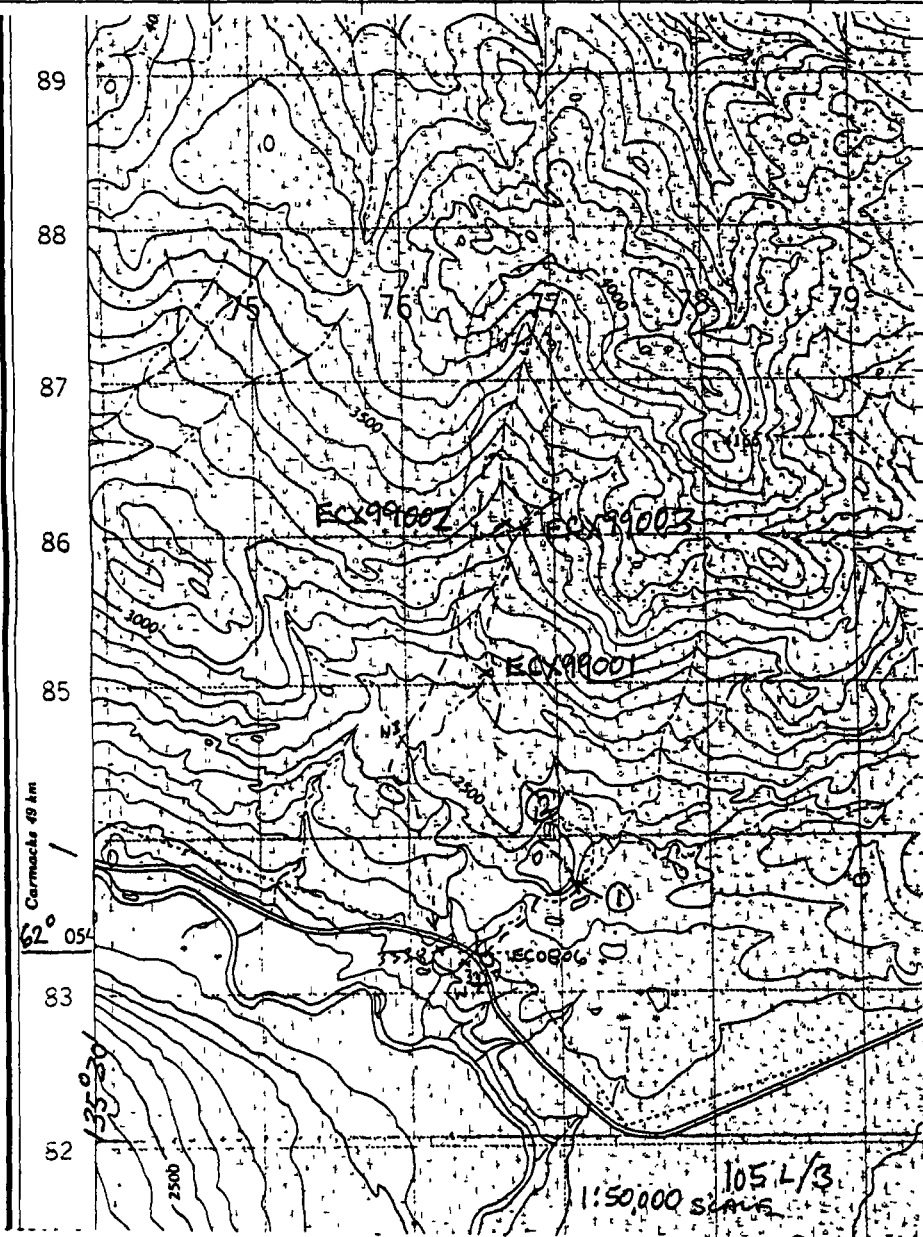
Two regional silt anomalies were selected in the Little Salmon River Area because of their proximity to the Campbell highway. The target south of the Little Salmon River could not be reached, therefore a secondary target, consisting of three stream sediment samples and a weak magnetic anomaly was examined. The three samples ranged from 24 to 93 ppm Cu and 27 to 318 ppb Hg. The area is underlain by poorly exposed Tertiary basalt and Triassic volcanics. Three stream sediment samples were collected, which returned background levels in all elements.

# GEOCHEMICAL SAMPLING REPORT

Page 1 of 1

Project: ELK Property: AREA "C" Claim Group: \_\_\_\_\_ Claim: \_\_\_\_\_  
 Sampler: \_\_\_\_\_ Traverse: EC0806 Grid: \_\_\_\_\_ Date: AUG 6, 1999  
 Date Samples Sent: \_\_\_\_\_ Date Results Received: \_\_\_\_\_ Date Plotted: \_\_\_\_\_

Sample Number	Line (Northing) (Easting)	Station (Easting) (Northing)	Horizon	Depth (cm)	Sed. Type	Colour	Notes (Rock Fragment Description)
01	X ECX99001	476460	6884940		SILT	BEIGE	VERY FINE SILT
02							
03							
04	X ECX99002	476680	6886100		SILT	BEIGE	VERY FINE SILT
05							
06							
07	X ECX99003	476820	6886080		SILT	BEIGE	SANDY SILT
08							



**16a** UPPER TRIASSIC on EARLIER

- ① black to grey olivine basalt
- ② brown weathering dark grey basalt sub-0/c

Line crosses BL \_\_\_\_\_ m \_\_\_\_\_ of Station \_\_\_\_\_  
 Daily Totals: Line-km \_\_\_\_\_ Number of Samples: \_\_\_\_\_

TRAVERSE EC 08/09, Stream sediment anomaly northeast of Frenchman Lake, 105L/4

A stream sediment sample, 3287, is anomalous in Mo, Cu, Pb, Zn, Cd, Co, Ba and U in water. The sampled drainage is underlain by sedimentary rocks of the Jurassic Laberge Group. Sample 1325, located 3 km to the southwest from this site returned a gold analysis of 316 ppb.

The northern multi-element geochemical anomaly was investigated by prospecting because it is more accessible from the road. This drainage is underlain by poorly exposed shale, argillite and siliciclastics. A follow up stream sediment sample was taken about 300 metres upstream from the anomaly. This sample (ECX99010) confirmed the anomalous levels of Mo, Cu, Pb, Zn, Ag, As, Cd and Sb. No apparent source for these metals was found in outcrop. However, rare calcite filled fractures seen in bedrock and a few fragments of pyritic, porphyritic rocks found in the stream bed, may be related to this anomaly.

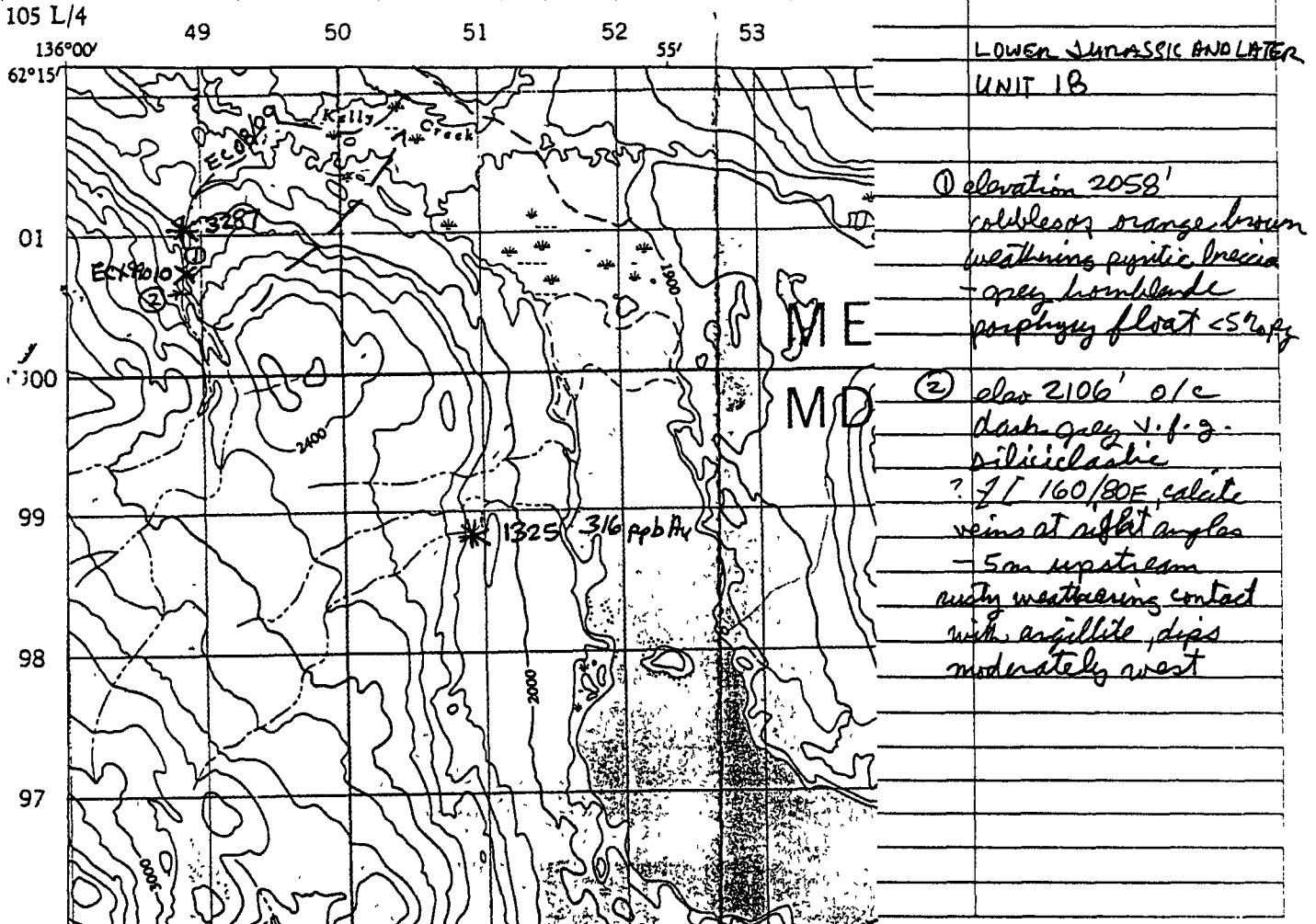
FOLLOW UP ON R.G.S. ANOMALY NW END OF FRENCHMAN LAKE

GEOCHEMICAL SAMPLING REPORT

Page 1 of 1

Project: ELK Property: AREA "C" Claim Group: \_\_\_\_\_ Claim: \_\_\_\_\_  
 Sampler: US-JM Traverse: \_\_\_\_\_ Grid: \_\_\_\_\_ Date: Aug 9, 1999  
 Date Samples Sent: \_\_\_\_\_ Date Results Received: \_\_\_\_\_ Date Plotted: \_\_\_\_\_

Sample Number	Line (Northing) (Easting)	Station (Easting) (Northing)	Horizon	Depth (cm)	Sed. Type	Colour	Notes (Rock Fragment Description)
X 01	EGX 99010	448980E	6900750		Shale fines	dark grey to black	mainly lower Jurassic siliclastic and black argillite.
02							
03							
04							
05	Sample taken on a creek with a multi-element geochem anomaly. The area is underlain by upper Jurassic meta-sediments but the uniqueness of this sample site warranted an examination. A Sciencillouite was carried because a nearby drainage was also anomalous in U sediment and water.						
06							
07							
08							
09							
10							
11	OPEN FILE 1961						
12	* 3287	Au 5ppb	247 ppb	55 ppb	16 ppm Pb	2.1 ppm Cd	
13	* 1325	316 ppb Au					



CLOSURE Last Station before reaching Base Line \_\_\_\_\_ Distance to Base Line \_\_\_\_\_  
 Line crosses BL \_\_\_\_\_ m \_\_\_\_\_ of Station \_\_\_\_\_  
 Daily Totals: Line-km \_\_\_\_\_ Number of Samples. \_\_\_\_\_

**Frenchman Ridge Area  
Traverse Reports**

GEOCHEMICAL SAMPLING REPORT

Project: ELK Property: AREA "C" Claim Group: \_\_\_\_\_ Claim: \_\_\_\_\_  
 Sampler: \_\_\_\_\_ Traverse: \_\_\_\_\_ Grid: \_\_\_\_\_ Date: SEPT. 7, 1999  
 Date Samples Sent: \_\_\_\_\_ Date Results Received: \_\_\_\_\_ Date Plotted: \_\_\_\_\_

Sample Number	Line (Northing) (Easting)	Station (Easting) (Northing)	Horizon	Depth (cm)	Sed Type	Colour	Notes (Rock Fragment Description)
01 ① W209	466403	6894655		4360'			area of sub-olc $\approx$ 25m in diameter med grey-green augite-feldspar porphyry, cut by intermittent qtz-feldspathic stringers and epidote alteration 5-10cm wide
02							
03							
04							
05							
06							
07 ② W210	466319	6894418		4380'			poor, olc of similar porphyry
08							
09 ③ $\approx$ 200m @ 230° from ①							olc of fine grained, med. grey-green volc. rocks, epidote alteration along fractures and chilled margins
10							
11							
12							
13 ④ W211	465979	6894718					olc of f.g. meta-volcanic - siltstone med. grey to grey-green fabric in olc is 170/60W, probably late Tectonic fabric
14							
15							
16							
17							
18 ⑤ (W212)	465602	689537		4300'			olc med green meta andesitic volcanics, epidote and rare magnetite along fractures 10-20cm apart, amygdaloidal in part $\angle$ 165/65E late tectonic joints
19							
20							
21							
22							
23							
24							
25 ⑥ W213	465016	6895777		4191			pale to med. green lapilli tuff $\angle$ 135/80SW scattered outcrops over 150m, pale green qtz. eye capped tuff? with sericite, rare dark grey lithic fragments, one fragment of sphyerolite, float
26							
27							
28							
29							
30							
31							
32							
33 ⑦ W214	464749	6895735					grey thin bedded sandstone $\angle$ 160/80W
34							
35							
36							
37 ⑧ W215	464683	6896936		4125'			cliff to the west $\angle$ 138°/65SW 100m diameter, sub-outcrop med green f.g. andesitic volcanics epidote alteration along fractures minor qtz veins, may be tuff or meta sed. in part
38							
39							
40							

CLOSURE Last Station before reaching Base Line \_\_\_\_\_ Distance to Base Line \_\_\_\_\_  
 Line crosses BL \_\_\_\_\_ m \_\_\_\_\_ of Station \_\_\_\_\_  
 Daily Totals Line-km \_\_\_\_\_ Number of Samples \_\_\_\_\_

FRENCHMAN RIDGE

GEOCHEMICAL SAMPLING REPORT

Project: ELK Property: AREA "C" Claim Group: \_\_\_\_\_ Claim: \_\_\_\_\_  
 Sampler: US - CE Traverse: \_\_\_\_\_ Grid: \_\_\_\_\_ Date: SEPT 8, 1999  
 Date Samples Sent: \_\_\_\_\_ Date Results Received: \_\_\_\_\_ Date Plotted: \_\_\_\_\_

Sample Number	Line (Northing) (Easting)	Station (Easting) (Northing)	Horizon	Depth (cm)	Sed. Type	Colour	Notes (Rock Fragment Description)
01	① W 217	467648	6893789	4248	100 x 25 m area of sub	- o/c	elongated N-S on eastern edge of hill, med grey f.g. porphyritic, foliated andesite, minor quartz - feldspathic banding and local disseminated epidote alteration structural "fabric" ~ 170°
02							
03							
04							
05							
06							
07							
08							
09	② W 219	468760	689330	4227	a series of sub o/c's trending		at 070° over 300 x 50 m area of biotite granodiorite, andesitic volc. float
10							
11							
12							
13							
14							
15							
16							
17							
18							
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39							
40							

CLOSURE Last Station before reaching Base Line. \_\_\_\_\_ Distance to Base Line. \_\_\_\_\_  
 Line crosses BL \_\_\_\_\_ m \_\_\_\_\_ of Station \_\_\_\_\_  
 Daily Totals Line-km \_\_\_\_\_ Number of Samples. \_\_\_\_\_

#### **Area A, Tatlain Creek Fig. 4**

Prospecting target "A" is located in NTS map area 105L/5, 33 km northeast of Carmacks, in the Whitehorse Mining District. This area is accessible by helicopter. On August 11, a fly camp was established at the south end of the project area. The primary target is porphyry copper mineralization. It was selected based on regional magnetic data and Yukon Minfile occurrence 105L-61. The Minfile occurrence is reported as porphyry copper-style mineralization and is located on the east flank of an isolated magnetic high (GSC MAP 3367G).

Several attempts were made to find this outcrop, but without success. The showing area is covered by deep glaciofluvial and glaciolacustrine deposits, characterized by hummocky terrain and a large meltwater channel which is presently occupied by isolated ponds and an underfit tributary of Tatlain Creek.

The deep overburden near the showing makes soil geochemical sampling impractical. Exploration therefore focused on a northwest-trending ridge, west of the target.

The ridge to the west is primarily underlain by foliated hornblende and biotite granodiorite orthogneiss. However, at elevations below 2600 ft. the east flank of this ridge appears to be underlain by dark green amphibolitic schist of the Yukon-Tanana Terrane rather than an extension of Mesozoic volcanics of the Quesnel Terrane, which would be likely, based on a reasonable projection of mapping by Campbell. The approximate extent of these amphibolitic schists is defined by low-lying outcrops at the south end of the ridge and by large, angular talus blocks at the north end. A sill of Tertiary? aged quartz-feldspar porphyry lies within the amphibolitic unit at the south end. The amphibolite unit has a south-southeasterly strike and dips at 43 degrees to the east. Very fine grained disseminated pyrite and malachite staining were observed in an area. A sample of this material (EAR 99081201) contained 133 ppm Cu and 3.3 ppb gold.

Contour till sampling was carried out on the east flank of this ridge, to test the limits of

copper mineralization. Soil sample pits were dug at 150 metre intervals whenever possible, using a mattock and narrow-bladed shovel. Sample depths ranged from 25 to 200 cm depending on the depth to till. A contour elevation of 2600, 2700 and 2900 feet were employed depending on conditions. Below these elevations, the depth of glaciolacustrine sediments, volcanic ash and frozen organics were often too great to reach the till horizon. Only till samples were taken to keep the sample media consistent. Permafrost areas with deep organics could not be sampled, resulting in gaps in the data.

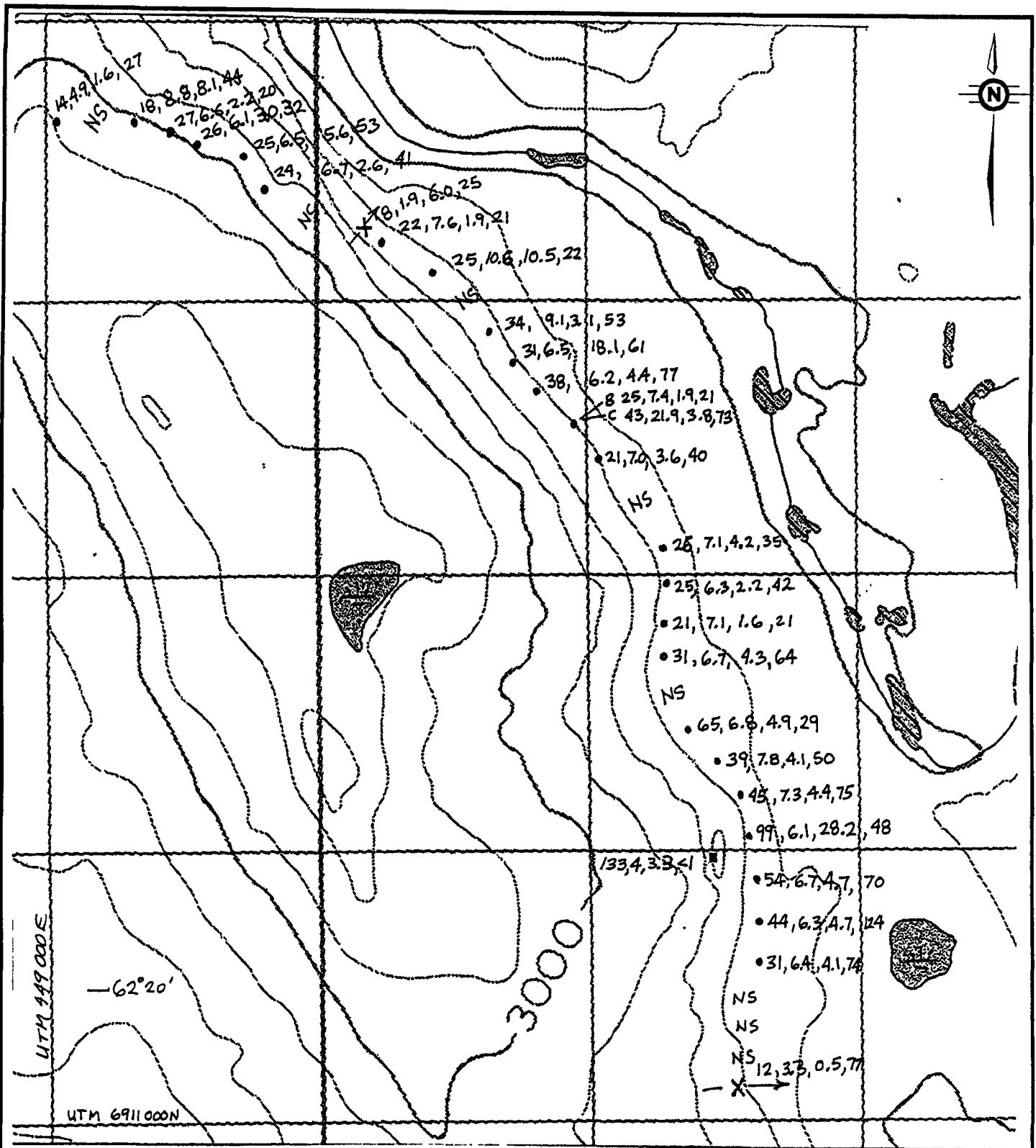
A detail drawing of the geochemical survey (Fig 5), on the following page, presents analyses for Cu, As and Hg. The highest copper analysis, 99 ppm, and 28.2 ppb Au confirm the approximate location of the copper mineralization in the the amphibolite. There is no evidence though, in the data, of any extensions to the mineralization. Two other isolated gold values of 10.5 and 18.1 ppb Au occur along the survey line but are not high enough to warrant follow up.

#### VLF-EM Survey

Because of the deep overburden in the vicinity of the magnetic anomaly, two VLF-EM test lines were planned across the magnetic anomaly, in an east-west direction, perpendicular to the axis of the anomaly. The lines were flagged and run on August 16. This data was not reliable due to operator error. One of the test lines was resurveyed, using a Geonics EM-16. The data, which appended to this section of the report, shows very little response over the centre of the anomaly. This is perhaps due to deep overburden.

On August 17, camp was moved 7 km north to Tatmain Creek. The northern half of the map area was prospected from this location. This area is predominantly underlain by Mesozoic? aged, hornblende granodiorite orthogneiss.

A K-feldspar megacrystic augen gneiss zone lies within the granodiorite orthogneiss, in the northeast corner of the map area. Contacts between the granodiorite orthogneiss and megacrystic



### LEGEND

- till sample location  
ppm Cu, ppm As, ppb Au, ppb Hg
- × stream sediment sample  
ppm Cu, ppm As, ppb Au, ppb Hg
- rock geochem  
ppm Cu, ppm As, ppb Au, ppm Hg

Elk Project 1999

**Tatlain Creek Area  
Till Geochemistry Detail**

Date	File	NTS	Scale	Fig
Aug 99	Atildetail.cdr	105L/5	1:20,000	5

augen gneiss are gradational. Orthogneiss and augen gneiss are cut by centimetre scale “aplitic” quartz-feldspar bands, parallel to and cross-cutting foliation, which strikes south-southeasterly and dips steeply eastward.

The relationship of metavolcanic amphibolites to orthogneiss, in the centre of the map area is similar to that in the south. Previously unmapped outcrops of chloritic schist and amphibolite flank the east side of a north-trending ridge in the centre of the map area. Outcrops trace an arcuate, inferred contact between the orthogneiss and the schist. Foliations within the amphibolitic schists trend from southeast to south, with dips ranging from 40 to 50 degrees to the east. At the northern limit of exposure, this unit is cut by hornblende feldspar porphyry dykes of Tertiary? age.

No mineralization was observed in outcrop but one fragment of grey, pyritic, siliciclastic, (EA99082001) returned 133 ppm Cu and 3.3 ppb Au. The source of the float is unknown.

**Tatlemain Creek Area  
Traverse Reports**

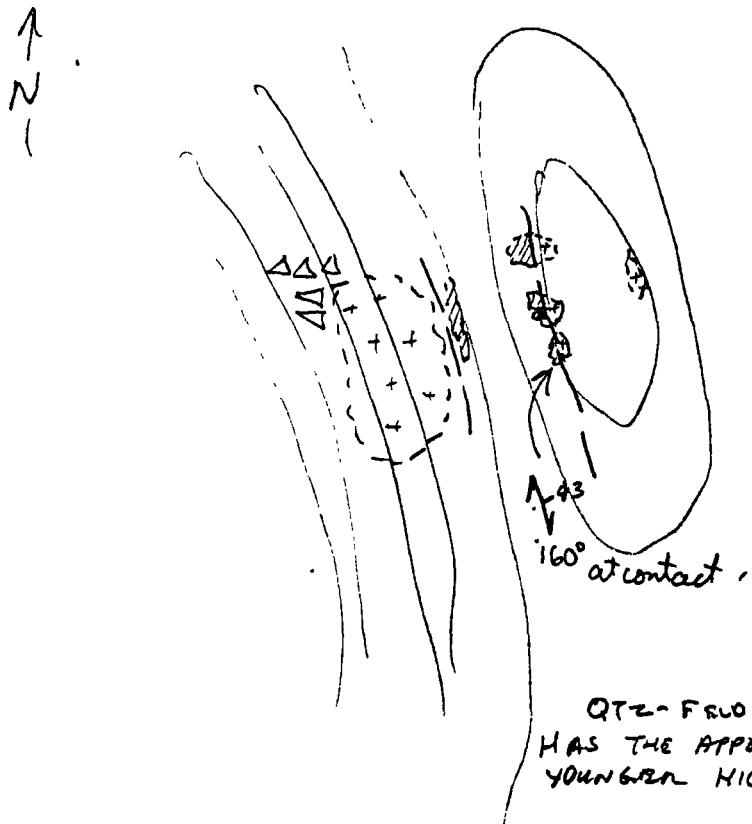
Ridge east of camp.

GEOCHEMICAL SAMPLING REPORT

Page 1 of 1

Project: ELK Property: Area A Claim Group: \_\_\_\_\_ Claim: \_\_\_\_\_  
 Sampler: US - JM Traverse: EA9912 Grid: \_\_\_\_\_ Date: AUG 12, 1999  
 Date Samples Sent: \_\_\_\_\_ Date Results Received: \_\_\_\_\_ Date Plotted: \_\_\_\_\_

Sample Number	Line (Northing) (Easting)	Station (Easting) (Northing)	Horizon	Depth (cm)	Sed. Type	Colour	Notes (Rock Fragment Description)
01	EA99081201				ROCK BEDROCK	DARK GREEN	
02							
03					DARK GREEN	STRONGLY FOLIATED, META VOLCANIC	
04					LOOKS LIKE	ORIGINAL "PORPHYRITIC" TEXTURE	
05					CHLORITE & EPIDOTE ALTERATION, THIN		
06					DISCONTINUOUS WHITE CARBONATE		
07					BANDS UP TO 5% OF ROCK.		
08					V.F.G. MALACHITE DISSEMINATED ALSO		
09					V.F.G. DISSEMINATED PYRITE		
10							
11							



- Qtz feldspar porphyry.
- ▨ dark green highly foliated mafic meta volcanic YUKON-TANANA?
- △ TALUS FRAGMENTS OF MAFIC META VOLCANIC
- ROCK EA99081201 SAMPLE SITE

QTZ-FELDSPAR PORPHYRY SILL HAS THE APPEARANCE OF A MUCH YOUNGER HIGH LEVEL INTRUSION

CONTACT IS SHEARED BY WEAK TROPIC FORCE, HOWEVER VERY CLEAR CHILLED MARGIN WITHIN THE QFP SUGGESTS A LATE INTRUSIVE AGE RELATIVE TO VOLCANICS

- Contour soil sampling traverse south and west of camp at elev. 2650'

GEOCHEMICAL SAMPLING REPORT

Project: ELK Property: AREA "A" Claim Group: \_\_\_\_\_ Claim: Aug 13, and  
 Sampler: US-JM Traverse: EA 0814 Grid: \_\_\_\_\_ Date: Aug 19, 1999  
 Date Samples Sent: \_\_\_\_\_ Date Results Received: \_\_\_\_\_ Date Plotted: \_\_\_\_\_

	Sample Number	Line (Northing) (Easting)	Station (Easting) (Northing)	Horizon	Depth (cm)	Sed. Type	Colour	Notes (Rock Fragment Description)
01	EAS99011	<del>451635</del> <sup>350</sup>	6913060	B	25	SANDY PEBBLY SILT	LIGHT BROWN	START OF TRAVERSE
02	EAS99012			B	25	PEBBLY SAND	PALE BRN	
03	EAS99013			C	120	PEBBLY SILT	PALE BRN	ORGANICS AND ASH FOR 50 cm
04	EAS99014			C	50	PEBBLY SANDY CLAY	PALE GREY BROWN	
05								
06	EAS99015	N/S						30cm FROZEN SILT & ORGANICS
07								
08	EAS99016			C	50	PEBBLY SILTY SAND	PALE BROWN	GLACIO-FLUVIAL ?
09								
10	EAS99017			C	50	SANDY PEBBLY CLAY & COLLUVIUM	PALE GRAY BRN	VOLCANIC ROCK FRAGMENTS PEBBLE SIZE
11								
12	EAS99018			C	60	PEBBLY SAND & CLAY	PALE BROWN	GLACIOFLUVIAL SEDIMENTS WITH COLLUVIUM, VOLC. ROCK FRAGMENTS
13								
14								
15	EAS99019	451636	6912009	C	50	SANDY PEBBLY SILT	PALE GREY BRN	GLACIO FLUVIAL SEDIMENTS WITH COLLUVIUM
16								
17	EAS99020			C	170	PEBBLY, SILTY SAND	PALE GREENISH GREY-BROWN	GLACIO FLUVIAL SEDIMENTS AND COLLUVIUM
18								
19								ABOUT 150cm OF SILT
20	EAS99021			C	200	PEBBLY SANDY SILT	PALE GREY BROWN	SMALL META-VOLCANIC ROCK FRAGMENTS
21								
22								UNDER 100cm OF SILT
23	EAS99022			C	60	PEBBLY SILTY CLAY	PALE GREY BROWN	META VOLCANIC ROCK FRAGMENTS
24								
25	EAS99023	N/S			40	OF BLACK FROZEN		ORGANICS
26	EAS99024	N/S				DEEP FROZEN		ORGANICS AND ASH
27	EAS99025	N/S				" "	" "	" "
28		451645	691126					
29	EAX99026 X	451640	691131	S		SILT	GREY	10cm NW OF EAS99025
30								
31								
32								
33								
34								
35								
36								
37								
38								
39								
40								

CLOSURE Last Station before reaching Base Line \_\_\_\_\_ Distance to Base Line \_\_\_\_\_  
 Line crosses BL \_\_\_\_\_ m \_\_\_\_\_ of Station \_\_\_\_\_  
 Daily Totals Line-km \_\_\_\_\_ Number of Samples. \_\_\_\_\_

# Soil Sampling west & north of Camp - Contour Sampling at 2700'

## GEOCHEMICAL SAMPLING REPORT

Page 1 of 1

Project: ELK Property: AREA A Claim Group: \_\_\_\_\_ Claim: \_\_\_\_\_  
 Sampler: US-JM Traverse: EA0815 Grid: \_\_\_\_\_ Date: Aug 15, 1999  
 Date Samples Sent: \_\_\_\_\_ Date Results Received: \_\_\_\_\_ Date Plotted: \_\_\_\_\_

Sample Number	DISTANCE Line (Northing) (Easting)	ELEVATION Station (Easting) (Northing)	Horizon	Depth (cm)	Sed Type	Colour	Notes (Rock Fragment Description)
01	FROM EAS99011						
02	N/S	200N	2706		GRAVEL	GLACIOFLUVIAL DELTA	
03	N/S	250N	2706		ORGANICS	FROZEN	
04	N/S	325N	2703	A 80	INTERLAYERED	ORGANICS & PEBBLY SILT	FROZEN
05	EAS99027	415N	2706	C 90	PEBBLY SAND	PALE GREY BROWN,	WITH CLAY & COBBLES
06	EAS99028B	565N	2706	B 30	SANDY SILT	PALE ORANGE BRN,	
07	EAS99028C	565N	2706	C 110	PEBBLY SAND	PALE GRAY BRN,	C COBBLES & CLAY < 20%
08	N/S	700N	2700	A	FROZEN	ORGANICS	
09	EAS99029	735N	2700	C 70	PEBBLY SILTY SAND	PALE GREY	40cm OR ASN & ORGANICS ABOVE, FROZEN ORGANIC HORIZON BELOW
10							
11							
12	EAS99030	870N	2703	C 25	PEBBLY SAND	PALE GREY	
13					CLAY WITH	BROWN	
14					COBBLES		
15	EAS99031	1020N	2706	C 95	SANDY PEBBLY CLAY	PALE GREY BROWN	10cm ORGANICS, 70cm OF CLAY ABOVE SAMPLE,
16							
17				70			Fe OXIDE STAINING HORIZON
18	N/S	1170N	2706	A	ORGANICS	AND LAKE	SEDIMENT SILT
19		450657E	6913913N		INTERLAYERED,		FROZEN AT BOTTOM
20	EAS99032	1320N	2706	B 35	SANDY PEBBLY SILT		
21							
22				C 70	GRAVEL	PALE ORANGE BROWN	TO DEPTH OF 70cm.
23							
24	EAS99033	1510N	2700'	B 45	SANDY GRAVEL	PALE ORANGE BROWN	
25							
26				C 75	GRAVEL WITH	COBBLES	
27	N/S	1660N	2691	A	FROZEN	ORGANICS	
28	EAX99034X	450230E	6914189N	S	SILT	GREY	
29	N/S	1730	1930N	2700	A 40	ORGANICS	FROZEN
30	N/S	1880N	2700	A	ORGANICS	AND LAND SLIDE MATERIAL	
31	N/S	2030N	2706				
32	UTM OF LINE END	450147E	6914524	A	WET ORGANICS & CLAY		LARGE GRANITIC Boulders
33							
34							
35							
36							
37							
38							
39							
40							

CLOSURE Last Station before reaching Base Line \_\_\_\_\_ Distance to Base Line \_\_\_\_\_  
 Line crosses BL \_\_\_\_\_ m \_\_\_\_\_ of Station \_\_\_\_\_  
 Daily Totals Line-km \_\_\_\_\_ Number of Samples: \_\_\_\_\_

CONTOUR SOIL SAMPLING N # 1 OF OOBIND CAMP

GEOCHEMICAL SAMPLING REPORT

Page 1 of 1

Project: ELK Property: AREA A NORTH Claim Group: Claim: Sampler: Traverse: Grid: Date: AUG 16, 1999 Date Samples Sent: Date Results Received: Date Plotted:

Sample Number	DIST. Line (Northing)-(Easting)	ELEV. (Northing)	Station (Easting) (Northing)	Horizon	Depth (cm)	Sed. Type	Colour	Notes (Rock Fragment Description)
---------------	---------------------------------	------------------	------------------------------	---------	------------	-----------	--------	-----------------------------------

01	STARTED SAMPLE LINE FROM STATION 188m NORTH ON PREVIOUS							
02	DAY CONTOUR SAMPLING AT 2706' elevation.							
03	FROM THIS POINT TRAVERSED WEST (UPHILL) TO 2900' ELEVATION.							
04	STARTED LINE AT THIS POINT TRAVERSED NORTH.							
05	N/S	0	2901	A	50	GPS UTM 49938E 691399N	APPEAR TO BE	
06						FROZEN		TOO FAR WEST AND UP HILL
07	EAS99035	136	2913	B	60	SANDY PEBBLY CLAY	PALE GREY BRN	UNDERLAIN BY SILT
08								
09	EAS99036	300N	2904	C	60	U U 11	MED GRY BRN	ORGANIC RICH TO 50cm
10	EAS99037	450N	2912	B	60	PEBBLY CLAY	PALE BROWN	
11						RICH SAND		
12	EAS99038	600N	2901	B	30	SANDY PEBBLY CLAY	LIGHT RED-BROWN	DUG TO 60cm SANDY GRAVEL TO DEPTH, PALE GREY BRN
13								
14	DRY CREEK	686m						
15	N/S	750m	2901	A	50	ASH & ORGANICS		FROZEN
16	EAS99039	790	2898	C	50	SILT	GREY WITH Fe RICH HORIZONS	FROZEN BELOW 70cm
17								
18	N/S	900N	2901		100	ORGANIC-RICH SILT	GRAY	LARGE GLACIAL BAULDERS FROZEN BELOW 100cm
19								LARGE GRANODIORITE BAULDERS
20								
21								
22	EAS99040	1050	2901	B	30	PEBBLY SAND & CLAY	PALE BROWN	DUG TO 60cm
23								
24	L →	449040E	6914664					APPEARS TOO FAR WEST & TOO HIGH
25								
26								
27								
28								
29								
30								
31								
32								
33								
34								
35								
36								
37								
38								
39								
40								

CLOSURE Last Station before reaching Base Line \_\_\_\_\_ Distance to Base Line \_\_\_\_\_  
 Line crosses BL \_\_\_\_\_ m \_\_\_\_\_ of Station \_\_\_\_\_  
 Daily Totals: Line-km \_\_\_\_\_ Number of Samples \_\_\_\_\_

TRAVERSE SOUTH OF TATLMAIN CAMP, BOTH SIDES OF TATLMAIN CREEK

GEOCHEMICAL SAMPLING REPORT

Page 1 of 1

Project: EL Property: AREA "A" NORTH Claim Group: \_\_\_\_\_ Claim: \_\_\_\_\_  
 Sampler: U.S. Traverse: EA0818 Grid: \_\_\_\_\_ Date: AUG 19, 1999  
 Date Samples Sent: \_\_\_\_\_ Date Results Received: \_\_\_\_\_ Date Plotted: \_\_\_\_\_

Sample Number	Line (Northing) (Easting)	Station (Easting) (Northing)	Horizon	Depth (cm)	Sed. Type	Colour	Notes (Rock Fragment Description)
01	EA081801	449004	6918596	2406'	O/C ON EAST SIDE OF CREEK -		
02	O/C ①				FELSIC QTZO-FELDSPATHIC ORTHO GNEISS		
03	L 2?	010/20'W			PALE RED-BROWN TO BEIGE COLOUR ON		
04	/	010/20'N	MINIMAL		WEATHERED SURFACE, STRONG JOINTING, BRITTLE		
05	L 085/75 S		ALIGNMENT		DEFORMATION, MAFICS WEATHERED		
06							
07	O/C ② STARTS	448805	6917931	2421'	START OF EXPOSURE OF QTZO-FELDSPATHIC		
08					ORTHO GNEISS ON WEST SIDE, CONTINUES		
09					SOUTHWARD FROM HERE, SAME AS ABOVE		
10					LOCALLY MORE WEAK PROPYLITIC ALTERATION		
11					MINOR EPIDOTE IN DARKER BROW		
12					WEATHERING SUB HORIZONTAL ZONES		
13					± 50-80cm THICK TR. PYRITE		
14	O/C ③	2466' elev.			RED-BROWN COLOUR BANDING		
15				X	F 020°/15W 50-30cm THICK		
16					GRANITE & CARBONATE ALTERED		
17							
18	DRY CREEK						
19	150m SOUTH OF	447859	6916642	2565'	ROUNDED GRANITIC FLOAT, ORTHO GNEISS		
20					AND MINOR META-VOLCANICS		
21							
22	2ND CREEK	447954	6916166		NO FLOAT, TOO SWAMPY		
23							
24	O/C ④				E 030/68W - pale brown weathering orthogneiss		
25							
26	O/C ⑤ elev	2640	O/C of		unaltered and undeformed list-qtzo-feldspathic		
27	EA081802 II	448936	6917537	2652'	gneiss, pale grey colour minor olive		
28					green accessory mineral (epidote?)		
29					med to fine grained. mineral elongation		
30					→ 050°/20°		
31							
32	O/C ⑥	448921	6918037	2445'	dark green porphyroblastic		
33	EA081803				(chloritized Hbl?) mafic volcanic		
34					weakly calcareous, chloritic		
35					with minor epidote.		
36					appears to have primary banding		
37							
38					X F 00/25E		
39							
40							

CLOSURE Last Station before reaching Base Line \_\_\_\_\_ Distance to Base Line: \_\_\_\_\_  
 Line crosses BL \_\_\_\_\_ m \_\_\_\_\_ of Station \_\_\_\_\_  
 Daily Totals: Line-km \_\_\_\_\_ Number of Samples \_\_\_\_\_

# GEOCHEMICAL SAMPLING REPORT

Page \_\_\_\_ of \_\_\_\_

Project: ELK Property: TATLMAN CK Claim Group: \_\_\_\_\_ Claim: \_\_\_\_\_  
 Sampler: U.S. - J.M. Traverse: EA 08/19 Grid: \_\_\_\_\_ Date: AUG 19, 1999  
 Date Samples Sent: \_\_\_\_\_ Date Results Received: \_\_\_\_\_ Date Plotted: \_\_\_\_\_

Sample Number	Line (Northing) (Easting)	Station (Easting) (Northing)	Horizon	Depth (cm)	Sed. Type	Colour	Notes (Rock Fragment Description)
01	ATP	449493	6920602	2350'	CROSSED CREEK, NO WATER, OR FLOAT		
02							
03	ATP	451029	6922066	2439'	DRY CREEK LOTS OF ROUND FLOAT		
04					MEGACRYSTIC K-FELDSP. GNEISS, QTZ-MONZONITE		
05							
06	O/C ①	452010	692286	2658'	PINK GREY, MED GRAINED BIOT-QTZO-Feldsp-GNEISS		
07					$\frac{1}{2}$ 163/10E		
08					O/C CONTINUES ALONG SIDE HILL		
09							
10	O/C ②			2730'	MEGACRYSTIC K-FELDSP. AUGEN GNEISS		
11					GRADATIONAL CONTACT WITH MED GRAINED		
12					BIOT-QTZO-FELDSP ORTHO GNEISS		
13					- AUGEN GNEISS AND MED GRAINED		
14					ORTHO GNEISS CUT BY CM SCALE		
15					APLITIC BANDS, PARALLELS AND X-CUTTING		
16					FOLIATION		
17							
18							
19					WHITE CRYSTALLINE MARBLE BOULDERS		
20					IN NORTHERN TRIBUTARY		
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							

CLOSURE Last Station before reaching Base Line \_\_\_\_\_ Distance to Base Line \_\_\_\_\_  
 Line crosses BL \_\_\_\_\_ m \_\_\_\_\_ of Station \_\_\_\_\_  
 Daily Totals. Line-km \_\_\_\_\_ Number of Samples. \_\_\_\_\_

Prospecting east of camp (Tatman Ch.)

GEOCHEMICAL SAMPLING REPORT

Project: ELK Property: AREA A NORTH Claim Group: \_\_\_\_\_ Claim: \_\_\_\_\_  
 Sampler: US-JM Traverse: EA0820 Grid: \_\_\_\_\_ Date: Aug 20, 1999  
 Date Samples Sent: \_\_\_\_\_ Date Results Received: \_\_\_\_\_ Date Plotted: \_\_\_\_\_

Sample Number	Line (Northing) (Easting)	Station (Easting) (Northing)	Horizon	Depth (cm)	Sed Type	Colour	Notes (Rock Fragment Description)
01	EA99082001	area ④			ROCK FLOAT	Pale grey siliciclastic, possible hornfels hairline fractures, mineralized with dark brown minerals, also pyrite	
02							west side of lake bed
03							south of area ③
04							
05							
06	① SUB-O/C	44929	6919505				meta-vol? med. green porphyroblastic amphibolitic diorite diorite, epidote alteration and calcite segregation
07							
08							$\approx \nearrow 120/45^{\circ}E$
09	EA082001						
10							
11	②	$\nearrow 130/SONE$	$\nearrow 150/55NE$				Hbl-feldspar porphyry, 10 m wide dike chloritized
12	EA082002						
13							$\swarrow 070/50S, 320/70E, 170/65W$
14							
15	③ O/C	450538	6919033				2622' also west side of lake $\nearrow 140/50E$ pale olive green, meta-volcanic, epidote in matrix
16							
17							
18							
19	⑤	$\nearrow 180/40E$					med to dark green porphyroblastic meta-volcanics as above, large o/c's at west side of hill $\nearrow 170/60E$
20							
21							
22							
23	⑥ SUB O/C	451080	6917345				2870' hist- $\sigma_{T20}$ -feldspathic gneiss Caution TRAIN very large boulders in clusters, must be sub-o/c
24							
25							
26							
27	⑦	450087	6918933				2856' - SUB O/C of hist- $\sigma_{T20}$ -feldspathic gneiss
28							
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							

CLOSURE Last Station before reaching Base Line \_\_\_\_\_ Distance to Base Line \_\_\_\_\_  
 Line crosses BL \_\_\_\_\_ m \_\_\_\_\_ of Station \_\_\_\_\_  
 Daily Totals Line-km \_\_\_\_\_ Number of Samples \_\_\_\_\_

LINE 50+00N			
STATION (E)	INPHASE	QUADRATURE	
5000	-5	-9	
5025	-13	-10	
5050	-10	-8	
5075	-7	-7	
5100	-8	-7	
5125	-5	-5	
5150	-6	-4	
5175	-7	-3	
5200	-9	-1	
5225	-10	-3	
5250	-13	-4	
5275	-12	-2	
5300	-12	-3	
5325	-7	-3	
5350	-7	-4	
5375	-5	-6	
5400	0	-2	
5425	2	-2	
5450	2	-2	
5475	0	-1	
5500	3	-2	
5525	0	-3	
5550	0	-2	
5575	2	-1	
5600	0	0	
5625	0	0	
5650	0	0	
5675	0	0	
5700	0	0	
5725	0	0	
5750	0	0	
5775	-1	0	
5800	0	2	
5825	0	0	
5850	0	0	
5875	0	0	
5900	-2	0	
5925	0	0	
5950	0	0	
5975	0	2	
6000	0	0	
6025	0	0	
6050	0	0	
6075	0	2	
6100	0	0	
6125	0	0	
6150	0	1	
6175	0	0	
6200	0	0	
6225	0	0	
6250	0	0	
6275	0	0	
6300	0	0	

## **Target B, Needlerock Creek NTS 105L/5&6 (Fig 6)**

On August 21, the crew moved camp to Needlerock Creek area, located approximately 50 km northeast of Carmacks. Prospecting and sampling were carried out until August 25. On August 26 the crew left the field for Whitehorse to attend to a serious hand injury suffered by field assistant Jason McLaughlin. The writer and field assistant Chris Eakin returned on September 1 to move camp and continue prospecting in the northern half of the map area, until September 5.

A total of 10 rock, 5 soil, 1 stream sediment, 3 panning concentrates and 4 water samples were collected during the period. Two survey lines of VLF-EM, totaling 3.7 km were also completed.

The map area is underlain, primarily by two units. Metamorphosed volcanic and sedimentary rocks, belonging to the Yukon-Tanana Terrane, intermittently crop out at lower elevations on the west side of Needlerock Creek valley. Mesozoic? hornblende granodiorite orthogneiss crops out at higher elevations, in the southeast map area. The metamorphic rocks of the YTT can be subdivided into three lithologies. The most common is a medium to dark green, meta-volcanic, chloritic, amphibolitic schist. The second most common, a white to grey marble unit, is found locally, southeast of Ess Lake. The third is a mica-rich siliciclastic unit which crops out on the southwest facing slope of an isolated hill, south of Ess Lake. This quartz-muscovite-biotite schist is locally garnetiferous, contains rare green micas and may have a volcanoclastic component, based on some observed textures. The stratigraphic relationships of these units is unknown.

The metavolcanic rocks of the Yukon-Tanana Terrane were the primary prospecting targets. Target selection was based on recent publications (Colpron, 1999 a,b), and the writer's previous experience in this area and Finlayson Lake area.

Prospecting in a canyon, south of the first fly camp revealed that the chloritic amphibolite schists are structurally overlain by the hornblende orthogneiss. The contact strikes variably from east-northeast to north-northeast and dip northwesterly from 65 to 30 degrees respectively. The

contact between schist and gneiss is sharp, but plastically deformed in some outcrops (photo 1). The units are also interbanded near the contact, with parallel foliations (photo 2). Structurally below the contact, chloritic amphibolite schists are cut by cm scale quartzofeldspathic dykes and sills at intervals of several metres. These dykes and sills are also deformed and may be associated with the orthogneiss (photo 3).

No mineralization was observed in outcrop in the map area. However several mineralized boulders of creek float were found in the southern project area. Quartz-muscovite-biotite schist boulders, with a quartz content of 60 to 70% and less than 5% very fine grained, disseminated pyrite and chalcopyrite, were found in several locations along the creek. One sample of this material (EBR99082201) returned 1,005 ppm copper and 29.1 ppb gold by ICP geochemical analysis. A darker variety of muscovite schist, with disseminated pyrite, contained 9 ppm Mo and 92 ppm Cu. The muscovite schist boulders are sub-angular and their distribution suggests a possible nearby bedrock source.

A rounded boulder of skarn was found at an elevation of 2796 feet in the same drainage (photo 4). The boulder contains 10-20% sulphide, including pyrrhotite, pyrite and some chalcopyrite. A geochemical analysis of boulder fragments (EBR9999082202) reported 2,372 ppm Cu, 102 ppm Zn, 1.2 ppm Ag and 19.16 ppb Au. This boulder was probably transported by glaciers from an unknown source.

Two creek panning samples in this drainage contained 0.8 and 1.5 ppb Au. A third panning concentrate, collected in a creek located 1.5 km to the east, returned 8,019.9 ppb Au. A silt sample taken at the same location (EBX99041) returned only 1.1 ppb Au. Only a preliminary examination of the creek float was carried out at the time of sampling.

A systematic till sampling program was contemplated in the northern map area, but abandoned after several attempts were made to penetrate the deep glacial lake sediments that cover much of the area. Six soil samples were taken in selected areas for various reasons. Of these, a sample of organic-rich sediments from a dry pond (EBSW187) contained elevated concentrations



Photo 1



Photo 2

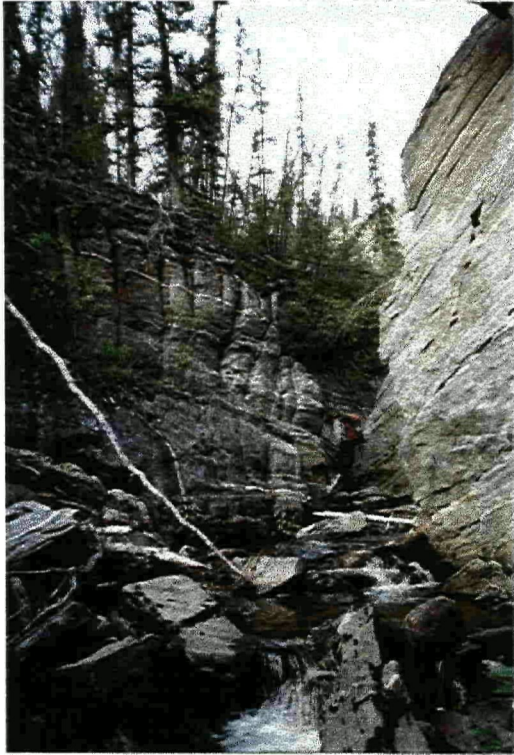


Photo 3

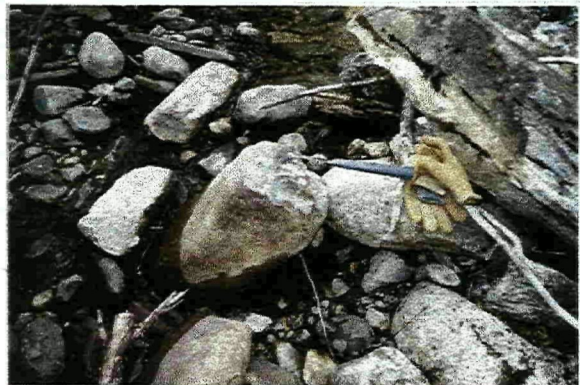


Photo 4

molybdenum and arsenic. Sample EBSW198, a sample of rusty talus fines returned 122.5 ppb Au. This sample was collected below outcrops of pale green muscovite-quartz schist, located outside the project area.

Four water samples were collected and pH measurements taken in a number of small ponds. The pH readings were all alkaline to highly alkaline and the water sample analyses are inconclusive because there are too few to define trends.

#### VLF-EM Survey.

Much of the northern map area is flat, low-lying swampy terrain which hinders conventional prospecting or geochemical methods. A VLF-EM survey was conducted in the area in an attempt to detect conductors at the siliciclastic and metavolcanic amphibolite schist contact of the YTT. Two lines, totaling 3.7 km were run in a southerly direction, across this inferred contact. The survey data is plotted as an insert on Fig. 6. A preliminary evaluation of the survey, based on field observations, is that the greater response obtained on the eastern line is due to swamps and streams.

**Needlerock Creek Area  
Traverse Reports**

Prospecting traverse 2 km south of camp

GEOCHEMICAL SAMPLING REPORT

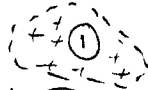
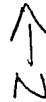
Page \_\_\_\_ of \_\_\_\_

Project: ELK Property: AREA B WEST Claim Group: \_\_\_\_\_ Claim: \_\_\_\_\_  
 Sampler: U.S. - J.M. Traverse: \_\_\_\_\_ Grid: \_\_\_\_\_ Date: AUG 22, 1999  
 Date Samples Sent: \_\_\_\_\_ Date Results Received: \_\_\_\_\_ Date Plotted: \_\_\_\_\_


Sample Number	Line (Northing) (Easting)	Station (Easting) (Northing)	Horizon	Depth (cm)	Sed. Type	Colour	Notes (Rock Fragment Description)
01	EAP9901	Δ ELEN	2736'		PAN CONC	GREY	1 SCREENED PAN
02							BLACK MAGNETIC FRACTION
03	EAP9902	Δ ELEN 2895'			PAN CONC	GREY	1 SCREENED PAN
04	W173	471379E	691699Z				BLACK MAGNETIC TAIL
05							
06	① o/c	471459	691792Z	EL 2715'	O/C AND TRAILS OF HBL - QTZ - FELDSPATIC		GNEISS, RARE QTZ SEGREGATIONS UNIFORM TEXTURE AND COMPOSITION
07							
08							
09							
10	o/c ②	471916	6917338	EL 2886'	biot-qtz-feld gneiss		± 070/GENW
11	SEA OVER						
12	o/c ③	471838	6917143	EL 2745'	Med → dark green chloritized amphibolitic		Schist 1074/GENW med to dark green biot-chlorite schist minor epidote Biotite
13	W171						
14							
15							
16	④ FLAT	ELEV 2750'			qtz-muscovite + chlorite schist with disseminated		py & chalcopyrite < 5% total sulphide.
17	EBR99082201						
18	1005 Cu	29.1 ppb Au					Co - 70% qtz
19							
20	⑥ o/c						Canyon o/c exposed to dark green
21							chloritized amphibolitic schist cut by
22		2% vfg py dias					10 to 20 cm qtz-feldspar dykes and veins
23							all plastically deformed - fault on
24							south side of creek ± 025/30W
25	⑦ float	2793'					- rusty weathering qtz-muscovite schist,
26	EBR99082203						dark grey, disseminated py and brown
27	9 mo 92 Cu - 5 Au						lustrous mineral, hard to tell whether
28							a mica or sphalerite? < 5% vfg dias py.
29							
30	⑧	2796'					2' x 1' x 1' Mass - leonards with about
31	W172	471654	6917180				10 - 20% sulphides, mainly <sup>pyrr</sup> pyrite with
32	EBR99082202						Some epy, Garnet - amphibole py, pyrr
33	2372 Cu, 102 Zn 1.2 Ag 19 - 6 Au						epy, long acicular sils - seen on
34							weathered surface.
35							- rusty weathering med green, med green amphibole
36							green? & black amphiboles
37	⑤ FLAT						
38							RUSTY WEATHERING Black QTZ - MUSC - BIOT - QTZ
39	EBR99082204						SCHIST COARSE & Fg py disseminated ± 5%
40	> 1 Mo 94 Cu - 2 ppb Au						


CLOSURE Last Station before reaching Base Line \_\_\_\_\_ Distance to Base Line \_\_\_\_\_  
 Line crosses BL \_\_\_\_\_ m \_\_\_\_\_ of Station \_\_\_\_\_  
 Daily Totals: Line-km \_\_\_\_\_ Number of Samples \_\_\_\_\_

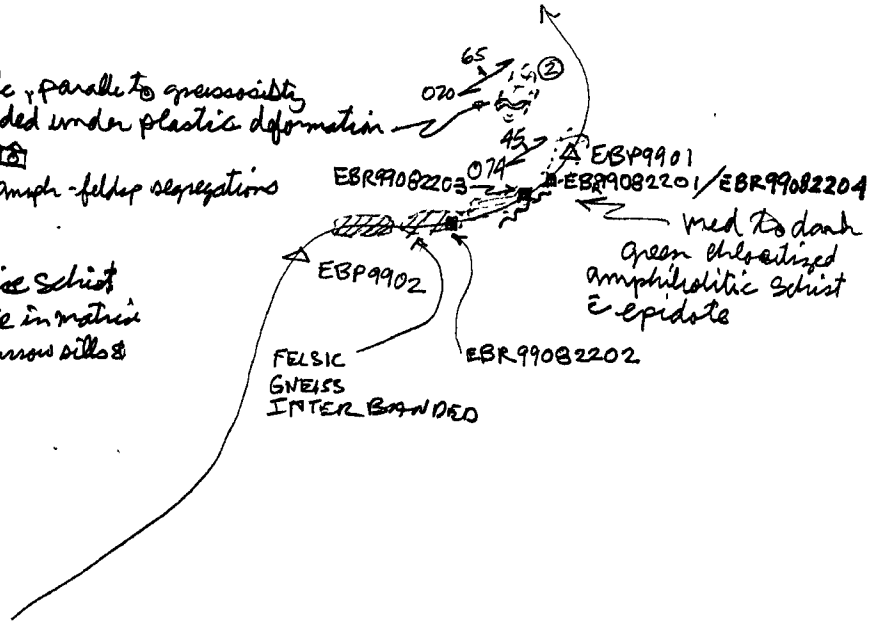
# SKETCH



hbl - qtz - feldsp. gneiss  
meta-granodiorite

mafic meta-volc. parallel to gneissosity  
and completely folded under plastic deformation  
conditions.   
including garnet-amph-feldsp segregations

 META VOLCANICS  
Mafic metamolcanics  
med to dark green Amphibolitic Schist  
chloritized amphiboles, epidote in matrix  
cutting plastically deformed narrow sills &  
dykes - (qtz-feldspathic)



- EBR99082201 FLOAT  
■ Silvery weathering quartz muscovite schist,  
disseminated by py & cpy ~ 5%
- EBR99082203 FLOAT  
RUSTY WEATHERING DARK GREY TO BLACK, PYRITIC  
QUARTZ - MUSCOVITE SCHIST
- EBR99082202 FLOAT (MAY BE GLACIAL FRAGMENT)  
BOULDER OF MED TO DARK GREEN GARNET-AMPH SKANN  
20% SULPHIDE PY, PYR, CPY
- EBR99082204 FLOAT, DARK GREY → BLACK, RUSTY WEATHERING  
QTZ - MUSC - BIOT SCHIST DISS. FG - PY ~ 5%

GEOCHEMICAL SAMPLING REPORT

Project: ELK Property: AREA B WEST Claim Group: \_\_\_\_\_ Claim: \_\_\_\_\_  
 Sampler: US Traverse: EB082A Grid: \_\_\_\_\_ Date: AUG 24, 1999  
 Date Samples Sent: \_\_\_\_\_ Date Results Received: \_\_\_\_\_ Date Plotted: \_\_\_\_\_

Sample Number	Line (Northing) (Easting)	Station (Easting) (Northing)	Horizon	Depth (cm)	Sed. Type	Colour	Notes (Rock Fragment Description)
01			R		ROCK		RUSTY WEATHERING DARK GREY
02							QUARTZ-SERIOLITE SCHIST, SULPHIDE
03							Box work
04							
05	EBW9901 0	473213	6923958	W	WATER	CLEAR	pH 7.3
06							
07	EBR99082402			R			Pale beige with light brown spots after oxidized sulphides? qtz-sericite schist, "meta quartzite"? very high silica content 90%, f.g. muscovite or sericite <5%
08							
09							
10							
11							
12	EBR99082403			R			Rusty weathering qtz-sericite schist like above, more orange-brown oxides after diss. sulphides and dark brown to black Fe Mn irregular staining on fractures.
13							
14							
15							
16							
17							
18	EBR99082404			R			Pale grey green qtz-muscovite biot- chlorite (pale green) schist, mottled texture, patches of orange brown oxide irregular sub-cm scale patches, suggesting fragments (pale brown colour) "acid volcanic fragments?" qtz 70 → 80%
19							
20							
21							
22							
23							
24							
25							
26	EBR99082405	FLOAT		R			Silvery qtz-muscovite-biot-garnet- fuchsite? (mica) schist qtz 70 → 80% med brown garnets 2-3mm
27							
28							
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							

CLOSURE Last Station before reaching Base Line: \_\_\_\_\_ Distance to Base Line: \_\_\_\_\_  
 Line crosses BL \_\_\_\_\_ m \_\_\_\_\_ of Station \_\_\_\_\_  
 Daily Totals: Line-km \_\_\_\_\_ Number of Samples \_\_\_\_\_

Prospect near anomalous R.G.S Sample 3332 Cu, Hg.

GEOCHEMICAL SAMPLING REPORT

Page \_\_\_\_ of \_\_\_\_

Project: ELK Property: AREA "B" WEST Claim Group: \_\_\_\_\_ Claim: \_\_\_\_\_  
 Sampler: US-JM Traverse: \_\_\_\_\_ Grid: \_\_\_\_\_ Date: AUG 25, 1999  
 Date Samples Sent: \_\_\_\_\_ Date Results Received: \_\_\_\_\_ Date Plotted: \_\_\_\_\_

Sample Number	Line (Northing) (Easting)	Station (Easting) (Northing)	Horizon	Depth (cm)	Sed. Type	Colour	Notes (Rock Fragment Description)
01	From camp 2.46 km @		136° Az.				
02							
03	(WPT 3332) 473525	6917050					
04							
05	① W183 472503	6918349	R				0/c of dark green amphibolitic - mica schist & list chlorite?
06							highly variable composition grades to
07							qtz - musc - schist. qtz remaining parallel
08	≠ 180/90						to foliation, minor qty - musc - garnet
09							Schist 5x10m in size    to foliation
10							
11							
12	ATP due South at elev	2600'					dark green hbl - list - musc
13							gneiss with felsic interbands
14	≠ 180/90						vfg dis. py < 20% to epy
15							
16	ATP elev 2600'	Target creek,					flowing water, lots of fines.
17							
18	EBX99041 X		S		SILT		fine silt.
19	E1P9903A		P		PANNING CONC		grey fines with magnetic tail
20							
21							
22							
23							
24							
25							
26							
27							
28							
29							
30							
31							
32							
33							
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35							
36							
37							
38							
39							
40							

CLOSURE Last Station before reaching Base Line \_\_\_\_\_ Distance to Base Line \_\_\_\_\_  
 Line crosses BL \_\_\_\_\_ m \_\_\_\_\_ of Station \_\_\_\_\_  
 Daily Totals. Line-km \_\_\_\_\_ Number of Samples \_\_\_\_\_

7 ↓

GEOCHEMICAL SAMPLING REPORT

Project: ELK Property: AREA "B" Claim Group: \_\_\_\_\_ Claim: \_\_\_\_\_  
 Sampler: US - CE Traverse: \_\_\_\_\_ Grid: \_\_\_\_\_ Date: SEPT 02, 1999  
 Date Samples Sent: \_\_\_\_\_ Date Results Received: \_\_\_\_\_ Date Plotted: \_\_\_\_\_

Sample Number	Line (Northing) (Easting)	Station (Easting) (Northing)	Horizon	Depth (cm)  (ELEV (FT))	Sed. Type	Colour	Notes (Rock Fragment Description)
01	① W185	473787	6924684	2942			o/c mafic meta-volcanics, amphibolite - dark green amphibolite cut by deformed qtz-feldspar bands, widely spaced
02							
03							
04							
05	②						1/ 160/150 w felsic and mafic bands 25m west of ①, dips reverse over 10m of strike length
06							
07							
08							
09	③			2535			o/c coarse amphibolite with deformed quartzo-feldspathic bands
10							
11							
12	0 EBW9902	473041	6924616	2379			small pond 50x100m pH 7.4
13	W186						
14							
15	• W187	472305	6924691	2406			soil, dried up lake sediment organic rich
16							
17							
18	④ W188	471727	6925111	2553			o/c beige coloured marble, pale grey on weathered surface
19							
20	⑤						o/c? brown weathering marble
21	⑥						o/c 5x10m, med. grained amphibolite 1/ 175/26w, cut by narrow qtz-feldspar veins
22							
23							
24	⑦			2505			o/c coarse amphibolite 1/ 140/30w
25							
26	⑧ W190	473068E	6926194N	2613			small o/c of amphibolitic rocks, fine grained amphibolites with biotite, interbedded with coarse feldspar amphibolites 1/ 170/30w
27							
28							
29							
30							
31	⑨						Small o/c same as above 150m SE
32							
33	⑩						Small o/c same as above
34							
35	⑫ W191	473201	6925739	2580			10 small o/c's in 10x20m area med green amphibolite
36							
37							
38	⑬ W192	473363	6925903	2595			o/c? siliceous gneiss with 1x10cm lenticles 1/ 170/40E
39							
40							

CLOSURE Last Station before reaching Base Line \_\_\_\_\_ Distance to Base Line \_\_\_\_\_  
 Line crosses BL \_\_\_\_\_ m \_\_\_\_\_ of Station \_\_\_\_\_  
 Daily Totals Line-km \_\_\_\_\_ Number of Samples \_\_\_\_\_

NEEDLE ROCK CR.

GEOCHEMICAL SAMPLING REPORT

Page 1 of 1

Project: ELK Property: AREA "B" Claim Group: \_\_\_\_\_ Claim: \_\_\_\_\_  
 Sampler: US-CV2 Traverse: \_\_\_\_\_ Grid: \_\_\_\_\_ Date: SEPT 3, 1999  
 Date Samples Sent: \_\_\_\_\_ Date Results Received: \_\_\_\_\_ Date Plotted: \_\_\_\_\_

Sample Number	Line (Northing) (Easting)	Station (Easting) (Northing)	Horizon	Depth (cm)	Soil Type	Colour	Notes (Rock Fragment Description)
01							①
02							dk. blue-green amphibolite cut by
03							deformed qtz-feldspathic bands
04							± 130/55 SW
05	W196	472802	6928824	2331			small pond pH 8.9
06							
07	W197	472663	6930354	2298			10m diameter pond pH 9.3
08							
09							③
10							siliceous, calcareous muscovite schist
11							± 060/60 NW
12	W198	472635	6930457				red weathering soil.
13							- pale green musc. - qtz schist, narrow
14							argillaceous bands, quartz bands
15							- dark brown weathering matrix
16							
17							
18							
19							
20							
21							
22							
23							
24							
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39							
40							

CLOSURE Last Station before reaching Base Line: \_\_\_\_\_ Distance to Base Line: \_\_\_\_\_  
 Line crosses BL \_\_\_\_\_ m \_\_\_\_\_ of Station \_\_\_\_\_  
 Daily Totals. Line-km \_\_\_\_\_ Number of Samples: \_\_\_\_\_

TRAVERSED NORTH OF CAMP, PROSPECTING & SAMPLING

GEOCHEMICAL SAMPLING REPORT

Project: ELK Property: AREA "B" Claim Group: \_\_\_\_\_ Claim: \_\_\_\_\_  
 Sampler: US-CE Traverse: \_\_\_\_\_ Grid: \_\_\_\_\_ Date: SEPT. 04, 1999  
 Date Samples Sent: \_\_\_\_\_ Date Results Received: \_\_\_\_\_ Date Plotted: \_\_\_\_\_

Sample Number	Line (Northing) (Easting)	ZONE 08 Station (Easting) (Northing)	Horizon	Depth (cm)	Sed Type	Colour	Notes (Rock Fragment Description)
01	EB399042	474474	6925029	C	GO	PEBBLY SILT	PALE GRAY GREEN FLUVIAL & LAKE? SEDIMENTS
02	(W 201)						
03	N @ 010 #2						
04	150m N	N/S				Deep lake sediments	
05							
06	W 202	474576	6925189	C	N/S	100 cm of lake sediments, silt	
07							
08	EBW9903	474455	6925645				Pond at 2412' elev. o/c on west side of mafic meta-volcanic rocks, amphibolite $\Sigma$ K10/60SW N end $\Sigma$ 010/30W
09	(W 203)						
10							
11							
12	EBR990401	"	"	R			rusty shear zone with qtz veins cutting amphibolite + Ant. vertical late, brittle deformation
13							
14							
15	POND TO THE WEST						
16	White coating on dried area of pond, sampled. inflow						
17	EBW9904						pH 7.5 water sample
18							
19	traversed west to start contour soil sampling.						
20	W 206	473710E	6925727	N/S			> 1m deep silt lake sediment 2500' elevation
21							
22	moved west (uphill to 2550' elevation) near top of ridge						
23							
24	EB399043			C	100	pebbly sand	pale brown - cobble of qtz, mica actual
25	W 206	473770	6925727				
26							
27	EB399044	BELOW	W185	B	20	silt	red brown silt and alluvium below amphibolite o/c
28	W185	473787	6924684				2397' elev.
29							
30							
31							
32							
33							
34							
35							
36							
37							
38							
39							
40							

CLOSURE Last Station before reaching Base Line. \_\_\_\_\_ Distance to Base Line \_\_\_\_\_  
 Line crosses BL \_\_\_\_\_ m \_\_\_\_\_ of Station \_\_\_\_\_  
 Daily Totals Line-km \_\_\_\_\_ Number of Samples. \_\_\_\_\_

L100+00E			L98+00E	
STATION (N)	INPHASE	QUADR.	INPHASE	QUADR.
10000	5	10		
9975	10	9		
9950	10	2		
9925	9	1		
9900	7	0	-2	2
9875	6	1	-2	2
9850	10	3	0	1
9825	13	2	5	1
9800	9	1	2	1
9775	0	0	-5	1
9750	2	2	-4	1.5
9725	0	1	-1	1
9700	0	1	-1	1
9675	2	1	1	0
9650	10	3	6	-2
9625	10	2	14	-2
9600	6	2	13	-1.5
9575	5	0.5	11	-1
9550	-5	-1	10	1
9525	-6	-3	5	-1
9500	-6	-3	2	-1
9475	0	1	4	-1
9450	0	0	6	-1
9425	0	0	7	0
9400	0	-1	6	-1
9375	5	1	6	0
9350	4	2	6	0.5
9325	2	1	5	0
9300	0	1	3	0
9275	-1	0	2	0
9250	3	0	0	2
9225	8	1	2	0.5
9200	7	1	1	0.5
9175	2	0	1	0.5
9150	4	-1	0	1
9125	-6	-1	1	1
9100	0	1	1	1
9075	5	1	1	1
9050	12	0	1	1
9025	13	0	1	1
9000	8	-1	0	1
8975	5	-1	0	1
8950	3	-0.5	0	0.5
8925	3	0	-1	1
8900	1	0	-2	1
8875	0	1	-1	1
8850	0	0	0	1.5
8825	-1	0.5	0	1
8800	0	0.5	-1	1
8775	0	0	-1	0
8750	0	0	-1	0
8725	0	1	1	1
8700	0	1.5	-2	1

8675	0	0.5		
8650	-1	0.5		
8625	-4	2		
8600	-2	1		
8575	-3	1		
8550	-4	1		
8525	-3	1		
8500	-2	2		
8475	-2	2		
8450	-2	2		
8425	-3	2		
8400	-3	1		
8375	-7	0		
8350	-7	0		
8325	-4	0		
8300	0	1		
8275	1	1		
8250	1	0.5		
8225	2	0.5		
8200	1	0		
8175	1	0		
8150	0	0		
8125	0	1		
8100	0	1		
8075	1	0.5		
8050	0	0		
8025	-3	0		
8000	-2	1.5		
7975	-1	0		
7950	0	1		
7925	0	1		
7900	-2	0.5		
7875	0	0.5		
7850	1	1		
7825	1	0		
7800	0	1		
7775	0	1		
7750	2	1		
7725	0	1		
7700	0	1		
7675	0	0		
7650	0	1		
7625	-1	1.5		
7600	-3	1		
7575	0	0		
7550	0	1.5		
7525	5	1		
7500	4	0		

#### **4. CONCLUSIONS**

The Elk project prospecting program tested a combination of conventional prospecting, stream panning and till geochemistry in an area with poor bedrock exposure due to difficult terrain and extensive, deep overburden. Till sampling was successfully carried out in one target area but sample sites were often limited by deep glaciofluvial and glaciolacustrine sediments which blanket much of the area.

Stream prospecting was also less effective than anticipated. This was primarily due to subdued local relief and a lack of water. Stream prospecting leaves large gaps in the sample coverage. However, the best mineralization found during the program, was found by creek prospecting. The highest grade sample of copper mineralization was from a skarn boulder which may be a glacial erratic. This boulder contains 2,372 ppm Cu, 102 ppm Zn, 1.2 ppm Ag and 19.16 ppb Au. Copper-bearing quartz-muscovite-biotite schist boulders were also found within this drainage. One sample of this material returned 1,005 ppm copper and 29.1 ppb gold.

The most promising anomaly found during the program, is a panning concentrate, which contains 8,019.9 ppb Au. This sample site is located only 1.5 km from the creek with the copper mineralization.

#### **5. RECOMMENDATIONS**

More prospecting, mapping and sampling are recommended in the vicinity the anomalous gold panning anomaly, on the west side of Needlerock Creek. Weak geochemical anomalies are also outlined by Open File 1961, on the east side of Needlerock Creek. An examination of this area is also recommended.

## 6. Bibliography and References

Campbell, R.B. (1966): Geology, Glenlyon, Y.T., G.S.C. Map 1221 A 1:253,440 scale

Colpron, M., (1999a): Glenlyon project: Preliminary stratigraphy and structure of Yukon-Tanana Terrane, Little Kalzas Lake area, central Yukon (105L/13). In: Yukon Exploration and Geology 1998, C.F. Roots and D.S. Emond (eds.), Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 63-71.

Colpron, M., (1999b): A new mineral occurrence in Yukon-Tanana Terrane near Little Salmon Lake (105/L2), central Yukon. In: Yukon Exploration and Geology 1998, C.F. Roots and D.S. Emond (eds.), Exploration and Geological Services Division, Yukon, Indian and Northern Affairs Canada, p. 255-258.

Ward, B.C. and Jackson, L.E. Jr. (1993): Surficial geology, Afe Creek, Yukon T., G.S C. Map 1788A, 1:100,000 scale.

## 7. Statement of Expenditure

1.	Transportation	
	Air Charter	4,706.93
	Truck	
	Fuel	561.65
2.	Assay & Analysis	1,285.77
3	Field Supplies	1,102.20
4	Travel and Meals	245.30
5	Wages	3,100.00
	WCB	382.50
6.	Communication	95.00
7.	Publications & Maps	111.58
8.	Reproduction	105.20
	<b>Total Expenses</b>	<b>\$11,758.96</b>

## Appendix A

### CERTIFICATES OF ANALYSIS

GEOCHEMICAL ANALYSIS CERTIFICATE

Schmidt, Uwe PROJECT ELK File # 9904525

656 Foresthill Place, Port Moody BC V3H 3A1 Submitted by: Uwe Schmidt



SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppb	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppb	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Tl %	B ppm	Al %	Na %	K %	W ppm	Tl ppm	Hg ppb	Se ppm	Te ppm	Ga ppm	S %																					
EAS 99011	70	25	64	6	79	33	8	24	20	3	7	8	293	2	08	7	1	7	4	2	4	1	28	9	11	77	14	62	42	067	15	7	25	2	43	168	8	082	2	1	09	016	06	2	07	35	5	02	3	8	<	01					
EAS 99012	64	24	71	8	43	34	1	31	19	6	8	8	213	2	26	6	3	1	1	2	2	4	3	30	2	14	65	16	60	46	025	14	9	29	2	42	236	6	099	1	1	24	016	08	3	08	42	5	04	4	5	<	01				
EAS 99013	58	21	06	8	60	37	4	73	21	5	9	6	284	2	28	7	1	2	1	1	6	3	1	55	5	21	66	15	57	67	060	12	2	25	7	51	242	5	081	3	1	16	017	11	3	08	21	7	04	4	0	<	01				
EAS 99014	70	30	76	8	11	47	7	73	23	4	10	0	340	2	36	6	7	1	4	4	3	5	0	91	7	22	81	12	63	1	65	096	15	8	30	4	65	164	7	089	2	1	05	019	11	2	13	64	5	05	3	9	<	01			
EAS 99016	86	64	57	7	10	51	7	24	29	6	17	5	534	3	20	6	8	8	4	9	5	3	33	1	11	56	10	97	65	072	13	1	44	3	1	21	218	5	104	1	1	63	016	25	2	17	29	5	04	4	8	<	01				
EAS 99017	54	38	86	7	76	37	2	38	27	1	12	0	434	2	47	7	8	6	4	1	4	3	30	6	13	62	11	72	55	070	12	8	49	7	68	270	8	091	1	1	30	016	05	2	05	50	5	02	4	1	<	01					
EAS 99018	56	45	00	6	34	34	9	64	24	9	10	6	341	2	49	7	3	4	4	4	3	4	36	5	15	70	07	76	68	080	15	0	43	9	65	202	7	085	2	1	01	016	07	2	07	75	2	04	3	4	<	01					
EAS 99019	38	99	18	3	81	36	9	27	49	8	21	4	435	3	19	6	1	.5	28	2	2	0	40	0	05	53	04	102	78	112	7	5	142	2	1	72	413	1	140	1	1	77	021	48	2	10	48	6	04	4	9	<	01				
EAS 99020	59	54	43	5	02	44	3	60	38	8	17	6	519	2	80	6	7	6	4	7	2	5	98	4	19	70	12	79	3	67	090	8	2	78	0	1	11	214	6	114	2	1	15	023	17	2	13	70	4	20	3	8	<	01			
EAS 99021	60	44	52	6	15	34	1	87	22	5	10	1	416	2	07	6	3	8	4	7	2	4	144	7	31	84	09	58	5	72	095	8	9	29	3	69	237	1	085	2	84	022	09	2	09	124	6	07	3	0	<	01					
EAS 99022	59	30	50	5	42	33	9	68	22	7	9	8	410	2	23	6	4	8	4	1	2	7	48	2	10	62	10	69	83	089	11	5	36	8	60	156	1	083	2	93	019	07	<	2	09	74	6	04	3	1	<	01					
EAS 99027	66	21	14	6	08	46	2	68	19	2	8	2	297	2	29	7	0	8	3	6	4	7	40	9	14	69	09	65	59	104	12	1	28	9	53	118	8	087	2	95	018	09	<	2	12	40	4	03	3	7	<	01					
EAS 99028B	80	24	91	5	33	29	8	7	21	5	8	7	195	2	47	7	4	4	1	9	3	0	26	8	01	62	17	76	30	018	6	0	34	7	47	136	7	075	1	1	42	011	05	<	2	12	21	2	37	4	5	<	01				
EAS 99028C	70	43	39	6	52	49	6	77	25	4	11	1	426	2	67	21	9	7	3	8	5	9	57	2	18	84	12	76	1	24	107	22	0	36	8	71	169	5	105	2	1	05	020	11	<	2	14	73	2	08	4	0	<	01			
EAS 99029	60	37	72	6	15	42	3	92	23	2	9	7	296	2	08	6	2	1	3	4	4	3	9	46	9	21	63	13	56	79	085	17	6	27	3	52	188	2	072	2	1	05	016	06	2	08	77	.6	04	3	7	<	01				
EAS 99030	62	31	32	5	26	44	8	67	23	1	8	7	308	2	21	6	5	7	18	1	4	4	37	3	14	65	10	60	.60	088	15	8	28	2	52	151	8	082	2	1	01	017	08	2	10	61	5	04	3	7	<	01					
RE EAS 99030	61	29	89	4	95	42	1	63	22	0	8	3	295	2	10	6	2	7	3	3	4	2	35	8	13	65	09	57	.57	083	14	9	25	2	49	145	4	079	2	95	017	08	2	10	63	5	03	3	5	<	01						
EAS 99031	1	00	33	69	6	70	45	6	80	22	1	10	1	507	2	41	9	1	.6	3	1	3	9	66	7	23	99	11	61	1	89	.091	13	0	23	0	56	176	9	083	2	96	018	09	<	2	.12	53	5	06	3	4	<	01			
EAS 99032	1	72	24	55	7	31	49	3	10	23	7	10	1	233	3	17	10	6	4	10	5	2	8	27	2	14	75	20	102	33	.039	6	5	34	1	.54	153	0	095	2	1	76	010	06	2	10	22	3	05	6	9	<	01				
EAS 99033	1	01	21	65	7	29	27	6	17	18	1	7	4	199	2	19	7	6	.4	1	9	2	6	24	6	18	63	09	69	34	.018	7	1	25	3	33	164	0	050	1	1	24	010	.05	<	2	.08	21	3	.02	4	0	<	01			
EAS 99035	61	24	03	6	01	41	2	74	19	6	9	1	425	2	17	6	7	1	2	6	3	9	57	1	20	58	11	60	67	.077	13	0	28	5	53	181	1	082	1	1	06	.018	.07	2	08	41	6	03	3	8	<	01					
EAS 99036	48	24	58	6	69	43	5	81	21	2	10	2	326	2	14	6	5	1	2	5	6	3	6	54	1	14	61	13	58	82	091	13	8	29	1	53	214	2	078	2	1	14	.017	05	3	06	53	7	04	4	0	<	01				
EAS 99037	69	25	82	6	90	39	1	22	22	7	9	4	350	2	26	6	1	7	3	0	3	7	36	6	15	.62	09	67	51	085	12	8	33	9	56	170	3	092	2	1	13	017	06	2	.08	32	.3	04	3	8	<	01					
EAS 99038	63	26	97	5	85	30	9	20	23	2	9	9	310	2	31	6	6	6	2	2	3	4	31	6	06	56	10	75	44	060	10	7	29	4	51	206	8	080	1	1	18	015	.04	.2	.07	20	3	03	4	2	<	01					
EAS 99039	51	17	57	6	41	42	0	65	18	3	7	8	231	2	15	8	8	1	4	8	1	3	9	38	5	10	64	12	54	71	091	14	4	26	7	45	235	3	073	1	1	04	.016	.04	3	05	44	6	05	3	6	<	01				
EAS 99040	54	14	25	5	41	33	6	15	16	3	6	9	231	1	84	4	9	6	1	6	3	6	26	7	06	45	09	54	37	.074	11	2	24	3	47	166	2	085	1	1	04	010	05	2	07	27	2	03	3	9	<	01					
EBS 99042	92	26	85	9	25	55	3	125	26	6	9	9	395	2	11	8	5	7	2	1	6	4	64	2	38	1	10	18	35	1	72	124	18	8	26	9	.72	336	2	076	1	1	.00	018	14	3	09	35	2	04	3	3	<	01			
EBS 99043	49	22	78	41	26	127	2	69	26	6	10	0	436	1	95	8	2	.8	3	4	5	7	19	8	12	63	19	37	35	085	21	3	26	4	44	155	0	072	<	1	89	010	12	2	08	26	2	05	3	0	<	01					
EBS 99044	61	23	92	7	19	31	0	27	23	8	12	0	298	2	16	6	6	.4	1	0	3	8	18	7	04	62	15	55	30	033	8	6	74	6	67	159	2	108	1	1	21	.010	19	3	11	<	5	3	03	4	1	<	01				
EBS W187	13	35	45	95	12	16	147	9	178	37	2	10	6	352	3	09	20	5	11	3	4	8	2	4	70	6	1	08	2	05	21	38	1	77	089	7	9	20	2	53	88	1	033	7	70	016	10	3	08	59	2	8	07	2	2	2	97
EBS W198	85	21	74	28	06	44	4	198	34	3	11	7	648	2	72	10	8	1	4	122	5	9	0	22	4	16	64	.56	39	.37	.060	16	2	32	1	54	181	0	065	1	1	30	010	19	3	10	19	3	10	4	1	03					
EBS W199	70	67	26	4	08	50	7	82	251	8	37	0	1085	4	52	3	2	.9	2	8	3	3	122	5	.12	12	21	87	4	70	119</																										

GEOCHEMICAL ANALYSIS CERTIFICATE

Schmidt, Uwe PROJECT ELK File # 9904526

656 Foresthill Place, Port Moody BC V3H 3A1 Submitted by: Uwe Schmidt



SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppb	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppb	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti % ppm	B % ppm	Al %	Na %	K %	W ppm	Tl ppm	Hg ppb	Se ppm	Te ppm	Ga ppm	S %			
ECX 99001	48	15 14	4 16	39 2	32 23 4	8 9	1093 1	94 3	5 6	8 2 7	60 6	11	35	10	58	69	091 10	5 25	3 .59	178 9	086	3	94	027	09	2	08	15	4	04	3	1	02						
ECX 99002	73	18 91	4 69	47 1	43 25 3	12 2	2811 2	53 5	4 6	3 2.8	54 1	20	44	10	70	78	099 10	9 24	3 58	211 3	089	1	1	01	021	09	2	08	35	6	03	3	7	03					
ECX 99003	28	20 65	5 25	42 8	54 23 3	9 3	921 1	84 3	8 9	6 2 2	59 9	27	35	11	50	77	097 11	8 24	1 .50	149.2	071	2	94	018	06	2	07	48	7	03	3	1	04						
ECX 99004	61	27 67	4 53	43 4	36 43 0	13 8	577 2	57 6	2 6	3 2 3	97.3	17	62	10	77 2	58	090 9	6 36	8 1	06	113 6	099	2	96	045	07	< 2	05	31	4	.03	3	3	01					
ECX 99005	56	27 47	4 13	38 4	36 42 0	12 7	560 2	31 6	3 5	3 2 0	86 5	15	57	14	66 2	40	078 8	4 30	5 .97	108 2	092	2	91	057	06	< 2	06	44	4	21	3	0	01						
ECX 99006	67	29 85	5 17	45 8	41 45 5	14 6	592 2	67 6	8 6	1 4 2.5	99 7	.20	66	10	76 2	64	090 10	0 36	2 1.05	125 7	092	3	1	00	044	08	< 2	06	73	5	04	3	4	02					
ECX 99007	68	33 71	5.77	50 2	53 47 8	14 7	622 2	64 7	4 6	2 1 2 4	113 5	24	70	12	72 2.79	094 10	3 34.8	1.14	150 8	098	3	1	15	050	10	< 2	07	46	5	.04	3	7	02						
ECX 99008	44	30 39	4 59	56 5	49 53 7	15 2	819 2	72 5	1 4	2 2 2 0	96 5	16	37	13	69 1.57	091 9	6 37	7 1.21	126 2	087	5	1	20	043	09	< 2	09	51	1	.43	3	7	03						
ECX 99009	68	35 22	6.12	67 2	61 80 2	20 8	1410 3	42 7	0 6	1 9 2 2	121 7	35	46	11	82 1	85	110 10	6 43	7 1.56	195 4	.092	6	1	33	054	11	< 2	08	47	1	3	06	4	1	04				
RE ECX 99010	6 43	60 85	16 66	338 5	216 60	8 23 5	1090 4	75 12	6 1	9 1 7 4	3 224 7	3 58	2 78	28	49 2	25	113 12	5 20	0 .99	149 6	012	3	1	52	012	12	< 2	55	39	4	4	11	5	2	36				
ECX 99010	6 36	60 54	16 13	335 1	207 60	7 23 3	1090 4	70 12	5 1	9 1 1 4	2 222 9	3 43	2 63	27	49 2	23	113 12	2 18	8 98	145.5	012	3	1	50	012	12	< 2	53	42	4	4	12	5	1	34				
EAX 99026	27	11.86	3 14	35 1	23 13 1	6 8	218 2.03	3 3	4	5 2 2	28.1	07	29	06	75	54	086 8	1 30.2	.38	79.8	101	1	62	014	05	4	03	77	2	02	2	9	02						
EAX 99034	18	8.31	3 08	41 0	19 9 0	4 9	199 1	34 1	9 4	6 0 2 0	31 7	15	21	05	48	.49	074 8	5 16	3 .27	90 5	075	1	55	014	03	2	04	25	2	< 02	2	7	01						
EBX 99041	26	10 14	4.57	31 9	31 11 0	4 9	254 1	04 1	8 4	1 1 1 8	19 6	19	26	07	29	44	077 7	8 12	6 .29	143 0	057	1	58	011	04	2	04	23	3	< 02	2	1	02						
STANDARD DS2	14 24	130 85	31 90	163 8	281 36	9 12 8	834 3	24 58	7 21 4	201 5	3 7 28.6	11 31	10 63	11 21	81	55	094 16.0	158 5	62	147.3	121	2	1	77	030	16	7 5	1 84	251 2	5 1 81	6 0	03							

GROUP 1F15 - 15.00 GM SAMPLE, 90 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR AND IS DILUTED TO 300 ML, ANALYSIS BY ICP/ES & MS.  
UPPER LIMITS - AG, AU, HG, W, SE, TE, TL, GA, SN = 100 PPM; MO, CO, CD, SB, BI, TH, U, B = 2,000 PPM; CU, PB, ZN, NI, MN, AS, V, LA, CR = 10,000 PPM.  
- SAMPLE TYPE: SILT Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns

DATE RECEIVED: NOV 19 1999 DATE REPORT MAILED: Dec 1/99 SIGNED BY: *J. Wang* D. TOYE, C LEONG, J. WANG; CERTIFIED B.C. ASSAYERS



GEOCHEMICAL ANALYSIS CERTIFICATE



Schmidt, Uwe PROJECT ELK File # 9904527

656 Foresthill Place, Port Moody BC V3H 3A1 Submitted by: Uwe Schmidt

SAMPLE#	Mo	Cu	Pb	Zn	Ag	Ni	Co	Mn	Fe	As	U	Au	Th	Sr	Cd	Sb	Bi	V	Ca	P	La	Cr	Mg	Ba	Tl	B	Al	Na	K	W	Tl	Hg			
	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	%	%	ppm	ppm	%	ppm	%	%	%	%	%	ppm	ppm	ppm			
EAR 99081201	<1	133	7	20	<.3	36	14	571	2.20	4	<8	<2	<2	95	<.2	<3	3	87	5	44	.105	1	167	82	25	14	5	.86	.05	.18	<2	<5	<1		
EAR 99082001	1	95	8	54	3	43	27	1605	5.37	3	<8	<2	<2	116	<.2	<3	<3	238	5	29	.007	1	92	3	07	14	01	6	.70	.08	01	2	<5	<1	
EBR 99082201	1	1005	<3	12	.3	5	15	151	2.42	<2	<8	<2	2	32	<.2	<3	<3	19	50	109	4	8	88	464	.20	4	1.44	.05	99	2	<5	1			
EBR 99082202	3	2372	3	102	1.2	184	215	712	7.27	4	<8	<2	<2	6	<.2	4	4	21	42	<.001	<1	329	1.47	43	.01	9	1.85	.04	09	3	<5	1			
EBR 99082203	9	92	7	84	.3	213	29	378	3.24	3	<8	<2	4	14	<.2	3	<3	81	79	.094	15	194	2	11	312	.17	6	2.06	.06	1.09	4	<5	<1		
EBR 99082204	37	94	8	51	.3	71	16	214	2	91	2	<8	<2	8	7	<.2	<3	<3	89	07	004	16	64	1	27	105	.12	3	1	37	03	.67	2	<5	1
EBR 99082401	9	28	19	25	.3	5	2	124	2.21	2	<8	<2	8	26	<.2	<3	4	25	04	.041	12	24	11	315	.01	5	.50	.03	.41	6	<5	<1			
EBR 99082402	4	26	4	12	<.3	6	2	134	40	7	8	<2	3	2	<.2	3	3	3	.03	.007	6	22	02	55	<.01	<3	13	01	.08	4	<5	<1			
EBR 99082403	4	136	<3	32	<.3	11	2	224	1.63	2	<8	<2	3	4	<.2	<3	<3	7	05	042	8	24	.02	52	<.01	3	.18	.01	.07	3	<5	1			
EBR 99082404	1	6	7	73	<.3	37	10	853	1.69	3	<8	<2	5	3	<2	5	<3	18	.04	.010	9	24	.76	174	.05	4	1	01	.04	.55	5	<5	<1		
RE EBR 99082404	1	6	7	72	<3	35	10	837	1.68	<2	<8	<2	5	3	2	3	3	18	.04	010	9	26	.74	172	.05	3	99	.04	.54	5	<5	<1			
EBR 99082405	3	280	4	56	<3	28	8	968	.96	2	<8	<2	4	2	2	3	<3	13	.08	.016	12	27	.75	64	.03	<3	81	.01	.35	4	<5	<1			
EBR 99090401	2	660	7	21	.8	39	68	599	13.80	2	<8	<2	<2	57	<.2	4	<3	93	6.79	<.001	<1	46	1	87	10	.06	<3	2.26	.09	.06	<2	<5	<1		
KIR 072701	18	245	9	36	.3	50	26	390	4.71	5	8	<2	<2	24	<.2	<3	<3	65	2	33	094	6	56	.53	41	.26	5	2	03	.05	.09	3	<5	<1	
STANDARD C3	27	66	37	175	6.0	38	13	838	3	49	59	23	4	23	31	25.6	21	27	83	.61	.091	19	178	63	157	.10	24	2	00	.04	.17	17	<5	2	
STANDARD G-2	2	<1	6	43	<.3	8	5	579	2	10	<2	9	<2	5	78	<.2	3	<3	43	67	.097	8	86	.61	234	.14	4	1.03	.09	.52	3	<5	<1		

GROUP 1D - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG. C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-ES.  
UPPER LIMITS - AG, AU, HG, W = 100 PPM; MO, CO, CD, SB, BI, TH, U & B = 2,000 PPM; CU, PB, ZN, NI, MN, AS, V, LA, CR = 10,000 PPM.  
ASSAY RECOMMENDED FOR ROCK AND CORE SAMPLES IF CU PB ZN AS > 1%, AG > 30 PPM & AU > 1000 PPB  
- SAMPLE TYPE: ROCK Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: NOV 19 1999 DATE REPORT MAILED: *Dec 1/99* SIGNED BY: *[Signature]* TOYE, C. LEONG, J. WANG; CERTIFIED B C. ASSAYERS



GEOCHEMICAL ANALYSIS CERTIFICATE



Schmidt, Uwe PROJECT ELK File # 9904527R

656 Foresthill Place, Port Moody BC V3H 3A1 Submitted by: Uwe Schmidt

SAMPLE#	Au* ppb
EAR 99081201	3.3
EAR 99082001	11.5
EBR 99082201	29.1
EBR 99082202	19.6
EBR 99082203	.5
EBR 99082204	.2
EBR 99082401	5.5
EBR 99082402	<.2
EBR 99082403	<.2
EBR 99082404	<.2
RE EBR 99082404	<.2
EBR 99082405	<.2
EBR 99090401	1.9
KIR 072701	6.5
STANDARD DS2	228.4

AU\* BY ACID LEACHED, ANALYSIS BY ICP/MS (10 gm).

- SAMPLE TYPE: ROCK PULP

Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns.

DATE RECEIVED: DEC 8 1999

DATE REPORT MAILED: Dec 14/99

SIGNED BY: *C. Leong* D. TOYE, C. LEONG, J. WANG; CERTIFIED B.C. ASSAYERS



GEOCHEMICAL ANALYSIS CERTIFICATE



Schmidt, Uwe PROJECT ELK File # 9904528

656 Foresthill Place, Port Moody BC V3H 3A1 Submitted by: Uwe Schmidt

SAMPLE#	Ag	Al	As	B	Ba	Be	Bi	Ca	Cd	Ce	Co	Cr	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni	P	Pb	Sb	Se	Si	Te	Ti	Tl	V	W	Zn	U			
	ppb	ppm	ppb	ppb	ppb	ppb	ppb	ppm	ppb	ppb	ppb	ppb	ppb	ppm	ppm	ppm	ppm	ppb	ppm	ppb	ppm	ppb	ppb	ppb	ppb	ppm	ppb	ppb	ppb	ppb	ppb	ppb	ppm			
EBW 9901	<5	<.1	<30	9	44	<2	<20	28.0	<2	<30	<5	<20	2	07	7.4	<05	6.2	<.01	<5	10	1	<20	<.02	<10	<10	<20	77	<10	<10	13	<10	<10	7	<.05		
EBW 9902	<5	<.1	<30	9	45	<2	<20	172	6	<2	<30	<5	<20	2	08	8.0	<05	77.3	<.01	<5	14	8	<20	.06	<10	<10	27	14.17	<10	<10	<10	<10	<10	9	<.05	
EBW 9903	<5	<1	33	<5	75	<2	<20	131	4	<2	<30	<5	<20	<2	01	21	4	<05	69.7	<.01	<5	22	7	<20	.06	<10	<10	28	.87	<10	<10	15	<10	<10	<5	<.05
EBW 9904	<5	<.1	45	<5	33	<2	<20	220.9	<2	<30	<5	<20	<2	.06	6.6	<05	69.8	<.01	<5	14	4	<20	.03	<10	<10	23	9.55	<10	<10	10	<10	<10	14	<.05		
RE EBW 9904	<5	<1	56	<5	33	<2	<20	221.0	<2	<30	<5	<20	<2	.07	6.6	<.05	69	2	<.01	<5	14	1	<20	.02	<10	<10	<20	9.50	<10	<10	10	<10	<10	15	<.05	
STANDARD WASTWATR1	49	5	259	1036	991	182	<20	.1	57	<30	157	497	693	.47	.7	<05	<.1	.92	552	.3	910	<.02	484	220	229	.34	<10	<10	426	797	<10	404	<.05			

GROUP 2C - ANALYSIS AS RECEIVED BY ICP-ES.

- SAMPLE TYPE: WATER

Samples beginning 'RE' are Reruns and 'RRE' are Reject Reruns

DATE RECEIVED: NOV 19 1999

DATE REPORT MAILED: Dec 1 / 99

SIGNED BY: *[Signature]* .D. TOYE, C. LEONG, J. WANG, CERTIFIED B C ASSAYERS

GEOCHEMICAL ANALYSIS CERTIFICATE

Schmidt, Uwe PROJECT ELK File # 9904623  
656 Foresthill Place, Port Moody BC V3H 3A1 Submitted by: Uwe Schmidt

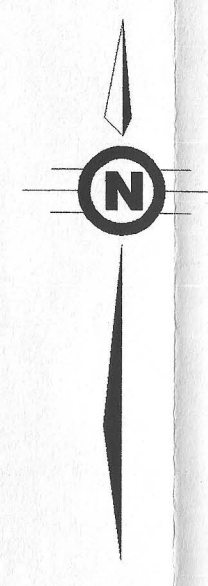
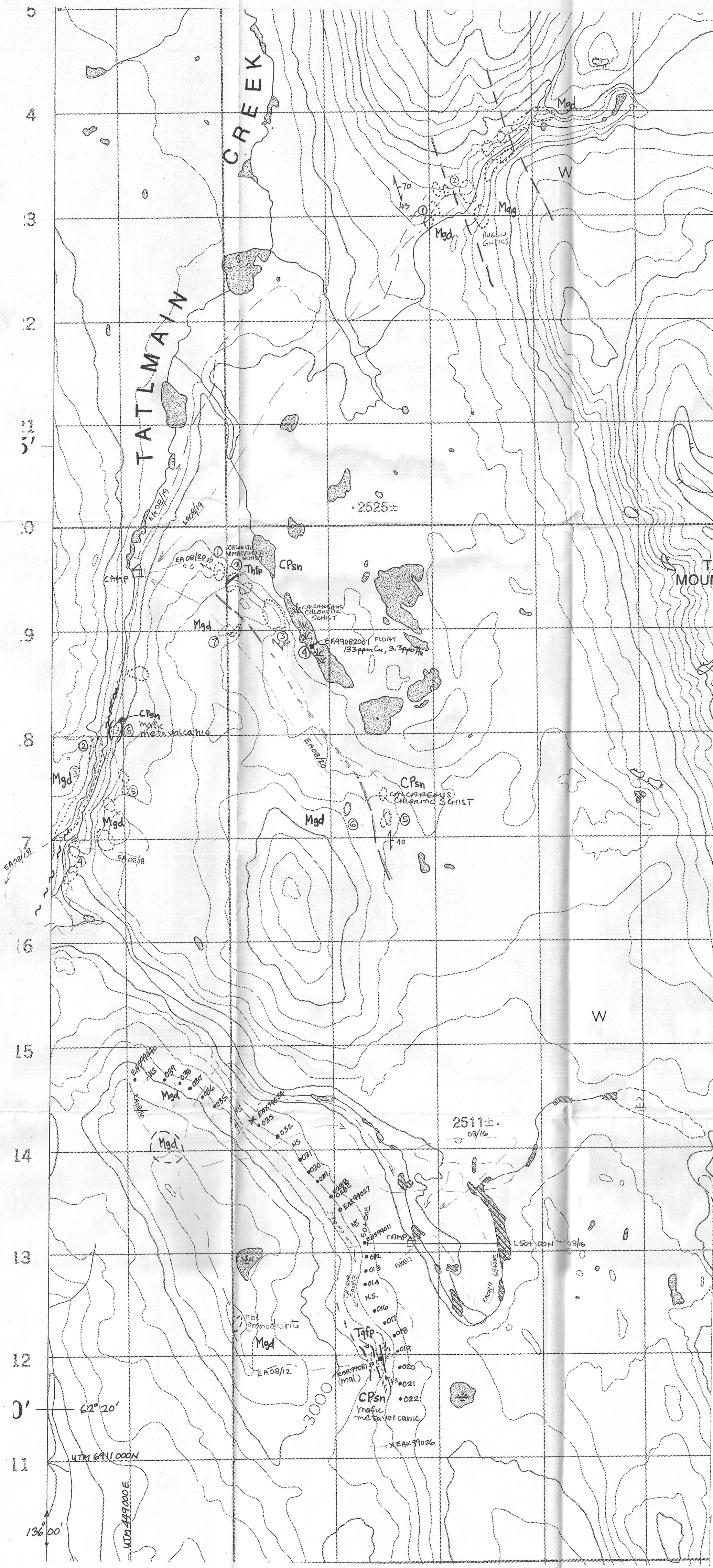


SAMPLE#	Mo ppm	Cu ppm	Pb ppm	Zn ppm	Ag ppm	Ni ppm	Co ppm	Mn ppm	Fe %	As ppm	U ppm	Au ppm	Th ppm	Sr ppm	Cd ppm	Sb ppm	Bi ppm	V ppm	Ca %	P %	La ppm	Cr ppm	Mg %	Ba ppm	Ti %	B ppm	Al %	Na %	K %	W ppm	Au* ppb	Sample gm
EBP 9901	2	19	3	35	<.3	24	13	488	5.77	10	<8	<2	8	73	4	3	<3	136	1.28	160	25	59	41	812	15	<3	84	07	09	10	1.5	12.91
EBP 9902	1	12	4	30	<3	16	8	472	2.97	4	<8	<2	4	60	2	<3	<3	76	91	116	15	30	.40	395	12	<3	84	08	10	2	8	16.13
EBP 9903	2	20	5	51	7	22	15	730	5.60	6	<8	3	6	84	5	<3	<3	149	1.27	128	20	50	45	241	27	<3	1.22	10	09	5	8019.9	8.92

GROUP 1D - 0.50 GM SAMPLE LEACHED WITH 3 ML 2-2-2 HCL-HNO3-H2O AT 95 DEG C FOR ONE HOUR, DILUTED TO 10 ML, ANALYSED BY ICP-ES.  
UPPER LIMITS - AG, AU, HG, W = 100 PPM; MO, CO, CD, SB, BI, TH, U & B = 2,000 PPM, CU, PB, ZN, NI, MN, AS, V, LA, CR = 10,000 PPM  
- SAMPLE TYPE PAN CONC AU\* GROUP 3A - 10.00 GM SAMPLE ANALYSIS BY ICP-MS.

DATE RECEIVED: NOV 30 1999 DATE REPORT MAILED: *Dec 9/99* SIGNED BY: *C. Leong* D. TOYE, C LEONG, J WANG, CERTIFIED B.C. ASSAYERS

YUKON ENERGY, MINES  
& RESOURCES LIBRARY  
PO Box 2703  
Whitehorse, Yukon Y1A 2C6



**LEGEND**

**TERTIARY ?**

- Tqfp quartz-feldspar porphyry, feldspar porphyry, dykes and sills
- Thfp hornblende-feldspar porphyry, dykes

**MESOZOIC ?**

- Mgd foliated hornblende granodiorite, quartz monzonite
- Mag megacrystic K-feldspar augen gneiss

**YUKON-TANANA TERRANE**

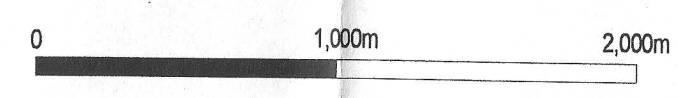
**MISSISSIPPIAN? and/or EARLIER**

- CPsn metavolcanic, metasedimentary and metaplutonic schist and gneiss

**Symbols**

sample location and sample number

- till sample
- rock sample
- outcrop
- sub-outcrop
- small outcrop
- ↗ foliation
- geological boundary: defined, approximate, inferred
- - - fault: defined, approximate, inferred
- mal = malachite

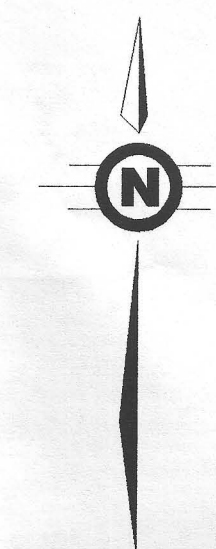
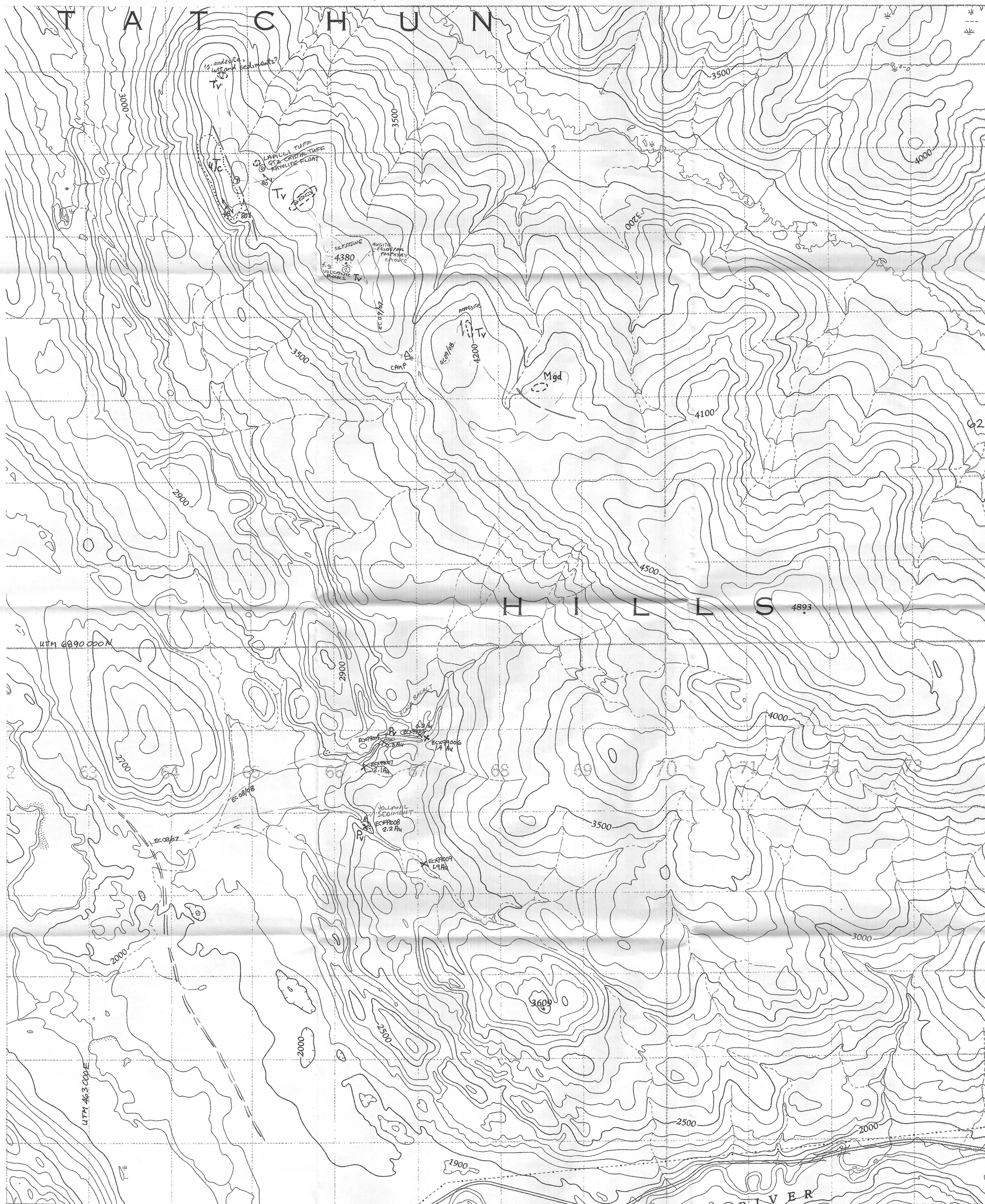


Elk Project 1999  
**Tatlmains Creek**  
 Outcrop and Sample Location

Scale 1:25,000

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**Fig. 4**

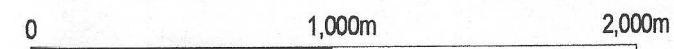


**LEGEND**

- TERTIARY**
- Pv** basaltic flows, minor shale
- UPPER TRIASSIC**
- uTc** limestone
- UPPER TRIASSIC OR EARLIER**
- Tv** andesitic and basaltic flows, breccia, tuff, minor rhyolite breccia and argillite
- MESOZOIC ?**
- Mgd** foliated hornblende granodiorite, quartz monzonite

**Symbols**

- sample location and sample number, selected analyses (Au in ppb)
- x** stream sediment sample
  - o** outcrop
  - o** sub-outcrop
  - foliation
  - geological boundary: defined, approximate, inferred
  - fault: defined, approximate, inferred



Elk Project 1999  
**Frenchman Ridge**  
 Outcrop, Sample Location  
 and Geochemistry  
 Scale 1:25,000 **Fig. 3**

