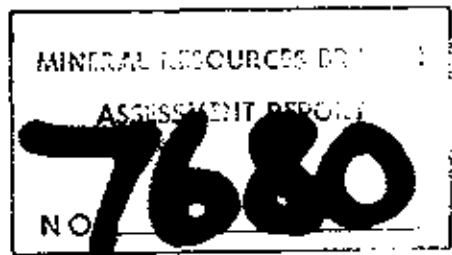


Geology of the Cub, EK and Top 1 Claims

Claims: Cub 438 (7)  
 EK 437 (7)  
 Top 1 592 (8)  
 Liard Mining Division  
 NTS 104 I 9E <sup>38</sup>  
 Latitude 58° <sup>01'</sup> 08" N  
 Longitude 128° <sup>14'</sup> W  
 UNION CARBIDE CANADA LIMITED  
 Report prepared by S. Fraser  
 July 1979



## EK, Cub and Top 1 Claims

### Summary

The Cub claims had been staked as a scheelite prospect in 1975 by W. Kuhn and as part of an option agreement Union Carbide acquired the claims in 1977.

It had been found that anomalously high scheelite grain counts (from panning stream sediment samples) could not be traced to outcrop and therefore Union Carbide sought to determine the property's potential. By running geophysics over property as well as soil sampling, it had been found that scheelite present had mainly come from thin bands of calc-silicate hornfels intercalated within Hadrynian schists. The scheelite present had therefore accumulated in the creeks due to weathering of the canyon walls. Chip sampling of these calc-silicate units further outlined weak mineralization and low tonnage potential.

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### Introduction

The Cub claims were staked by W. Kuhn in 1975 to acquire a scheelite showing southwest of the Turnagain, Cassiar River, junction in north central B.C.

Union Carbide optioned these claims from Mr. Kuhn in 1977 and under a Grubstake agreement with Union Carbide Canada Ltd. Kuhn staked further ground south encompassing the Cub 2, and EK claims, and Top 1 to the east, all as contiguous claims.

### Location

The Cub, Top 1 claims are situated 8 kilometres west south west of the junction of the Turnagain and Cassiar Rivers in north central British Columbia. See figure 1 for location map.

### Access

The main means of transportation into the area is by helicopter from Watson Lake, Yukon, 161km north. Alternate means of transportation include landing on the Turnagain River by float plane and travelling by foot to property or taking a boat up the Liard River and then up the Kechika and onto the Turnagain. Passage would only be as far as the confluence of the Turnagain and Cassiar rivers due to dangerous rapids.

### Physiography

The area is quite rugged and claim area includes heavily forested valley to steepwalled ridges. The area was quite strongly carved with Pleistocene glaciation.

### Claims Data - NTS 1041/9E

<u>Claim</u>	<u>Record No.</u>	<u>No. of units</u>	<u>Date Staked</u>	<u>Expiry Date</u>	<u>Mining Division</u>
Cub	438 (7)	18	July 6/1977	July 6/1979	Liard
Top 1	592 (8)	16	Aug. 1/1978	Aug. 1/1979	Liard
EK	437 (7)	6	July 6/1977	July 6/1980	Liard

Work Done

Union Carbide first examined the Cub claims (known as Cub 1 - having 4 units) during July of 1977 when the writer and assistant E. Retlaine spend two days on the property. The two days on the property were spent mapping and prospecting while panning every 50-75 metres up the creek. While there was little outcrop exposure, considerable scheelite was found in panning - up to 5,000 grains. In prospecting the area for the source only minor calc-silicate skarns were detected and it was felt at the time that most of the mineralization was due to quartz boudins and a large sill along the creek. T. Liverton and C. N. Forster of Union Carbide Exploration night lamped the property in the Fall of 1977 observing little scheelite mineralization.

During 1977 W. Kuhn had done regional prospecting for Union Carbide as part of a Grubstake agreement and had found interesting scheelite bearing float further south. This he staked as the EK claims. He therefore staked the area between the two claims and called it Cub 2.

In 1978 T. Liverton and Ray Cook of Union Carbide further prospected the area and had collectively grouped the above claims into Cub. They had also found interesting mineralization south of the EK claims and staked the property as the Wilton claims. The Top 1 claims were further staked in 1978, as were Top 2 and Top 3, to cover the schist/quartz monzonite contacts to the east.

In 1979 it was felt the original Cub 1 was the main area of interest. here a north-south baseline was put in and lines were run from it. Line cutting was required for all of the lines as area was in dense brush. Soil sampling was carried out with five pound samples taken every 50 metres.

While a fraction of the sample was analyzed for molybdenum and tungsten, most of the sample was panned for scheelite grain count. In prospecting the area some chip sampling was also carried out with sample being assayed for per cent  $WO_3$  only.

Geophysics was also carried out using a proton magnetometer and VLF EM-16 unit.

#### Geology

The claims cover a series of phyllitic and chloritic schists and minor calc-silicates in contact with a Cretaceous quartz monzonite stock. There is little exposure of outcrop on the area worked, the original Cub 1 claim, but to the south and east there is much outcrop. The contact of the quartz monzonite stock runs northerly paralleling the bedding.

Within the area of interest quartz veining is common with large boudins commonly observed in outcrops along the creek.

West of the main creek thin bands of garnet-diopside skarn and minor sulphide skarn were observed intercalated within schists.

#### Geophysics

Geophysics was carried out using a proton magnetometer and a VLF EM-16 unit. VLF data is shown in figure 2. The magnetometer data is considered useless as magnetics at the time were too variable. The magnetics does help to show there were no very strong anomalies with total range in the order of 400 gammas.

While the magnetics give little useful information the VLF indicated a good conductor axes running parallel to the creek. This probably represents a fault zone. West of the baseline there is another conductor between 200N and 300N. This represents the sulphide zone observed in out-

crops whose sample assayed 0.65%  $WO_3$  across 0.7 metres.

### Sampling

A total of 123 soil samples were taken on the Cub property with samples being panned for scheelite grain count and fractions of each sample analyzed for Mo and W. Figure 3 outlines in contours the scheelite grain distribution on the property.

The contoured map shows that most of the anomalies lie adjacent to the creek and the assumed fault beneath. While there are some high results (east of baseline at 150N) there is generally erratic highs only.

Chip sampling west of the baseline revealed some scheelite mineralization in diopside garnet skarn and sulphide skarn but these zones were of very limited dimensions.

Sample number 9W 4 having a thickness of 0.45 metres of garnet rich skarn assayed 0.01%  $WO_3$ .

Sample number 9W 6 having 0.7 metres assayed 0.68%  $WO_3$  at line 300N. The sample consisted of a sulphide with calc-silicate skarn.

Below 9W 6 just 1 metre west of the creek 9W 7 was sampled. The sample consisted of a rusty weathering hornfels with traces pyrrhotite - assaying 0.08%  $WO_3$ .

### Conclusions

While there were significantly anomalous counts of scheelite grains found in soil sampling, zones are not consistent. While there is not much outcrop exposure, where calc-silicate zones were exposed their dimensions were noted to be minimal and having weak grade of mineralization.

Geophysics further showed there was little potential with depth and that the conductor axes paralleled a fault system .

It is, therefore, suggested that property be returned to W. Kuhn.

*SV*

COST STATEMENT FOR CUB, TOP 1 CLAIMS

Man hours worked	3,480.00
Instrument Rental	20.00
Assays & Analyses	844.50
Drafting Costs	625.00
Accommodation	1,125.00
Geophysical	440.00
Linecutting	412.00
Helicopter Costs	2,432.75
Fuel	<u>351.00</u>
	\$9,730.25
Request PAC withdrawal	<u>2,469.75</u>
	<u>\$12,200.00</u>



COST STATEMENT - ASSESSMENT FOR CUB, TOP 1 CLAIMS

Man hours worked

S. Fraser	UCEX staff geologist - soil sampling, linecutting, geophysics June 23-29, July 1-3, 9 1/2 days @ \$120 per day	\$1,140.00
T. Liverton	UCEX staff geologist - soil sampling, prospecting, linecutting June 12, June 23-29th, July 1-3 11 days @ \$120 per day	1,320.00
P. Levesque	UCEX assistant geologist - soil sampling, prospecting, linecutting, geophysics June 12, June 25-29, July 1-3 9 days @ \$60 per day	540.00
D. Simpson	UCEX assistant geologist - soil sampling, linecutting June 25-29, July 1-3 8 days @ \$60 per day	480.00
		<u>\$3,480.00</u>

Instrument Rental

1 VLF EM-16 unit. Use of instrument July 2, 3 @ \$70 per week \$20.00

Assays & Analyses

123 Soil samples analyzed for W @ \$3.00 per sample	369.00
123 " " " Mo @ \$1.30 " "	196.80
123 Sample preparations (-80 mesh) @ 0.45	55.35
123 " " (-40+80 mesh) @ 0.045	55.35
123 " " (shatterbox @ \$1.00	123.00
5 Chip samples assayed for $\text{WO}_3$ @ \$9.00	45.00
	<u>\$844.50</u>

Drafting Costs

	100.00	
1:10,000 Pencil manuscript mapping with a 20 metre contour interval	<u>\$25.00</u>	<u>\$625.00</u>

Accommodation

37.5 days @ \$30 per man per day \$1,125.00

Geophysical

1 VLF EM-16 survey July 2, 3, - 5.5 line kilometres  
@ \$40/line kilometre 220.00

Proton magnetometer survey 5.5 line kilometres  
July 2, 3 @ \$40/line kilometres 220.00

\$440.00

Linecutting

June 25-29, July 1 - 5.5 line kilometres @ \$75/line kilometre \$412.00

Helicopter Costs

13.5 hrs. @ \$185 per hr. \$2,432.75

Fuel

13.5 hrs. @ \$1.30 per gallon  
6 barrels 100/130 aviation fuel at \$58.50 per barrel \$351.00

CUB	18 units	4 years	7,200
EK	6 units	3 years	1,800
TOP 1	16 units	2 years	<u>3,200</u>
			<u>\$12,200</u>

STATEMENTS OF QUALIFICATIONS OF AUTHOR

STUART FRASER: Graduated from Dalhousie University, Halifax, Nova Scotia with B.Sc. Degree in Geology and Chemistry in 1973.

Experience

- 1973 - 1975: Underground geologist with Granduc Operating Company in Stewart, B.C.
- 1975: Summer's work with Union Carbide Exploration Corporation, Vancouver, working as exploration geologist in northern B.C.
- 1975 - 1977: Mine geologist with Echo Bay Mines Ltd., Port Radium, N.W.T., supervising underground grade control, underground mapping, laying out diamond drill holes and core logging.
- 1977 to present: Project geologist with Union Carbide Exploration Corporation working throughout Canada.

To: Union Carbide Corp.

REPORT NO. A29 - 542

PAGE No. 1

**BONDAR-CLEGG & COMPANY LTD.**

DATE: July 24, 1979

930 - 800 West Pender Street  
Vancouver, B.C.  
V6C 2V6

**CERTIFICATE OF ASSAY**

Samples submitted: July 16, 1979  
Results completed: July 24, 1979  
PROJECT: 072

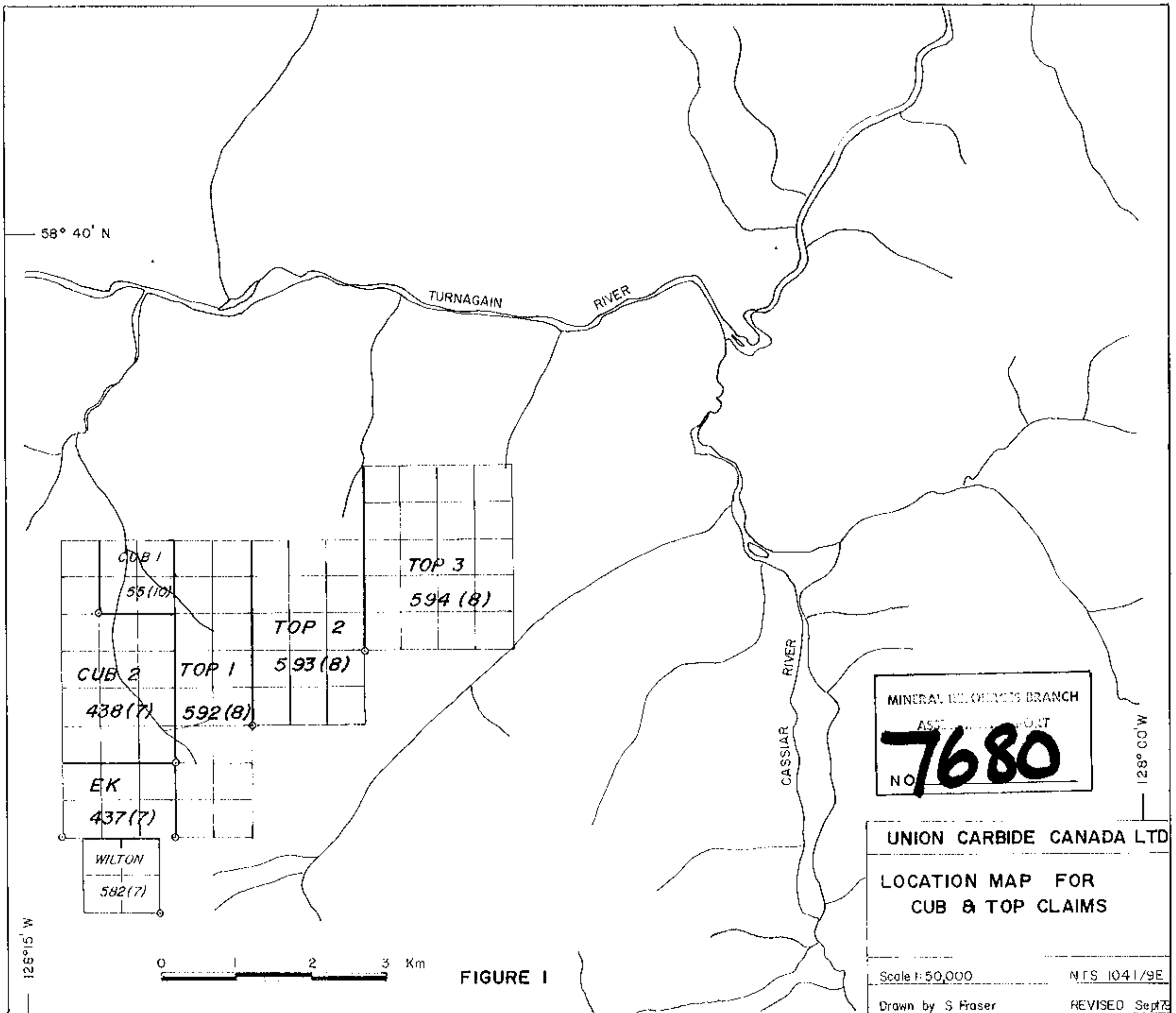
*I hereby certify* that the following are the results of assays made by us upon the herein described ore samples

MARKED	GOLD		SILVER		W						
	Ounces per Ton	Grams per Metric Ton	Ounces per Ton	Grams per Metric Ton	Percent	Percent	Percent	Percent	Percent	Percent	Percent
9W 3					0.01						
4					0.01						
5					0.01						
6					0.52						
7					0.07						

cc Mr. S. Frazer

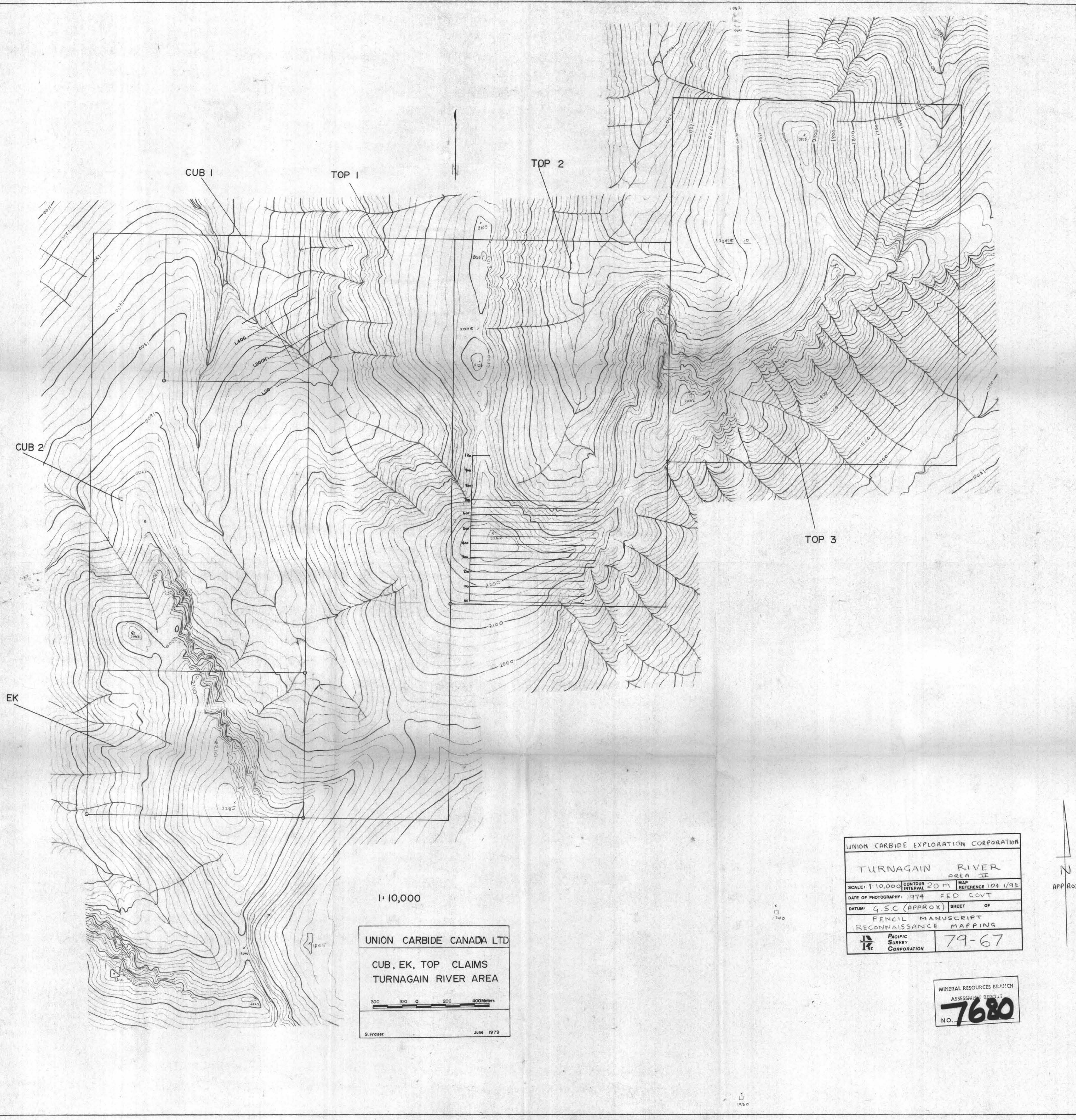
NOTE:  
Rejects retained three weeks  
Ips retained three months  
less otherwise arranged.

Registered Assayer, Province of British Columbia





2110



CUB 2

CUB 1

TOP 1

TOP 2

TOP 3

EK

1:10,000

UNION CARBIDE CANADA LTD

CUB, EK, TOP CLAIMS  
TURNAGAIN RIVER AREA

300 100 0 200 400 Meters

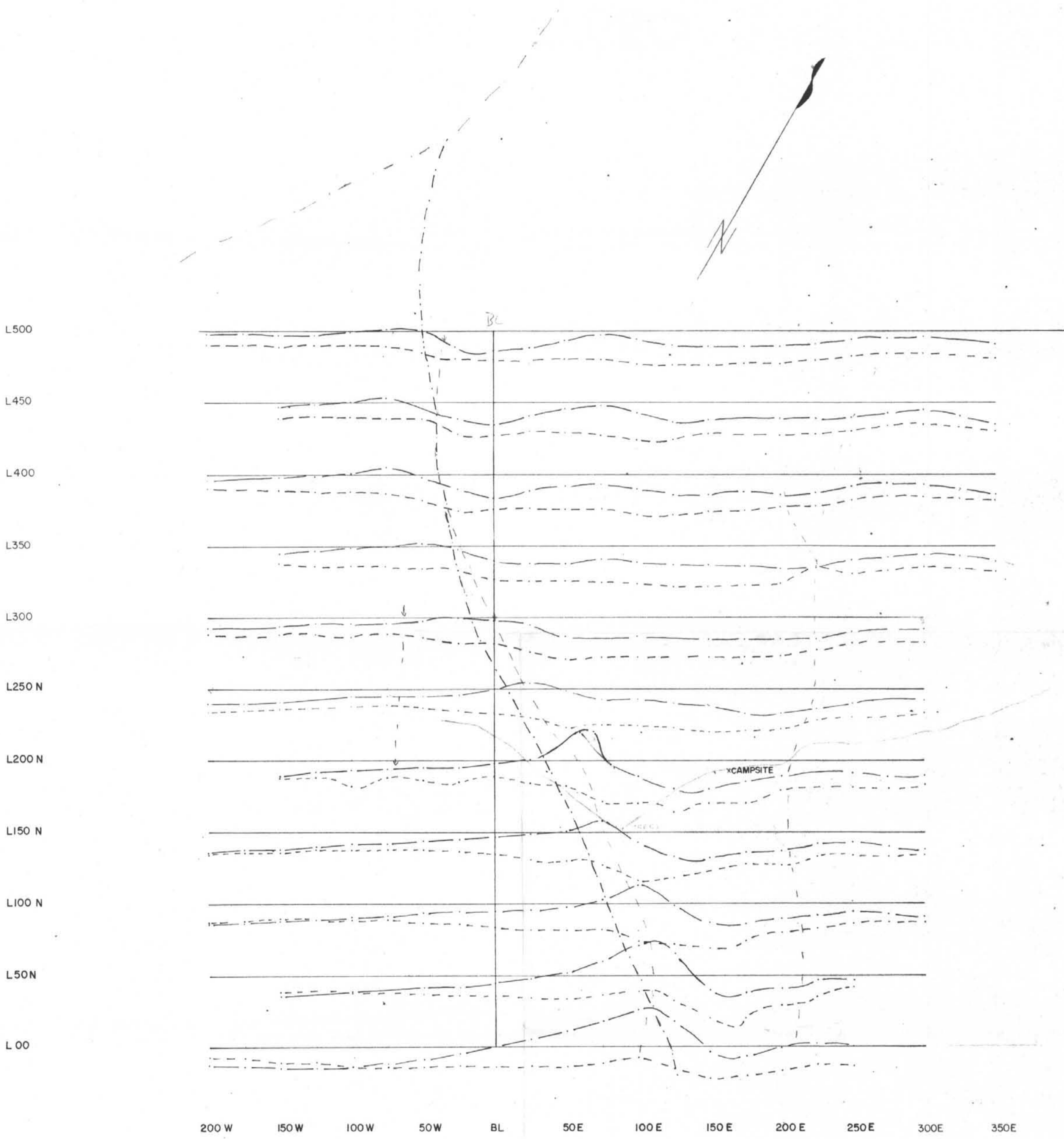
S. Fraser June 1979

UNION CARBIDE EXPLORATION CORPORATION		
TURNAGAIN RIVER AREA II		
SCALE: 1:10,000	CONTOUR INTERVAL 20 M	MAP REFERENCE 104 1/9E
DATE OF PHOTOGRAPHY: 1974	FED GOVT	
DATUM: G.S.C (APPROX)	SHEET	OF
PENCIL MANUSCRIPT RECONNAISSANCE MAPPING		
	PACIFIC SURVEY CORPORATION	79-67

N  
APPROX

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
NO. 7680





L500  
L450  
L400  
L350  
L300  
L250 N  
L200 N  
L150 N  
L100 N  
L50 N  
L00

200 W 150 W 100 W 50 W BL 50 E 100 E 150 E 200 E 250 E 300 E 350 E

Instrument faces west

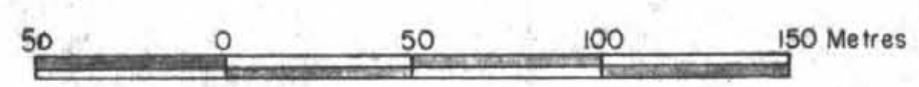
IN PHASE ✓  
 QUADRATURE ✓  
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 VERTICAL SCALE 1cm = 20%  
 INSTRUMENT GEONICS EM 16  
 FREQUENCY 18.6 KHz  
 STATION SEATTLE, WASHINGTON  
 OPERATOR S. Fraser  
 --- Conductor

Creek

MINERAL RESOURCES BRANCH  
 ASSESSMENT DIVISION  
**7680**  
 NO

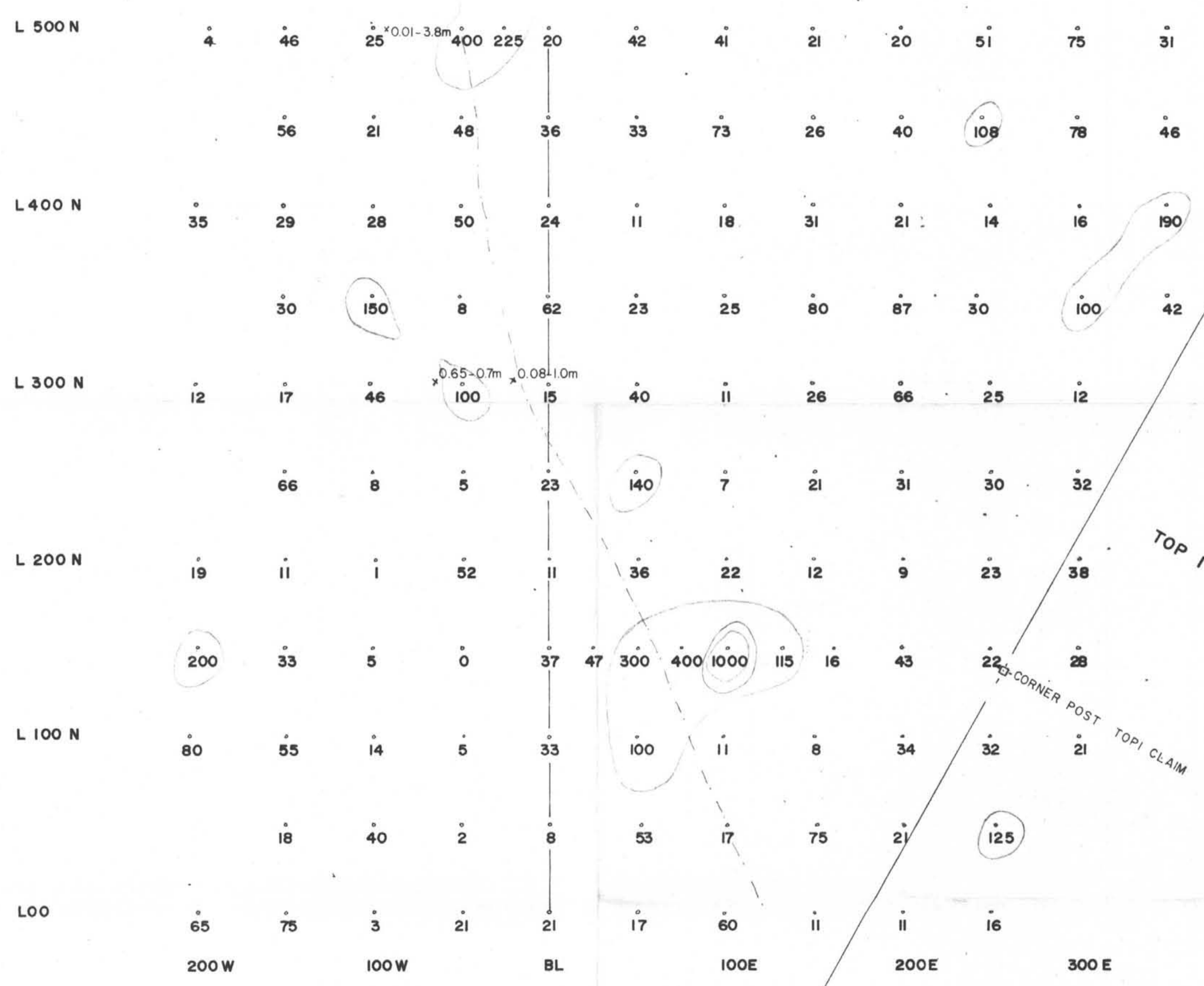
UNION CARBIDE CANADA LTD.  
 SUITE 930 - 800 WEST PENDER ST. VANCOUVER B.C.

CUB CLAIMS NTS 1041 /9E  
 VLF-EM SURVEY



AUTHOR S. Fraser	DRAFTED BY S.F.	FIGURE No. 2
SCALE 1:2000	REVISED:	FILE No:

CUB



30 Panned scheelite grain count and location.

Contour intervals

>100	<500
>500	<1000
>1000	

x0.65-0.7m Chip sample and WO assay with location.

UNION CARBIDE CANADA LTD

# CUB CLAIMS

## SOIL SAMPLE SURVEY

MINERAL RESOURCES BRANCH  
ASSESSMENT REPORT  
**7680**  
NO

AUTHOR S.F., T.L., D.S., P.L.	DRAFTED BY S. Fraser	FIGURE 3
SCALE 1:2000	REVISED	FILE No