

LOG NO:	OCT 29 1992	RD.
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EXPLORATION ON THE  
TOM MINERAL CLAIMS  
1992

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Claims (record numbers):  
Tom 1 (223452)  
Tom 2 (223453)  
Tom 3 (223454)  
Tom 4 (223455)

Mining Division: Liard

NTS Map Sheet: NTS 104 B 10E

Latitude: 56 deg 42 min N  
Longitude: 130 deg 36 min W

Owner of Claims: Ecstall Mining Corp.  
#307 - 475 Howe St.,  
Vancouver, B.C. V6C 2B3

Project Operator: Kennecott Canada Inc.

Report by: Sandra Bishop, Geologist

Date of Report: September 21, 1992

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

22,572

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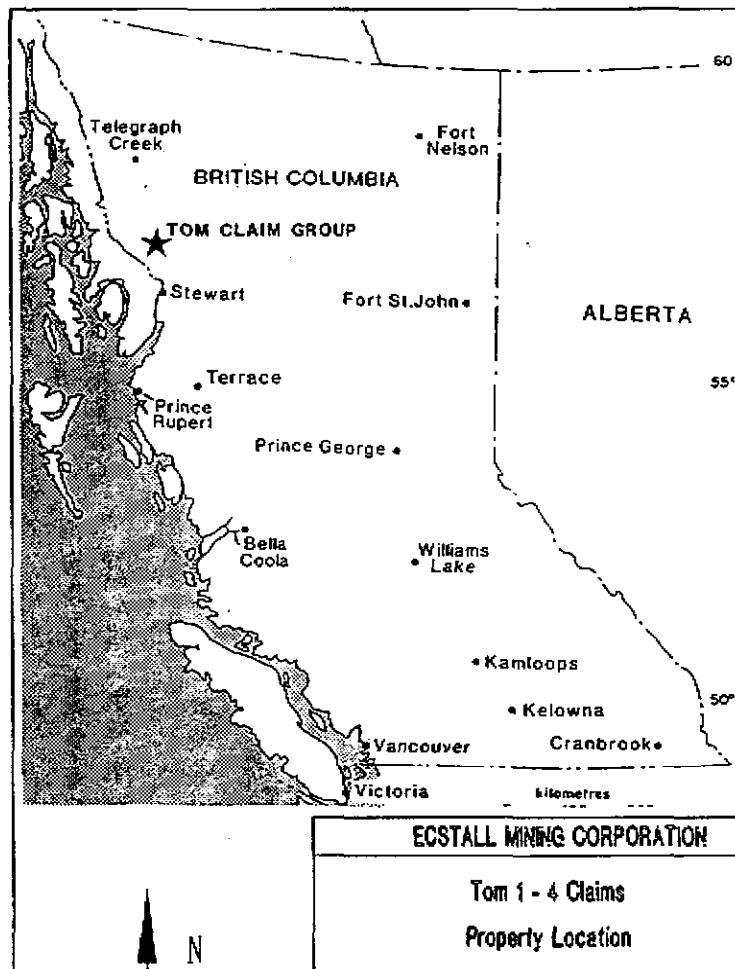
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## SUMMARY

The Tom claims are located in the Iskut-Sulpurets area of northwestern British Columbia on N.T.S. 104B 10E. The property is owned by Ecstall Mining Corp. Kennecott Canada Inc. agreed to carry out a limited property examination with the principal objective of determining the width and economic potential of the zone of highly altered quartz-sericite rock previously recorded on the Tom 2 claim. Soil samples were collected at 50 meter intervals across the area interpreted to be the zone of alteration, and two rock samples, taken of a felsic unit encountered in outcrop, were submitted for whole rock analyses. 30 element ICP analysis did not detect any anomalous metal values although four soil samples returned slightly elevated antimony values and five returned between 100 and 300 ppm barium.

The property is underlain by volcanic and volcanoclastic rocks of the Lower Jurassic Betty Creek formation which has been intruded by a stock of the Jurassic Lehto Porphyry (Britton, 1989).



## INTRODUCTION

This report summarizes the 1992 exploration program conducted by Kennecott Canada Inc. on the Tom Claim Group on behalf of Ecstall Mining Corp. The work was carried out in August, 1992.

Previous reports on the Tom Property have been completed by P. Ronning, P. Eng. and G. Nicholson, and the sections on Location and Access, Physiography and Vegetation, Regional and Local Geology have been use in preparing this report, with their permission.

## LOCATION AND ACCESS

The Tom Claims are located at latitude 56 deg 42 min north and longitude 130 deg 36 min west (NTS 104B/10E) in the Iskut River area on the eastern edge of the Coast Mountain Range.

The claims, which are accessible by helicopter only, lie some 35 km east-northeast of the Bronson Creek airstrip and 7 km north of the Eskay Creek gold deposit.

Access to the claims is by helicopter from Bronson Creek airstrip 35 km to the west, or the Bell II staging area on the Stewart-Cassiar Highway, Highway 37, about 50 km to the east. A road is partially constructed into the Iskut/ Eskay area with completion dependent on the granting of production permits for the Eskay Creek deposit. When completed, this road will pass across the norhteast corner of the Tom claims.

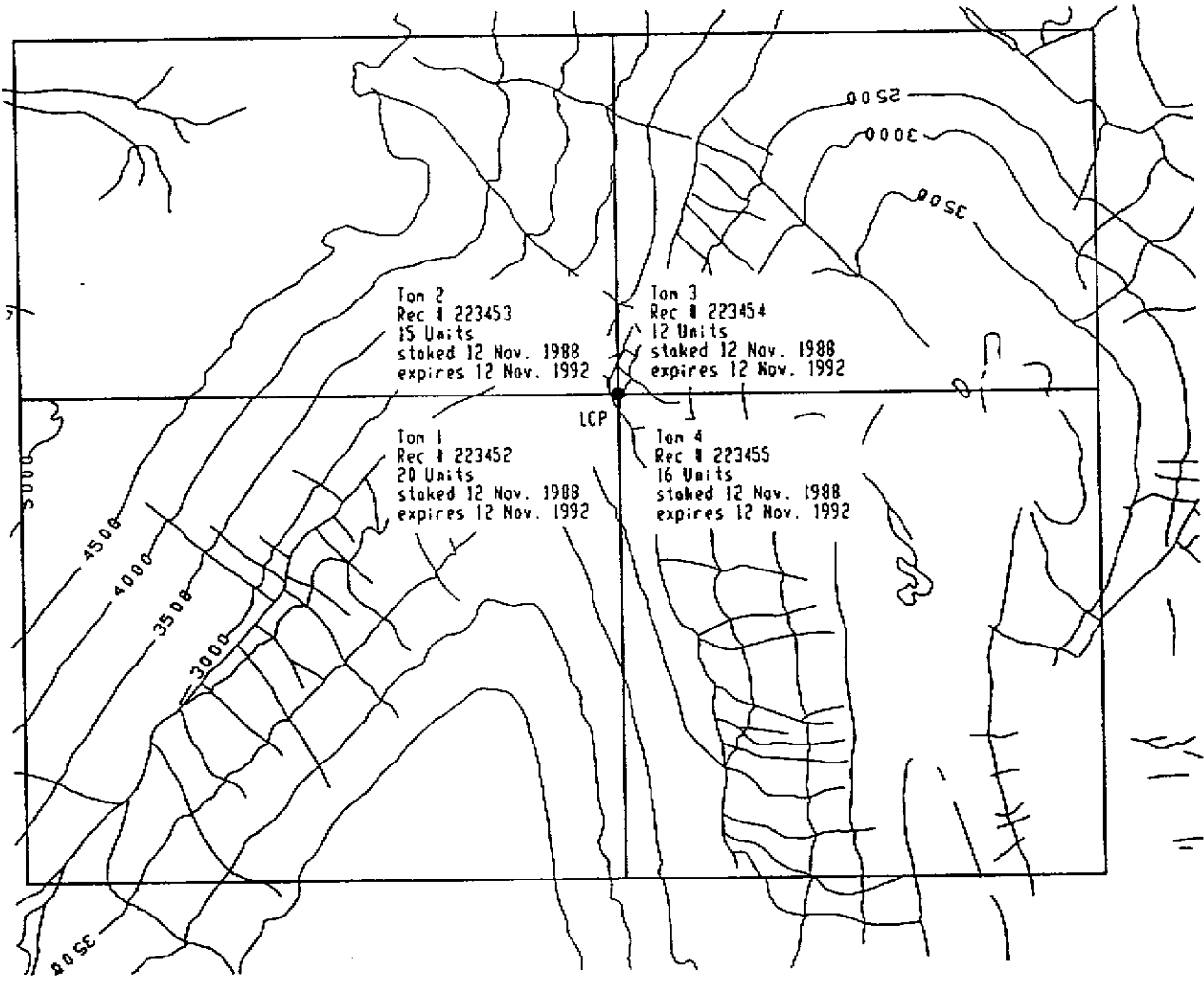
Frequent scheduled and charter flights from Smithers (330 km to the southeast) to the Bronson Creek strip service the exploration and mining activity in the area.

## PHYSIOGRAPHY AND VEGETATION

Elevations on the property vary from 640 m (2100 ft.) in the valleys to 1520 m (5000 ft.) along the ridges with extensive ice cover. The valley walls are very steep and hazardous to traverse. A veneer of unconsolidated glacial debris ranging from a few centimetres to several metres in thickness covers the valley bottoms and the lower slopes.

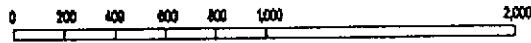
Water is plentiful as glacial melt and ground water seepage. Vegetation is limited to the occasionally grassy slope with sparse stands of trees limited to the lower elevations along Tom Creek.

Climate in the area is severe, particularly at the higher elevations. Heavy snowfalls in winter and rain in the short summer working season are typical of the Iskut-Sulphurets area. Inclement weather conditions and reliance on helicopter transport presently make this a high cost area to explore for minerals; however, once the road is built, exploration work will be much more cost effective.



N

Scale in meters



**ECSTALL MINING CORPORATION**

**Tom 1 - 4 Claims**

**Claim Map**

### CLAIM STATUS

The Tom property consists of the Tom 1-4 claims which were staked for Chris Graf in November, 1988. The claims were later transferred to Ecstall Mining Corp., now the sole owner of the property.

The claims are located in the Liard Mining Division on NTS map sheet 104B/10E (Figure 2) and pertinent claim information is summarized below.

Table 1 - Claim Information

<b>Claim #</b>	<b>Record #</b>	<b>Units</b>	<b>Record Date</b>	<b>Expiry Date</b>
Tom 1	223452	20	Nov 12, 1988	Nov 12, 1992
Tom 2	223453	15	Nov 12, 1988	Nov 12, 1992
Tom 3	223454	12	Nov 12, 1988	Nov 12, 1992
Tom 4	223455	16	Nov 12, 1988	Nov 12, 1992

Ecstall intends to reduce the Tom claim group, retaining only the Tom 2 claim, reduced to 9 units. Assessment filed on the basis of work described in this report will extend the expiry date on the retained units to Nov 12, 1993.

## GENERAL AREA HISTORY

The Tom Project lies within an historically active mining and exploration area that extends some 225 kilometres from Stewart in the south to near Telegraph Creek in the north. Within this area, which has been referred to as the Stikine Arch, mining activity goes back to the turn of the century. Due to the size of the region, it historically has been referred to as more specific areas, ranging from the Stewart area to Sulphurets, Iskut River and Galore Creek, however, all of these individual camps appear to be related to the Stikine Arch as a whole and are located in the area now referred to as the "Golden Triangle". Recent discoveries appear to be filling in areas between these known mineralized camps.

The Tom Project is located on the northern margin of the Iskut-Sulphurets area which has seen extensive exploration in the last three years. The Iskut area originally attracted interest at the turn of the century when prospectors, returning south from the Yukon goldfields, searched for placer gold and staked bedrock gossans. In the 1970's the porphyry copper boom drew exploration into the area. The new era of gold exploration began with the 1979 Sulphurets claim block by Esso Minerals Canada and the acquisition and development of the Mount Johnny claims by Skyline Explorations Ltd. in the late 1980's and the adjoining Snip claims by Cominco Ltd. Subsequently, in 1988, the major Eskay Creek gold deposit was discovered and is presently undergoing development with production planned for 1994.

Beyond these projects, and except for limited early placer gold recovery from some creeks, the area has had no mineral production history. Since 1979, more than 70 new mineral prospects have been identified, though ground acquisition was relatively slow until the fall of 1987 when promising results of summer exploration programs became known and the provincial government announced the upcoming release of analytical results from a regional stream sediment survey. By April, 1988, all open ground had been staked. More than 60 companies hold ground in the Iskut-Sulphurets belt, but to date only small areas within this 40 X 80 km district have received extensive exploration.

## PROPERTY HISTORY

The Tom property was staked in 1988. The first recorded work on the property is that described by Nicholson (1990). Nicholson noted the presence of old shovels and lumber on the property, suggesting some work was carried out previously.

In 1989 Nicholson and Associates carried out a preliminary program which consisted of a geological examination, rock geochemistry and stream sediment geochemistry (Nicholson 1990 and Nicholson et al 1990). Orequest Consultants Ltd. did a limited work program of prospecting, reconnaissance mapping, silt and rock sampling in 1990 (Malensek and Dewonck, 1990).

In 1991, New Caledonian Geological Consulting carried out a three day program to provide a geological assessment of the overall exploration potential of the property. Most of the property, some 1,575 hectares, was covered on foot at a reconnaissance level. Thirty-four rock chip samples were collected and analyzed for copper, lead, zinc, silver and gold as well as varying combinations of other elements.

## ECONOMIC POTENTIAL

Prior work on the Tom claims located some anomalous copper, zinc and gold values in grab samples of rock, some from float and some from a porphyry intrusion in the south central part of the property. The 1991 program also yielded some moderately high copper, lead and zinc values in rock samples.

Some of the creeks draining the area contain anomalous copper, lead or zinc in the stream sediments.

The property is an early stage prospect, with potential for epigenetic base and precious metal mineralization related to intrusive activity and major faulting. No mineralization with potential economic dimensions and grades has as yet been identified.

To demonstrate economic potential on the Tom Claims, two objectives should be met:

1. Identify a larger body of mineralization than the small and widely dispersed veins known at present.
2. Identify the existence of both precious and base metals, as opposed to the base-metal dominated mineralization now known.



## REGIONAL GEOLOGY

The Tom property lies towards the northern margin of what has been termed the Stewart Complex. The complex lies adjacent to the western margin of the successor Bowser Basin. It includes upper Triassic to lower Jurassic volcanic sequences which are the setting for the Iskut, Sulphurets, Stewart and Kitsault mining camps.

Ronning (1989) assumed a lower Jurassic age for most of the supracrustal rocks of the area, while recognizing that the age classification is still open.

Strata in the claims area are cut by a variety of plutons representing at least four intrusive episodes spanning late Triassic to Tertiary time. They include, in addition to the batholithic Coast plutonic complex, synvolcanic plugs, small stocks, dike swarms, isolated dikes and sills.

The stratigraphic sequence of the area has been folded, faulted and metamorphosed. Most of the deformation occurred in the Cretaceous, but some Triassic strata are polydeformed and some penetratively-deformed Devonian rocks exhibit at least two phases of deformation.

## LOCAL AND PROPERTY GEOLOGY

### Supracrustal Rocks

Supracrustal rocks, underlying two thirds of the Tom claims, are comprised of both pyroclastic and sedimentary units. Most are assumed to be lower Jurassic in age and may belong to the Betty Creek formation. On the ridges east of Tom Creek, recent work has located an andesitic tuff unit.

On the west side of the claim group, in the Hematite Ridge area, most of the Tom 2 and part of the Tom 1 claims are underlain by a stratigraphically and structurally complex package of andesitic to rhyolitic tuffs, tuffaceous wackes, conglomerates and limestone. The crest of Hematite Ridge is characterized by sediments while volcanic rocks are more abundant on the southeast facing slope. Rhyolites have been identified near the east end of the ridge top.

### Intrusive Rocks

Along the eastern edge of the Tom 4 claim, a quartz feldspar porphyry, rusty weathering and containing variable amounts of disseminated pyrite to as much as 3%, is bounded on the east by a granodiorite which may be part of the large meta-diorite mapped in the northeast corner of the Tom 3 claim.

A large body of feldspar and quartz feldspar porphyry underlies about a third of the Tom property, including most of the Tom 1 claim. It is the northeast end of the Lehto Porphyry. On the Tom claims, this porphyry has both feldspar porphyry and quartz feldspar porphyry phases. Near the south boundary of the property it contains 20% opaque, pinkish feldspar phenocrysts in a finely crystalline feldspar groundmass. About 1 km north of the south boundary, some exposures exhibit 10% clear grey, millimetric quartz grains in the groundmass.

On the ridge top at the south boundary of the Tom 1 claim, the porphyry contains partly digested xenoliths of andesitic rock up to several meters in size. Shaley felsenmeer in the same area may be a relic of sedimentary xenoliths.

### Structural Geology

Large scale, brittle faulting is the dominant deformational style on the Tom claims. Major faults have been mapped by Read et al. (1989) and many smaller, local faults and shears, some of which appear to control alteration and mineralization, are encountered on the property.

### Metamorphism

Rocks on the property are metamorphosed to the regional lower greenschist facies. Plagioclase is saussuritized and most mafic minerals are chloritized. Metamorphic foliations are not typical, although Read et al. mapped a fault bounded phyllite in the northwest corner of the property.

### Alteration

Near the north boundary of the Tom 2 claim, a prominent east-west valley forms a topographic lineament across the top of Hematite Ridge, marking a convergence of two of the major fault trends mapped by Read et al. (1989). Traceable for at least 150 meters along this valley, about 20 meters wide, is a zone of highly altered rock made up almost entirely of quartz and sericite in roughly equal amounts (Ronning, 1991). It typically contains pyrite in the order of 3%. The length of the alteration zone westward from the top of Hematite Ridge is unknown, but it is not traceable eastward and downward into the valley of the main creek draining the claims.

Local zones of silicification or quartz-sericite alteration related to minor faults and shears, are common in the volcanic rocks. Also common are veins a few centimeters thick, with mineral assemblages including:

- quartz-chlorite-hematite-(carbonate)
- quartz-barite
- quartz-carbonate

Alteration in the Lehto porphyry is similar to that in the volcanic rocks, but differs in detail. Its features include:

- veinlets of maroon hematite, 1 to 2 centimeters wide, with minor specular hematite. These are present throughout the porphyry in minor amounts.
- veinlets and fracture coatings of felty chlorite, present mainly at elevations below 1,500 meters. In places, chlorite and hematite occupy the same fractures.
- vuggy quartz veinlets, typically less than 10 cm. wide. These veinlets are common and widespread, but comprise less than 1% of the rock mass. A few of them contain disseminations and blebs of chalcopyrite, locally to as much as 5% of the vein material.
- most of the porphyry exhibits weak to moderate sericitization of the felsic groundmass.

## Mineralization

According to Ronning (1991), two types of mineralization are most significant on the property:

- Chalcopyrite-bearing quartz veins in the Lehto Porphyry
- quartz-sericite alteration associated with major faults, with disseminated pyrite and local chalcopyrite

The vuggy quartz veins in the Lehto porphyry contain, in several locations, disseminations and blebs of chalcopyrite, comprising up to 5% of the vein material. Samples of mineralized vein material contain copper in the range 0.35% to 1.43% without notable concentrations of precious metals or other base metals.

These copper-bearing veinlets are locally visually prominent, due to malachite staining, but they don't comprise a significant resource.

Pyrite is characteristically disseminated throughout the fault-related quartz-sericite alteration zone on Hematite Ridge. Locally, there are fracture-controlled concentrations of up to 2% disseminated chalcopyrite up to a meter wide. Samples of this material contained 2,507 and 8,981 ppm copper, with 24,400 and 13,231 ppm zinc (Ronning, 1991). None contained significant precious metals.

These known occurrences of copper, zinc and lead mineralization aren't large enough to have any economic potential. Their presence, however, associated with a major fault structure and alteration zone, holds some promise for locating larger bodies of mineralization.

## PROPERTY GEOCHEMISTRY

A total of two grab rock samples and 13 soil samples were collected during the 1992 program. All samples were shipped to International Plasma Laboratory Ltd. in Vancouver for analysis. All the samples were analyzed for gold by atomic absorption (AA) plus 30 elements by inductively coupled plasma (ICP) spectrophotometry. Whole rock analysis was also performed on the rock sample pulps. Sample locations, with Au, Cu, Zn and Pb geochemical results are shown in Figure 3. Sample descriptions appear in Appendix 2. Analytical procedures and complete 30 element ICP, gold by AA and whole rock analyses are presented in Appendix 3.

## CONCLUSIONS

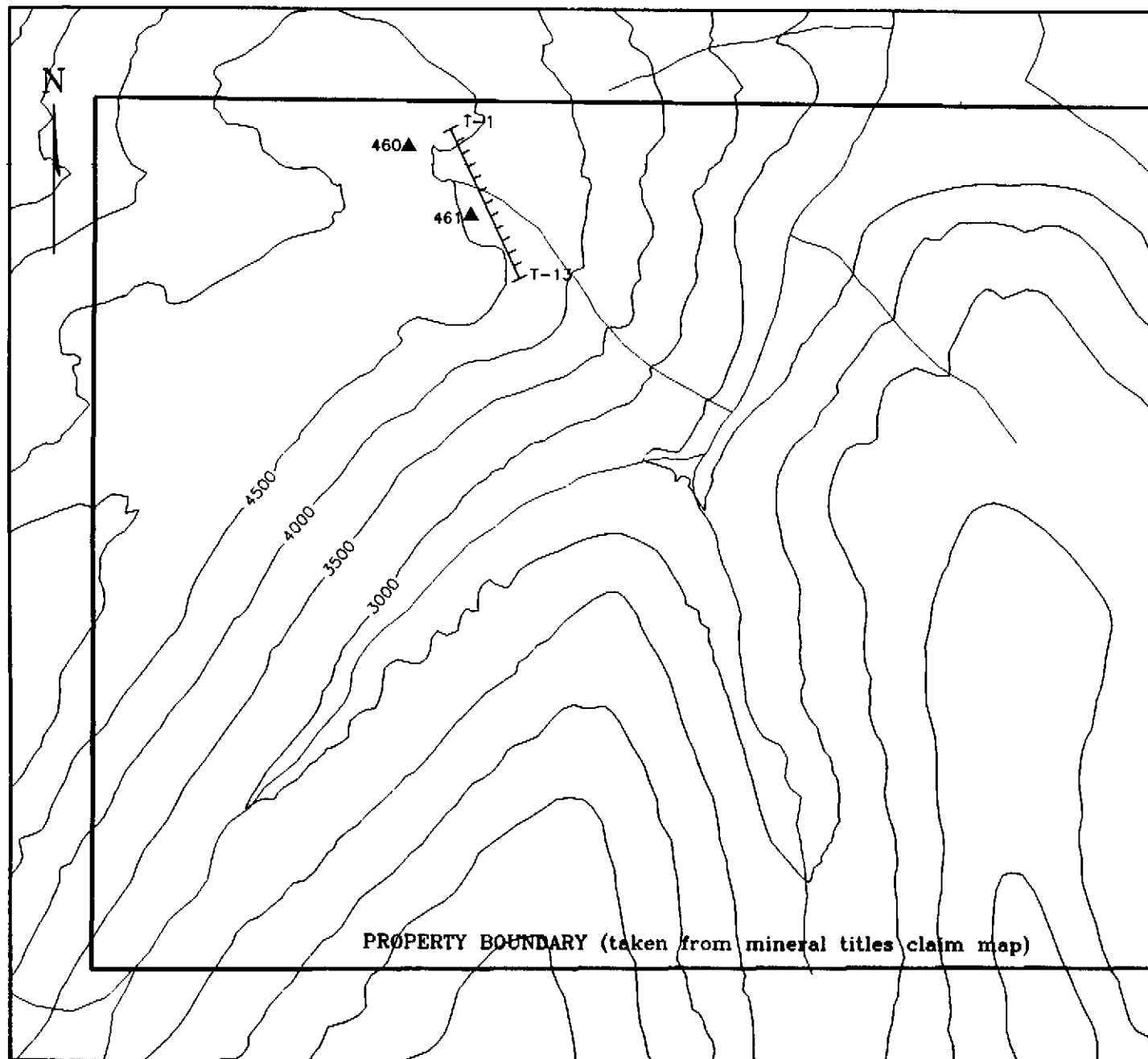
The objective of the 1992 work was to attempt to determine the width of the zone of alteration associated with a prominent lineament, described in previous reports from work completed on the property.

A half-day was spent examining the Tom 2 claim around the lineament. Rocks observed included andesitic tuffs and a diorite to gabbro intrusive rock which may be coeval. Small, discontinuous zones of carbonate-chlorite +/- silica +/- silica +/- pyrite alteration with occasional chalcopyrite, were found. No significant alteration zone is apparent.

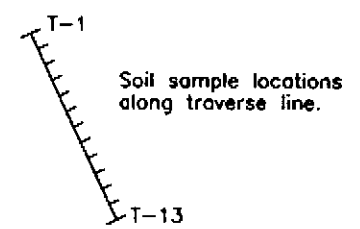
A 13-station soil line was run across the shallow valley where the lineament crosses the ridge at 4,500 feet elevation. ICP analysis shows four samples have slightly elevated Sb contents (6 to 13 ppm). Five samples contain between 100 and 300 ppm barium. Base and precious metals are not anomalous.

Two rock samples were taken from felsic rocks found in small outcrops. ICP analysis did not detect any mineralization of interest. Whole rock analysis confirms the rocks are rhyolite in composition. Whether they are volcanic or intrusive is uncertain. They are not altered and do not appear to be extensive.

No further work is recommended on the property at this time.

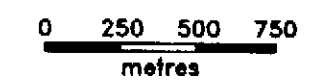


Sample No.	Au (ppb)	Cu (ppm)	Pb (ppm)	Zn (ppm)
T-1	11	21	<2	113
T-2	5	27	10	106
T-3	5	36	11	130
T-4	3	32	12	133
T-5	<	17	6	95
T-6	9	17	6	91
T-7	5	11	4	52
T-8	7	40	40	208
T-9	6	36	25	133
T-10	5	33	18	129
T-11	3	34	21	113
T-12	4	39	25	121
T-13	5	17	18	88
460	12	3	<2	25
461	11	2	6	63



▲ 461 Rock sample location.

Note: Complete 30 element ICP results for rock and soil samples and whole rock analytical results are include in appendix.



**Kennecott Canada Inc.**

FIGURE 3  
TOM PROPERTY  
SAMPLE LOCATION MAP  
WITH Au,Cu,Pb,Zn  
GEOCHEMISTRY  
1:25,000

N.T.S:104B/10      October 1992  
DRAWN BY: MJD      \TOMSAMP

PROPERTY BOUNDARY (taken from mineral titles claim map)

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**BRITTON, J.M.**

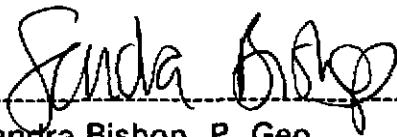
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## STATEMENT OF QUALIFICATIONS

I, Sandra Bishop, of 2742 West 2<sup>nd</sup> Avenue, Vancouver, British Columbia hereby certify:

1. THAT I am a graduate of the University of British Columbia (1985) and hold a Bachelor of Science degree in Geology.
2. THAT I am presently a staff geologist in the employment of Kennecott Canada Inc., of Suite 138, 200 Granville Street, Vancouver, British Columbia.
3. THAT I have been employed in my profession by various mining companies since graduation and with Kennecott Canada Inc. since 1991.
4. THAT I am licensed to practice as a Professional Geoscientist in the Province of British Columbia.
5. THAT I am an associate of the Geological Association of Canada.
6. THAT the information contained in this report was obtained from a review of data listed in the bibliography, and from field work conducted by myself in August 1992.
7. THAT I have no interest in the property described herein, nor in securities of any company associated with the property, nor do I expect to receive any such interest.

DATED at Vancouver, British Columbia, this 13<sup>th</sup> day of October, 1992.



Sandra Bishop, P. Geo.

APPENDIX 1

STATEMENT OF EXPENDITURES

August 18, 1992:

1/2 day on property by H. Smit and S. Bishop

Helicopter	0.7 hours X \$800.00 =	\$ 560.00
Wages	(Smit and Bishop - 2 @ 0.75 days) =	340.00
Samples	15 @ \$20.00 =	300.00
Whole rock analysis	2 @ \$10.00 =	20.00
Accomodation	Eskay (1/2 allocation) =	150.00

Report costs 450.00

Total Expenditures 1,820.00



APPENDIX 2

SAMPLE DESCRIPTIONS

Rock samples (grabs)

Samples 00460 and 00461: Pale green, siliceous rock; small outcrops; no alteration; intrusive or possibly rhyolite.

Soil samples

Line run at approximately 155 degrees across a gully in the northwest corner of the property, starting at approx. elevation 4580 feet. All samples were taken in the "B" horizon, collected with a trowel approximately 10-20 cm below surface.

<u>Sample</u>	<u>Distance</u> (m)	<u>Colour</u>	<u>Texture</u>
T1	0	Brown	5% silt, rest less than 1 cm chips
2	+50	Brown to black	Sandy to 0.5 cm chips
3	+100	Brown	Silt to sand
4	+150	"	Coarse sand
5	+200	"	Silt, minor clay
6	+250	"	Talus, 0.5 to 1 cm, minor silt
7	+300	"	Silt, minor clay
8	+350	"	30% silt, 10% clay, 60% chips
9	+400	"	20% silt, 80% sand
10	+450	"	50% silt, 50% sand
11	+500	"	30% silt, 70% sand to chips
12	+550	"	20% silt, 80% sand
13	+600	"	silt



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### Method of ICP Multi-element Analyses

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- (a) 0.50 grams of sample is digested with diluted aqua regia solution by heating in a hot water bath for 90 minutes, then cooled, bulked up to a fixed volume with demineralized water, and thoroughly mixed.
- (b) The specific elements are determined using an Inductively Coupled Argon Plasma spectrophotometer. All elements are corrected for inter-element interference. All data are subsequently stored onto computer diskette.
- \* Aqua regia leaching is partial for Al, Ba, Ca, Cr, K, La, Mg, Na, Sc, Sn, Sr, Th, Ti, W and Zr.

### QUALITY CONTROL

The machine is first calibrated using six known standards and a blank. The test samples are then run in batches.

A sample batch consists of 38 or less samples. Two tubes are placed before a set. These are an inhouse standard and an acid blank, which are both digested with the samples. A known standard with characteristics best matching the samples is chosen and placed after every fifteenth sample. After every 38th sample (not including standards), two samples, chosen at random, are reweighed and analysed. At the end of a batch, the standard and blank used at the beginning is rerun. The readings for these knowns are compared with the pre-rack knowns to detect any calibration drift.



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#### Method of whole rock analyses by ICP

- (a) 0.20 grams of sample was fused with lithium metaborate and leached in 5% HNO<sub>3</sub> acid, then cooled, bulked up to a fixed volume with demineralized water, and thoroughly mixed.
- (b) The specific elements were determined using a Inductively Coupled Argon Plasma spectrophotometer. All major interfering, as well as trace, elements were inter-element corrected. All data are subsequently stored onto computer diskette.

#### QUALITY CONTROL

The machine is first calibrated using six known standards and a blank. The test samples are then run in batches. A sample batch consists of 38 or less samples. Two tubes are placed before a set. These are an inhouse standard and an acid blank, which are both digested with the samples. A known standard with characteristics best matching the samples is chosen and placed after every fifteenth sample. After every 38th sample (not including standards), two samples, chosen at random, are reweighed and analysed. At the end of a batch, the standard and blank used at the beginning is rerun. The readings for these knowns are compared with the pre-rack knowns to detect any calibration drift.



