

86-816-15376

ASSESSMENT REPORT  
ON THE  
GEOPHYSICAL, GEOLOGICAL AND GEOCHEMICAL  
WORK DONE ON  
TLITI CLAIM

OMINECA MINING DIVISION

LAT 55° ~~23~~ 22.8'  
LONG 125° 46.2'

N.T.S. 93N/SW

FILMED

*Owner/Operator:*

NORANDA EXPLORATION COMPANY, LIMITED  
(NO PERSONAL LIABILITY)

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

15,376  
December, 1986

BY: Gordon Maxwell  
Lyndon Bradish

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SUMMARY

The TLITI Claim was staked in August of 1985 to cover a series of airborne EM anomalies detected by a Aerodat survey flown earlier that year. One day of linecutting, HLEM and mag surveys and reconn geologic mapping failed to produce an attractive target for further follow-up. The claim was found to be underlain mainly by a series of sedimentary horizons belonging to both the Sitlika Assemblage or the Cache Creek Group. No further work is warranted for the property.

## INTRODUCTION

The TLITI claim was staked by Lorne Warner, an employee of Noranda Exploration, to cover a series of airborne EM anomalies detected on an Aerodat airborne survey flown in June of 1985. The work described within consisted of one day of horizontal loop EM and Magnetometer survey and geologic examination. The purpose of the work was to locate the ABEM anomalies and to attempt to explain the source and environment hosting the anomalies. The work was performed on September 2, 1985 under the supervision of the Author.

## LOCATION AND ACCESS

The property is situated approximately 16 kilometres southeast of the village of Takla Landing in central B. C. The claim is located two kilometres east of Takla Lake, immediately south of Tliti Creek. Access to the claim is via boat to Tliti Creek or by helicopter to higher elevations on the property. The B.C.R. Dease Lake extension lies immediately west of the property along Takla Lake.

## CLAIM STATUS

<u>CLAIM NAME</u>	<u># UNITS</u>	<u>RECORD #</u>	<u>RECORD DATE</u>	<u>OWNER</u>
TLITI	20	7309	Sept 23, 1985	Noranda

## REGIONAL GEOLOGY

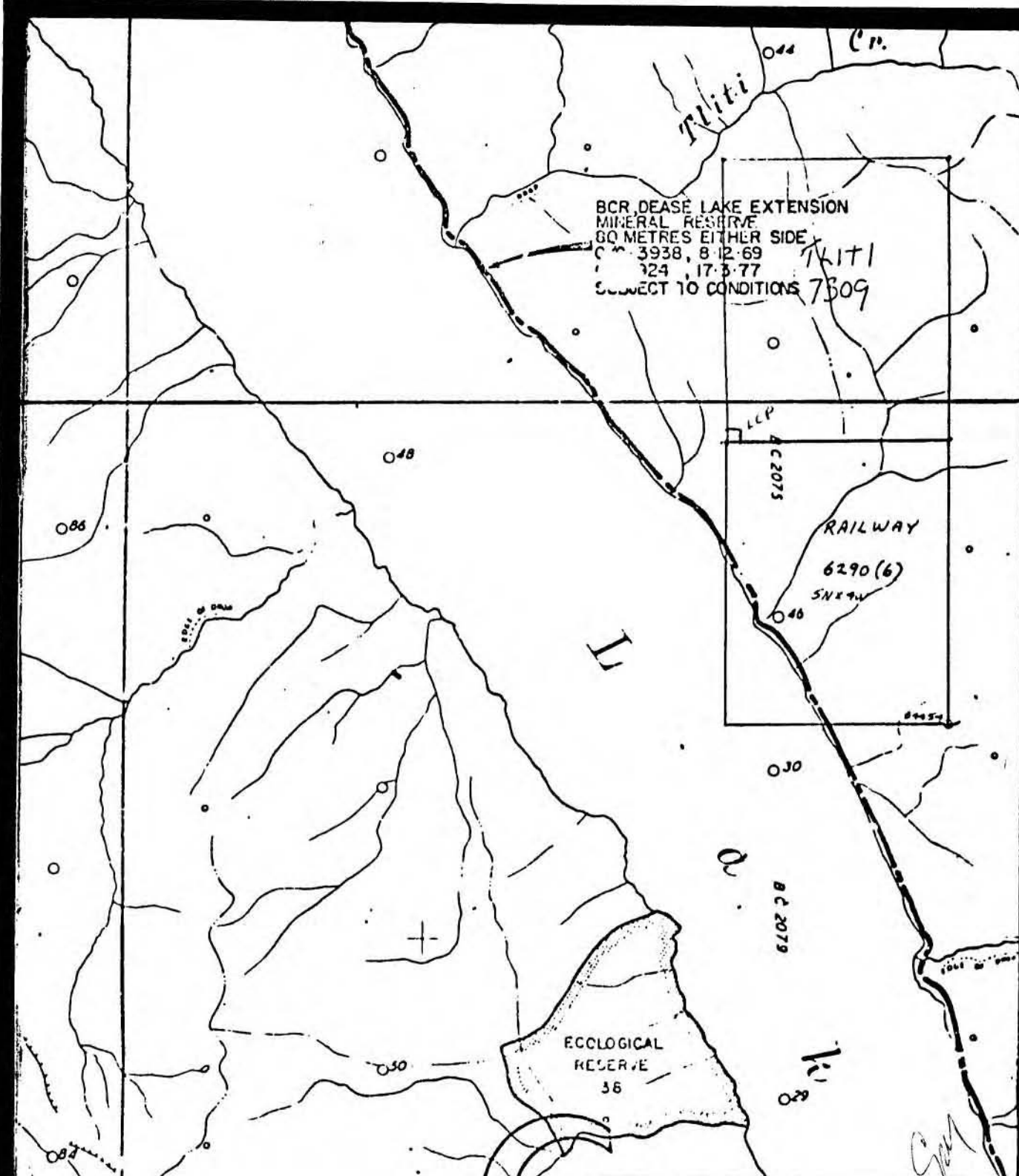
The area is underlain by Upper Triassic to Lower Jurassic volcanic and sedimentary rocks of the Sitlika Assemblage which have been regionally metamorphosed to greenschist facies (Paterson, 1974). This assemblage is composed mainly of well foliated andesitic to rhyolitic pyroclastics and flows with lesser amounts of greywacke, siltstone and phyllite. The Sitlika volcanics are characterized by local development of sericite, quartz-sericite and chlorite schists. The Takla Fault separates the Sitlika rocks from the Tertiary Sustat Group to the west. The Permian Cache Creek rocks to the east are separated from the Sitlika by the Vital Fault and a serpentinite melange. The Cache Creek Group is bounded to the east by the Pinchi Fault and the Jurassic Hogem Batholith (Figure #3).



0 100 200 KILOMETRES  
SCALE 1:8,000,000

REVISED	TLITI CLAIM	
	LOCATION MAP	
PROJ. No. 248	SURVEY BY: GM	DATE: Dec 86
N.T.S. 93N/5	DRAWN BY: S.K.B.	SCALE: 1:8,000,000
DWG. No. 1	<b>NORANDA EXPLORATION</b>	
	OFFICE: PRINCE GEORGE, B.C.	

VANCAL 11827



BCR DEASE LAKE EXTENSION  
 MINERAL RESERVE  
 80 METRES EITHER SIDE  
 C.M. 3938, 8-12-69  
 C.M. 324, 17-3-77  
 SUBJECT TO CONDITIONS 7309

TLITI

RAILWAY  
 6290(6)  
 SNX 9W

ECOLOGICAL  
 RESERVE  
 36

REVISED	TLITI CLAIM	
	CLAIM MAP	
PROJ. No. 248	SURVEY BY: GM	DATE: Dec/86
N.T.S. 93N5	DRAWN BY: GM	SCALE: 1:5,000
DWG. No. 2	<b>NORANDA EXPLORATION</b>	
	OFFICE: Prince George	

## LOCAL GEOLOGY

The property appears to lie at the contact between Permian Cache Creek rocks to the east and Upper Triassic-Lower Jurassic Sitlika rocks to the west. The Cache Creek rocks trend north-south and dip steeply to the east, consisting of phyllite greywacke, siltstone and shaly limestones. The fine clastic sediments include strongly foliated dark grey to black massive to weakly graphitic phyllite interbedded with greywacke and siltstone. A thick unit shaly limestone is located near the contact.

The remainder of the property is underlain mainly by intercalated dark grey to black phyllite and andesites of the Sitlika group. The andesites consist of pale green chloritic schists and weakly schistose andesite flows. Several minor units were observed on the property including a weakly pyritic sericite schist, a pale grey to beige chert breccia and a small granodiorite sill or stock.

## GEOPHYSICS

### Instrumentation

SE-88 EM System - The SE-88 unit differs from the normal HLEM systems such as the MaxMin II above in that it measures without regard to phase, the ratio of signal amplitude between two frequencies which are transmitted and received simultaneously. A low frequency of 112 Hz is used as a reference frequency. The signal difference is integrated or averaged over a period of time in order to improve the signal to noise ratio.

The survey parameters employed on the follow-up programme are as follows:

Coil separation	: 100 meters
Frequencies	: 3037, 1012, 337 Hz
Reference frequency	: 112 Hz
Integration period	: 16 or 8 seconds
Reading interval	: 25 meters
Measurement	: ratio of amplitude between reference and signal frequencies (%)

MP-3 Magnetometer System - Magnetometers manufactured by Scintrex Ltd. of Concord, Ontario were employed for these surveys. The MP-3 Total Field Magnetometer System consists of one or more field units and a base station. Diurnal and day to day variations are automatically corrected at the end of the survey by the built in microprocessor giving the data a usable accuracy of 1 gamma.

## DISCUSSION OF RESULTS

Three reconnaissance lines of SE-88 E.M. and mag were completed over a portion of the Tliti claim. The E.M. survey defined numerous zones of bedrock conductivity with the highest conductivity (30 - 50 Siemens) recorded 25 to 50 metres east of the Baseline on Lines 2650N and 2800N. This zone has a strong magnetic response (700 nT in amplitude) recorded coincident with the bedrock conductivity. This conductor appears to be of limited depth extent.

A second response which reflects a well defined, discrete bedrock conductor is located at L.2650N/5215E having an interpreted conductivity of 30+ Siemens. There is no readily apparent magnetic signature of interest associated with this zone.

Two zones of narrow bedrock conductivity are also defined at the west end of the grid specifically at L.3100N/3280E and L.3100N/3455E. There are no magnetic responses of appreciable amplitude directly associated or due to these bedrock conductors.

The remaining conductors are typically wide and poorly defined. Their magnetic signature is variable and the relationship between conductivity and susceptibility cannot be uniquely established.

## GEOCHEMISTRY

A total of nine silt samples were taken from the property and analyzed for Cu, Zn, Au and Ag. None proved to be anomalous. Sample locations and results are plotted on the detail geology map.

## CONCLUSIONS

All of the conductive horizons encountered were found to be associated with graphitic phyllites. Although some volcanic stratigraphy was outlined during recon geologic mapping, it is believed the majority of the claim is underlain by sediments of both the Cache Creek and Sitlika Groups.

## RECOMMENDATIONS

No further work is warranted for the property at the present time. Further exploration should be focused towards the east where volcanics appear to be more prevalent.



APPENDIX I

NORANDA EXPLORATION COMPANY, LIMITED

STATEMENT OF COST

DATE December, 1986

PROJECT - TLITI  
TYPE OF REPORT - Geophysical, Geological & Geochemical

a) **Wages:**

Geophysics		
HLEM - 2 mandays @ \$125/day	\$250.00	
Mag - 1 manday @ \$125/day	\$125.00	
Geology - 1 manday @ \$150/day	\$150.00	
Linecutting - 1 manday @ \$100/day	\$100.00	
Total Wages		\$ 625.00

b) **Food and Accommodation:**

5 mandays @ \$50/day		\$ 250.00
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c) **Transportation:**

Helicopter - 1.4 hrs @ \$500/hour		\$ 700.00
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d) **Analysis:**

Geochem - 9 silts @ \$11/sample		\$ 99.00
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e) **Cost of Preparation of Report:**

Author	\$200	
Drafting	\$125	
Typing	\$100	
Total Cost of preparation		\$ 425.00

<b>TOTAL COST</b>		<b>\$2,099.00</b>
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APPENDIX II

COST BREAKDOWN

HLEM SURVEY

2 mandays @ \$125/day - Sept 2, 1985 (Rod Swire, Brad Gagnon)	\$250
Food & accomodations-2 mandays @ \$50/day	\$100
Transportation	\$350
Report Preparation	\$150
	-----
	\$850

MAG SURVEY

1 manday @ \$125/day - Sept 2, 1985 (Steve Hughes)	\$125
Food and accomodations-1 manday @ \$50/day	\$ 50
Transportation	\$150
Report Preparation	\$150
	-----
	\$475

GEOLOGY SURVEY

1 manday @ \$150/day - Sept 2, 1985 (Gord Maxwell)	\$150
Food and accomodations-1 manday @\$50/day	\$ 50
Transportation	\$100
Report Preparation	\$125
	-----
	\$425

LINECUTTING

1 manday @ \$100/day - Sept 2, 1985 (Rob Gangl)	\$100
Food and accomodation-1 manday @\$50/day	\$ 50
Transportation	\$100
	-----
	\$250

GEOCHEMISTRY

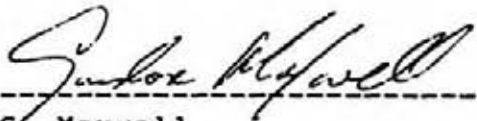
9 SILTS @ \$11/Sample	\$ 99
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APPENDIX III

STATEMENT OF QUALIFICATIONS

I, Gordon Maxwell of Prince George, Province of British Columbia, do hereby certify that:

1. I am a Geologist residing at 6162 Caledonia Crescent, Prince George, British Columbia.
2. I am a graduate of the University of Manitoba with an Hons. B. Sc. (geology).
3. I am a member in good standing of the Canadian Institute of Mining and the Prospector's and Developer's Association.
4. I presently hold the position of Project Geologist with Noranda Exploration Company, Limited and have been in their employ since 1980.

  
-----  
G. Maxwell



## APPENDIX IV

### ANALYTICAL PROCEDURES

The methods listed are presently applied to analyse geological materials by the Noranda Geochemical Laboratory at Vancouver. (March, 1984).

#### PREPARATION OF SAMPLES

Sediments and soils are dried at approximately 80°C and sieved with a 80 mesh nylon screen. The -80 mesh (0.18 mm) fraction is used for analysis.

Rock specimens are pulverized to -120 mesh (0.13 mm). Heavy mineral fractions (panned samples) are analysed in its entirety, when it is to be determined for gold without further sample preparation.

#### ANALYSIS OF SAMPLES

Decomposition of a 0.200 g sample is done with concentrated perchloric and nitric acid (3:1), digested for 5 hours at reflux temperature. Pulps of rock or core are weighted out at 0.2 g or less depending on the matrix of the rock, and twice as much acid is used for decomposition that that is used for silt or soil.

The concentrations of Ag, Cd, Co, Cu, Fe, Mn, Mo, Ni, Pb, V and Zn (all the group A elements of the fee schedule) can be determined directly from the digest (dissolution) with an atomic absorption spectrometer (AA). A Varian-Techtron Model AA-5 or Model AA-475 is used to measure elemental concentrations.

#### ELEMENTS REQUIRING SPECIFIC DECOMPOSITION METHOD

**Antimony - Sb:** 0.2 g sample is attacked with 3.3 ml of 6% tartaric acid, 1.5 ml conc. hydrochloric acid and 0.5 ml of conc. nitric acid, then heated in a water bath for 3 hours at 95°C. Sb is determined directly from the acid solution with an AA-475, equipped with electrodeless discharge lamp (EDL).

**Arsenic - As:** 0.2 - 0.4 g sample is digested with 1.5 ml of 70% perchloric acid and 0.5 ml of conc. nitric acid. A Varian AA-475 equipped with an As-EDL measures the arsenic concentration of the digest.

**Barium - Ba:** 0.1 g sample is decomposed with conc. perchloric, nitric and hydrofluoric acid. Atomic absorption using a nitrous oxide-acetylene flame determines Ba from the aqueous solution.

**Bismuth - Bi:** 0.2 g - 0.3 g is digested with 2.0 ml of perchloric 70% and 1.0 ml of conc. nitric acid. Bismuth is determined directly from the digest into the flame of the AA instrument c/w EDL.

**Gold - Au:** 10.0 g sample sample (Pan-concentrates see below) is digested with aqua regia (1 part nitric and 3 parts hydrochloric acid). Gold is extracted with Methyl iso-Butyl ketone (MIBK) from the aqueous solution. Gold is determined from the MIBK solution with flame AA.

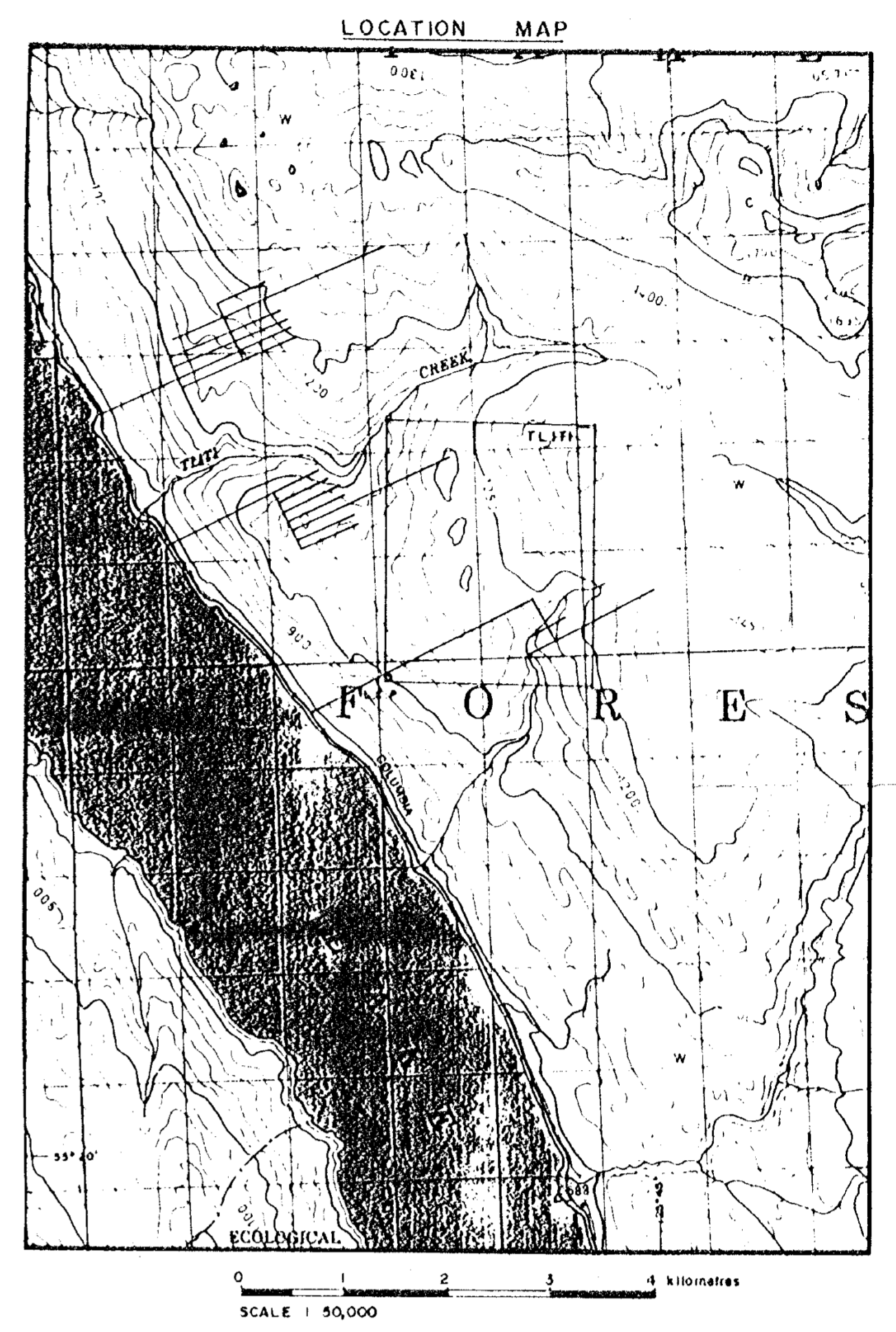
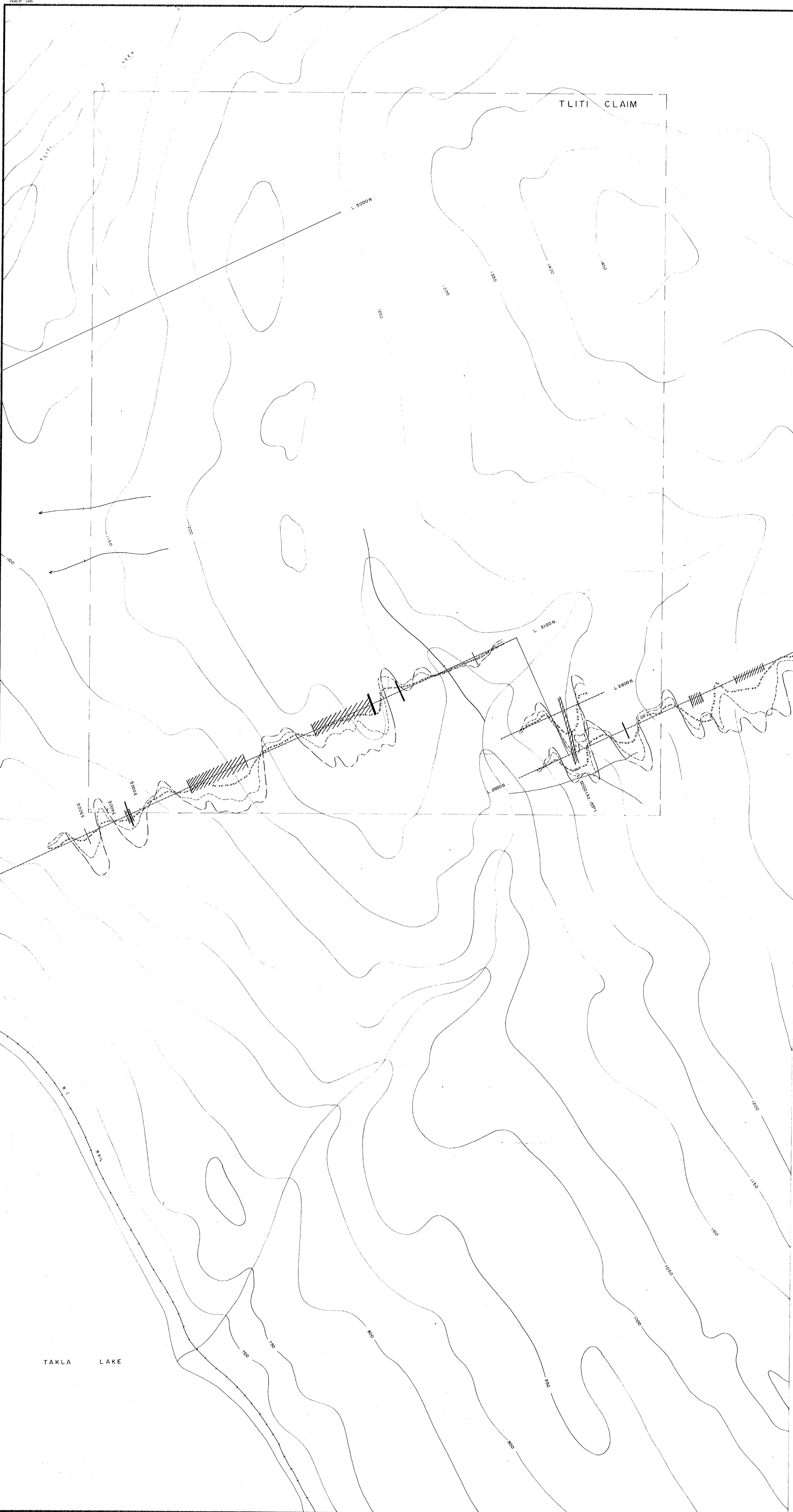
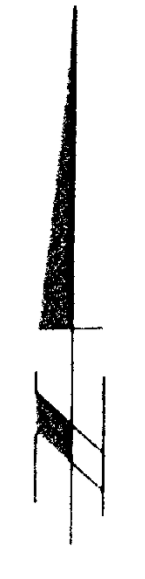
**Magnesium - Mg:** 0.05 - 0.10 g sample is digested with 4 ml perchloric/nitric acid (3:1). An aliquot is taken to reduce the concentration to within the range of atomic absorption. The AA-475 with a nitrous oxide flame determines Mg from the aqueous solution.

**Tungsten - W:** 1.0 g sample sintered with a carbonate flux and thereafter leached with water. The leachate is treated with potassium thiocyanate. The yellow tungsten thiocyanate is extracted into tri-n-butyl phosphate. This permits colourimetric comparison with standards to measure tungsten concentration.

**Uranium - U:** An aliquot, taken from a perchloric-nitric (3:1) decomposition, usually from the multi-element digestion, is diluted with water and a phosphate buffer. This solution is exposed to laser light, and the luminescence of the uranyl ion is quantitatively measured on the UA-3 (Scintrex).

LOWEST VALUES REPORTED IN PPM

Ag - 0.2	Mn - 20	Zn - 1	Au - 0.01 (10 ppb)
Cd - 0.2	Mo - 1	Sb - 1	W - 2
Co - 1	Ni - 1	As - 1	U - 0.1
Cu - 1	Pb - 1	Ba - 10	
Fe - 100	V - 10	Bi - 1	

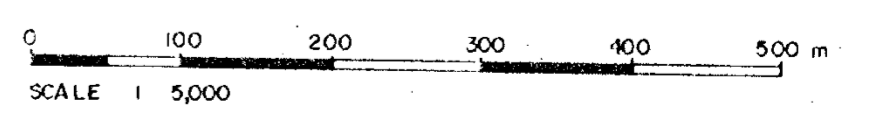


**LEGEND**

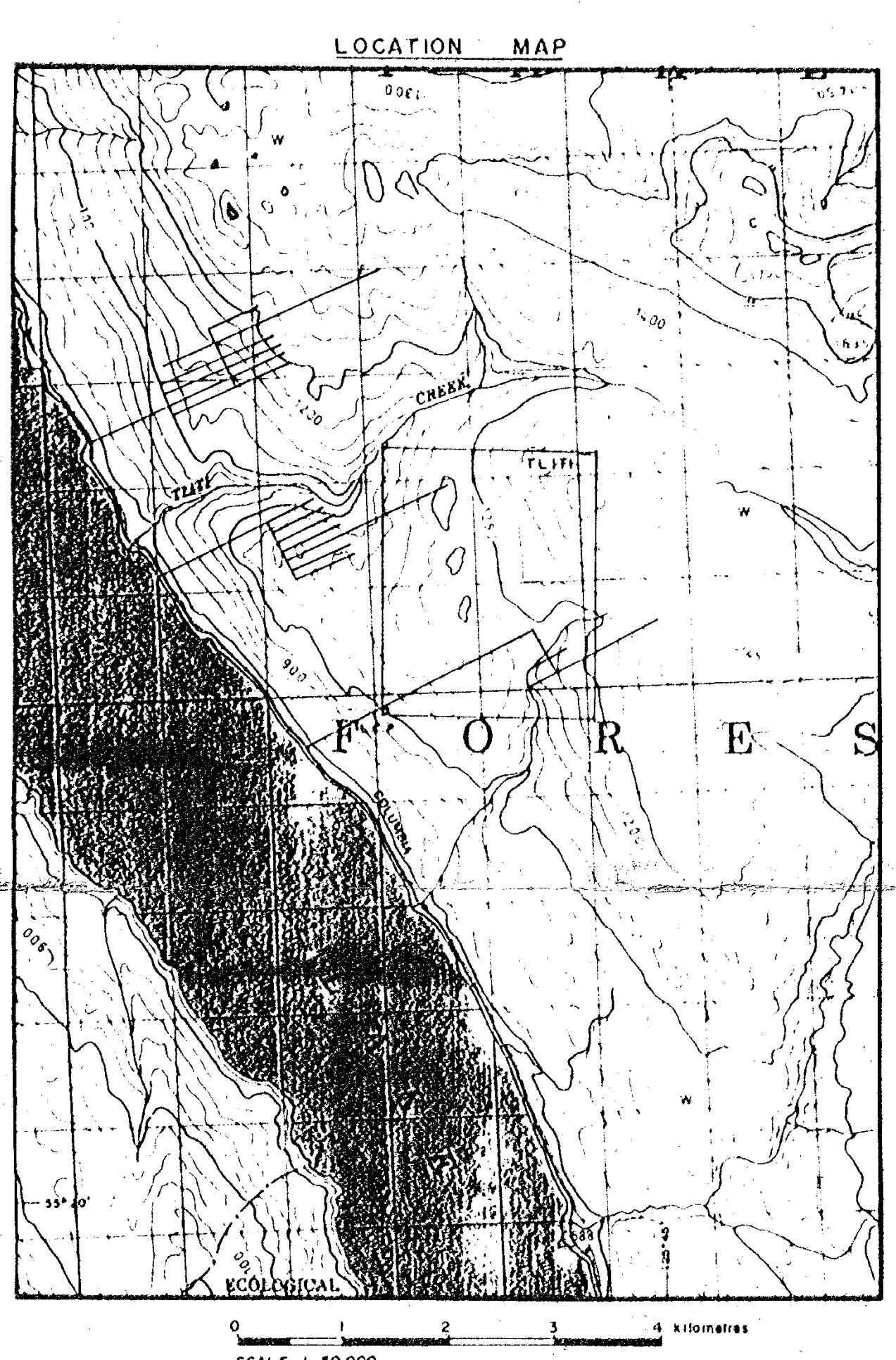
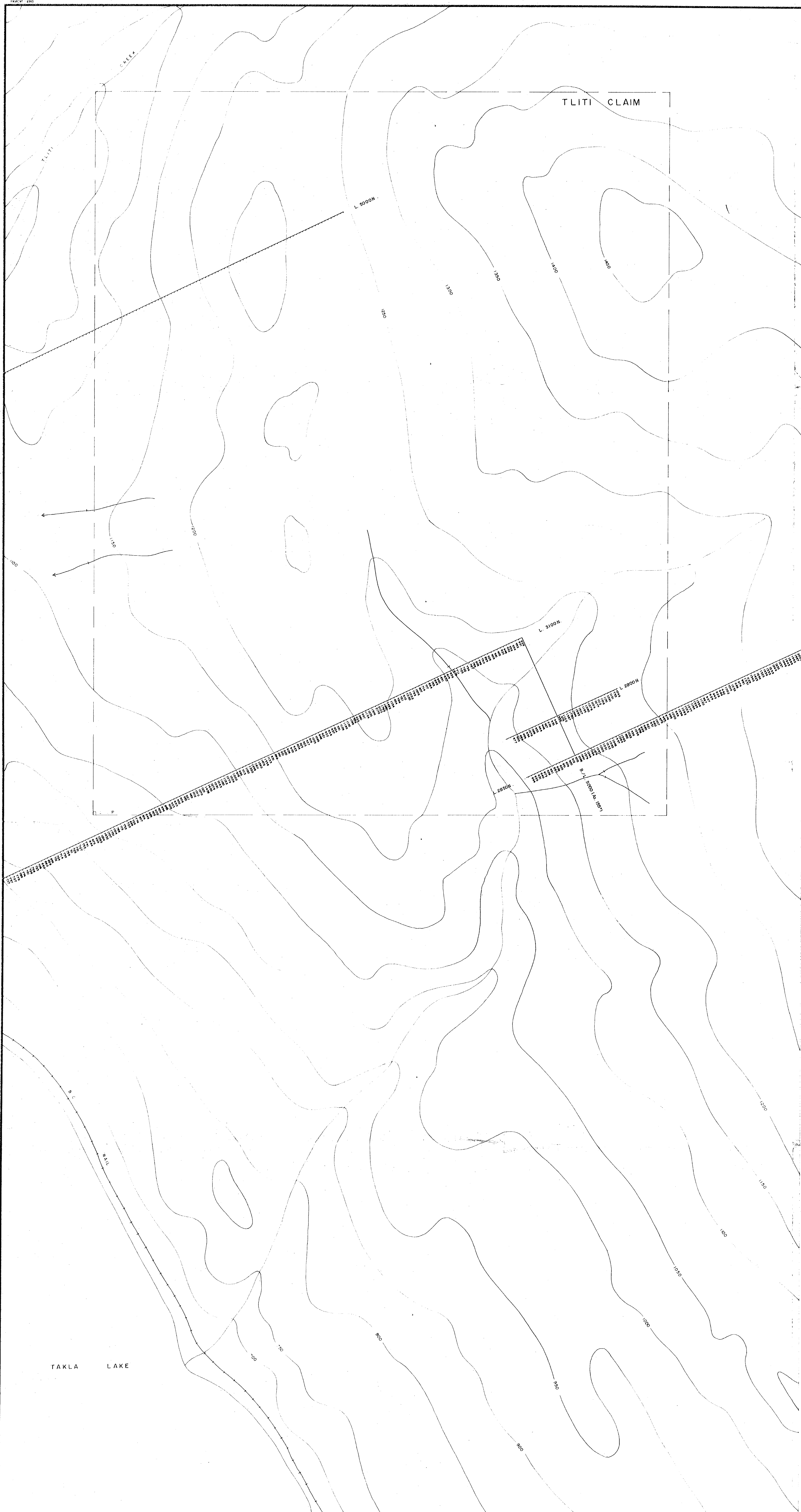
Instrument : SE-88 GENI  
Cell Spacing : 100m  
Ref. Frequency : 112 Hz  
Vertical Scale : 1 cm = 20m  
Conductor Axis :  
337 Hz : x x x x  
1812 Hz : - - - - -  
3837 Hz : / / / / /

**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**15,376**



REVISED	TAKLA NAK	
G.M. DEC. 1988	TLITI CLAIM	
	SE-88 SURVEY	
PROJ. No. 5-18	SURVEY BY R.S./B.G.	DATE SEPT. 1988
N.T.S. 9.5N/5	DRAWN BY S.K.B.	SCALE 1:5,000
DWG. No.	<b>NORANDA EXPLORATION</b>	
MAP 2	OFFICE PRINCE GEORGE, B.C.	



**LEGEND**

Instrument : MP-3

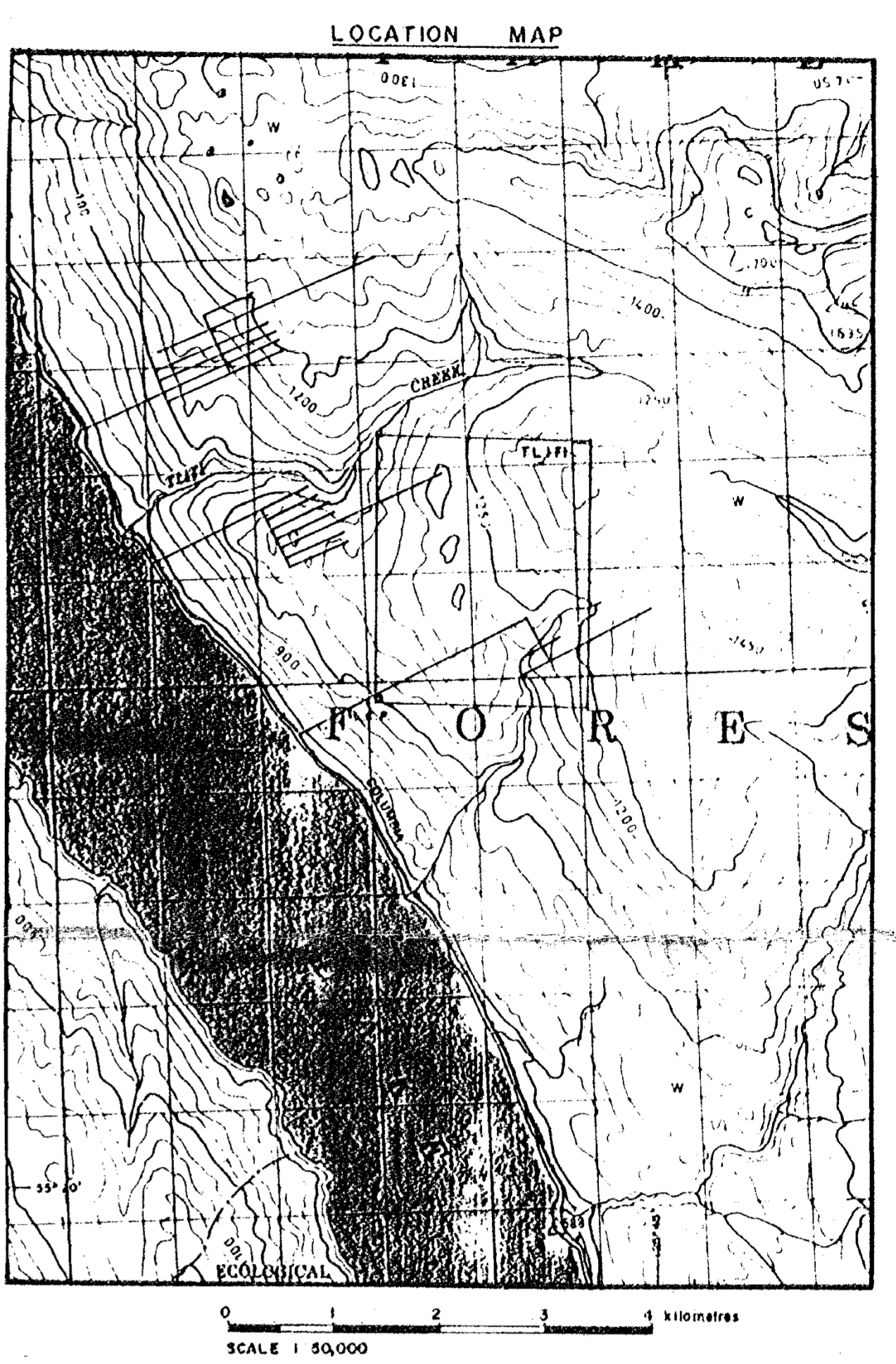
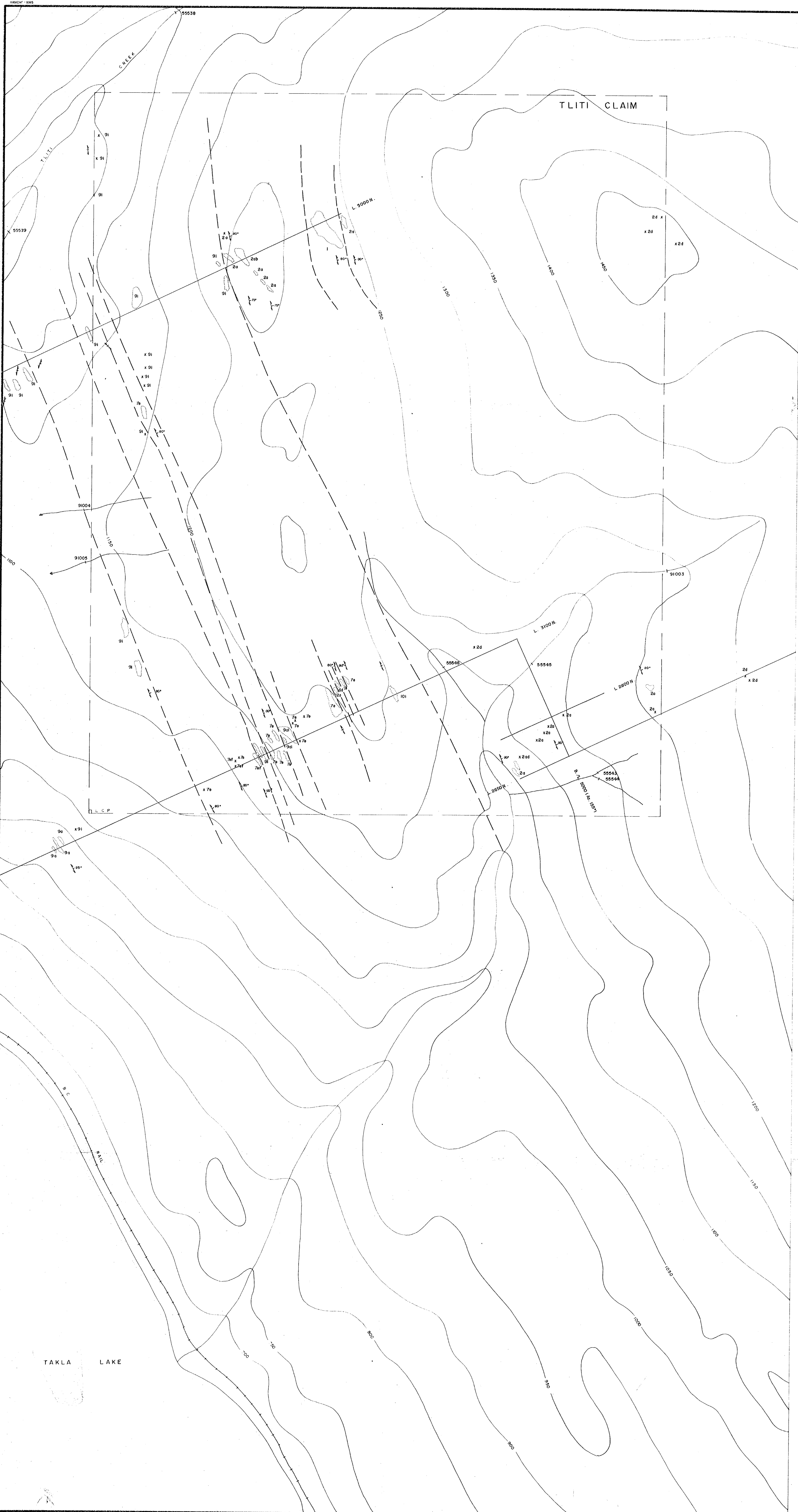
**GEOLOGICAL BRANCH  
ASSESSMENT REPORT**

**15,376**



REVISED	TAKLA NAK	
	TLITI CLAIM	
	MAGNETOMETER SURVEY	
PROJ No 5-88	SURVEY BY S.H.	DATE SEPT, 1988
N.T.S. 33N/5	DRAWN BY S.K.B.	SCALE 5,000
DWG No	<b>NORANDA EXPLORATION</b>	
<b>MAP 3</b>	OFFICE PRINCE GEORGE, B.C.	





**LEGEND**

- UPPER ORNSTADTIAN AND LOWER TRIASSIC
- SUSTUT GROUP
- 13 Sediments
- (a) conglomerate  
(b) sandstone  
(c) shale
- 12 Volcanics
- (a) rhyolite  
(b) andesitic  
(c) basalt
- EARLY JURASSIC
- 11 Paleic Intrusives
- (a) granite  
(b) granodiorite  
(c) diorite
- UPPER TRIASSIC - LOWER JURASSIC
- SITILINA GROUP
- 10 Dacite or Rhyolite
- (a) massive  
(b) porphyritic  
(c) amygdaloidal or vesicular  
(d) pillow  
(e) tuff  
(f) lapilli tuff  
(g) tuff breccia  
(h) agglomerate  
(i) sericitic schist
- 9 Andesite
- (a) massive  
(b) porphyritic  
(c) amygdaloidal or vesicular  
(d) pillow  
(e) tuff  
(f) lapilli tuff  
(g) tuff breccia  
(h) agglomerate  
(i) chlorite schist
- 8 Basalt
- (a) massive  
(b) porphyritic  
(c) amygdaloidal or vesicular  
(d) pillowed
- 7 Clastic Sediments
- (a) conglomerate  
(b) sandstone  
(c) siltstone  
(d) silty phyllite  
(e) phyllite  
(f) graphitic phyllite
- 6 Chemical Sediments
- (a) iron formation  
(b) ironstone  
(c) chert  
(d) chert breccia
- PERMIAN TO TRIASSIC
- 5 Ultramafic Intrusives
- (a) serpentinite  
(b) gabbro
- PERMIAN
- CACHE CREEK
- 4 Basalt
- (a) massive flow  
(b) pillowed flow  
(c) chloritic schist
- 3 Chert
- (a) massive chert  
(b) laminated chert  
(c) chert breccia
- 2 Clastic Sediments
- (a) gray to black phyllite  
(b) graphitic phyllite  
(c) maroon siltstone  
(d) graywacke/siltstone  
(e) sandstone/arkose  
(f) conglomerate
- 1 Limestone (marble)

- SYMBOLS:
- LAKE
- SWAMP
- RIVER, STREAM
- RAILWAY
- ROAD (SECONDARY)
- CLAIM BOUNDARY
- HELICOPTER LANDING
- 1985 NORANDA GRIDS
- CLEAR CUT
- SILT SAMPLE
- GEOLOGICAL SYMBOLS:
- AREA OF ROCK OUTCROP
- ROCK OUTCROP
- FLOAT
- GEOLOGICAL BOUNDARY:
- Defined
- Assumed
- SCHISTOSITY CLEAVAGE, FOLIATION
- 1985 NORANDA GRIDS (Vertical, inclined, dip unknown)
- FAULT
- (Defined, approximate, assumed)

**TABLE OF GEOCHEM ANALYSES**  
(all values in ppm except as noted)

SAMPLE #	TYPE	Cu	Zn	Pb	Ag	Au (ppb)
91003	silt	34	150	2	0.2	10
91004	"	40	130	4	0.2	10
91005	"	32	110	4	0.2	10
91006	"	38	88	1	0.2	10
91007	"	36	120	1	0.2	10
91008	"	100	82	2	0.2	10
91009	"	110	78	2	0.2	10
91010	"	40	100	1	0.2	10
91011	"	38	92	1	0.2	10

**GEOLOGICAL BRANCH ASSESSMENT REPORT**

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REVISIONS


TAKLA NAK  
TLITI CLAIM  
GEOLOGY MAP

PROJ. No. 5-18 SURVEY BY: G.M., L.W. DATE: SEPT., 1985  
N.T.S. 93N/5 DRAWN BY: S.K.B. SCALE: 1:5,000

DWG No. **NORANDA EXPLORATION**  
MAP I OFFICE: PRINCE GEORGE, B.C.