

CANADIAN SUPERIOR EXPLORATION LIMITED

Kamloops

British Columbia

PROPERTY FILE

SOUVENIR PROJECT

Kamloops M.D.

NTS 82 M/5

SUMMARY REPORT

82M049 GRIZZLY

J. Baker

November 30, 1971

SMITHERS COPY

TABLE OF CONTENTS

	<u>PAGE</u>
INTRODUCTION	1.
SUMMARY	1.
CONCLUSIONS	2.
RECOMMENDATIONS	2.
LOCATION AND ACCESS	2.
PHYSICAL FEATURES	3.
CLAIM STATUS	3.
PREVIOUS WORK	3.
REGIONAL GEOLOGY	3.
GEOLOGY	4.
Lithology	4.
Intrusive	4.
Structure	5.
Metamorphism	5.
Alteration	5.
Mineralization	5.
ECONOMIC GEOLOGY	5.
GEOCHEMISTRY	6.
GEOPHYSICS	7.
DIAMOND DRILLING	7.

APPENDICES:

- A - Claim Schedule
 - Certificate of Work
 - Property Location Map
 - Claim Map
- B - Geology
- C - Geochemistry Contour Plan
- D - I.P. % F.E. Contour Plan
 - I.P. Plan
- E - Drill Sections
 - Drill Logs

INTRODUCTION

The Souvenir Mines property is situated along the southeast contact of the Harper Creek batholith, on the southeast side of the north end of East Barriere Lake. In October, 1971 Souvenir Mines Ltd. and Canadian Superior Exploration Limited entered into an option agreement whereby the latter could earn a majority interest in the property.

This report summarises work done on the Souvenir property to date.

SUMMARY

The claims are underlain by late Paleozoic metasediments and metavolcanics adjacent to the southeast contact of the Harper Creek batholith. Several major showings, notably the Noranda deposit, occur in similar host rocks elsewhere along the margins of the batholith and particularly within chloritic metavolcanic units. These deposits are all susceptible to geochemistry and I.P.

Work done by Canadian Superior on the Souvenir property consisted of approximately 8 line miles of soil and silt geochemical surveys, 2 1/2 line miles of I.P. and 1,500 feet of diamond drilling. The purpose of this work was to test the northwesterly extension of an I.P. and copper geochemical anomaly on the adjoining Bex property, between the Bex/Souvenir boundary and East Barriere Lake. Previous trenching by Souvenir Mines adjacent to the East Barriere Lake road indicated a sparsely mineralized chloritic zone approximately 200 feet wide lying on strike with the projected trend of the geochemical and I.P. anomalies.

I.P. surveys established sulphide continuity between the Bex boundary and the Souvenir trench. Soil sampling of the zone southwest of trenched exposures indicated a strong geochemical anomaly lying within the broad I.P. anomaly. Three 500 foot BQ diamond drill holes at sections

2.

1,600 feet apart were completed by Connors Drilling at a cost of approximately \$15,000.

Results were not encouraging: pyrrhotite, pyrite and very minor chalcopyrite locally amounting to 2% total sulphide content, occur as fine disseminations in locally chloritic quartz biotite gneiss. The best intersection DDH 71-4, 20' - 180' assayed 0.13% Cu. Trenching along the drill road indicated that much of the overburden was residual, thus accounting for enriched soil values. Sufficient disseminated sulphides were intersected to account for the anomalous I.P. response.

CONCLUSIONS

Ore potential of the anomalous zone appears to be very limited. Trenching by Souvenir at Section 10 N and drilling by Canadian Superior at Section 4 N and 12 S intersected narrow widths of sub-oregrade mineralization.

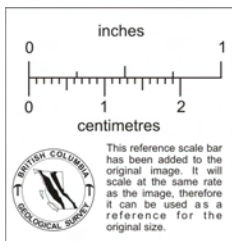
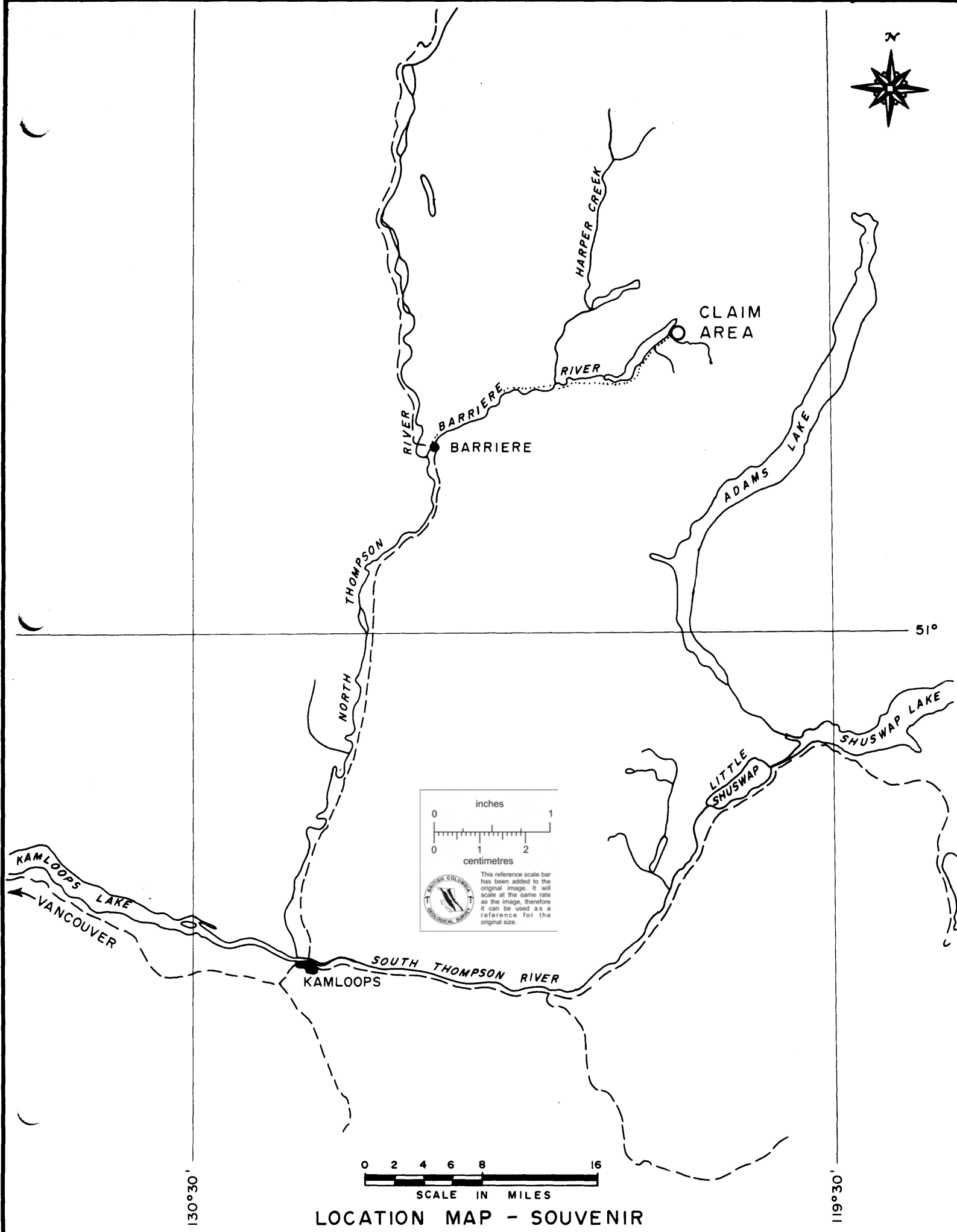
RECOMMENDATIONS

Diamond drilling of geochemical and geophysical anomalies provided little encouragement. It is therefore recommended that the option agreement be terminated.

LOCATION AND ACCESS

The property is located approximately 15 miles east of Barriere, on the southeast shore of the northeast end of East Barriere Lake. Access to the claims is via 13 miles of improved gravel road from Barriere. Thence via 9 miles of unimproved gravel road from the southwest end of East Barriere Lake.

For the purposes of mining operations the property is strategically located with regard to transportation links, source of electric power and water supply.



LOCATION MAP - SOUVENIR

PHYSICAL FEATURES

The property is situated on a Northwesterly facing slope to East Barriere Lake exhibiting a relief of approximately 1,400 ft. with gradients of the order of 30%. Overburden is for the most part minimal particularly on the northeastern section of the property. A mantle of up to 10' of glacial drift deposited by ice movement from the northeast covers the southwestern sector.

Cedar and hemlock rainforest with patches of pine trees characterise most of the area.

CLAIM STATUS

The property consists of 33 apparently contiguous claims held by Souvenir Mine Limited. The location of some, namely, the Sou 1-8 claims are uncertain. A description of the claims is appended.

PREVIOUS WORK**PROPERTY FILE**

Previous work on the property has been summarised by Angus MacKenzie, P. Eng, in reports prepared for Souvenir Mines Ltd., dated June 1969 and July 1970. Prior to 1968 trenching exposed a mineralized quartz vein near Fison Creek and sparse chalcopyrite mineralization disseminated in chloritic and sericitic quartz biotite gneiss 1,400' northeast of John Creek. A 150' vertical diamond drill hole subsequently collared over a mineralized section of the Grizzley trench adjacent to the East Barriere Lake road returned low values ($<0.15\%$ cu) in copper. An EM 16 survey in 1968 was inconclusive. A reconnaissance magnetic survey in 1970 indicated an area of increased but erratic magnetic response over the Grizzley trench.

REGIONAL GEOLOGY

The Harper Creek batholith (Cret.) intruded a folded sequence of Cache Creek (Permian) metavolcanics and metasediments. Related to this intrusion were the development of a gneissic zone peripheral to the

batholith and an open syncline parallel to the South contact.

Within the country rock a favorable metavolcanic unit characterised by quartz-eye rhyolite trends northwesterly across the Barriere Lake area. The Souvenir property covers part of the gneissic southeastern section of this unit adjacent to the contact.

GEOLOGY

Little geologic mapping was performed on the property. It appears however that the northeastern part of the property is underlain by predominantly metavolcanic rocks and the southwestern part by metasedimentary units. Several conformable biotite granodiorite dikes intrude the metamorphic sequence. The unexposed contact with the main batholith lies approximately 2,000' northeast of the property.

Lithology

Metamorphic - The metavolcanic unit consists largely of rhyolitic deviatives which become more gneissic towards the batholithic contact. In the Grizzley trench, shear zones paralleling the foliation of medium-grained quartz biotite gneisses gives rise to quartz sericite schists. Within the broad area of sulphide mineralization, there appears to be a marked increase in the amount of chlorite, brown biotite and locally sericite, imparting a purplish tinge to much of the quartz-biotite gneiss.

Metasedimentary rocks consisting of quartzite and grey pelitic schist are poorly exposed on the property and their occurrence is inferred largely from work on the adjoining ground.

Intrusive

A conformable biotite granodiorite dike exposed in the Grizzley trench is the only intrusive rock type noted on the claims.

Structure

(a) Folding:

In the vicinity of the IP anomaly the quartz biotite gneiss trends 290° dipping approximately 50° southwest. Anomalously steep dips noted in the Grizzley trench appear to be a local phenomenon related to a high angle fault trending 300° . Flatter dips of the order of 26° occur near Fison Creek.

(b) Faulting:

The predominant fracture direction parallels the North-Easterly trend of regional faults in the Barriere Lakes Area. Fracture density on the property is nowhere intense.

Two fault zones occur in the Grizzley trench; moderately strong shearing parallel to foliation of the gneisses and a high angle fault trending 300° dipping 75° to the south. Of the two, the former appears to be related to mineralization.

Metamorphism

Low grade regional metamorphism probably accompanied an early period of folding. A gneissic zone peripheral to the batholith may be contact metamorphic in origin. No economic significance is attached to metamorphism.

Alteration

No widespread alteration occurs on the property.

Mineralization

Chalcopyrite is the only economic mineral noted. Pyrrhotite and pyrite occur disseminated within the area of the IP anomaly but are not proportionately related to copper content.

ECONOMIC GEOLOGY

Two mineralized areas are known; the east zone and the quartz vein, with the former being the most significant.

East Zone: (L.20 S 80 W to L.0 S 100 W) Sparse chalcopyrite occurs conformably as disseminations in locally sheared fine to medium grained quartz biotite gneiss, a rhyolite derivative. An increase in brown biotite, the development of chlorite and to a lesser extent sericite, characterise mineralized zones. No major structural controls other than the possible relationship of mineralization to gently dipping shear zones, are evident.

The absence of strong secondary structures and widespread shearing in rhyolite units as observed on nearby properties, may bear a direct relationship to low copper values.

Quartz Vein: (L. 4 S 100 W) Chalcopyrite is sparsely and unevenly distributed within a 1' - 2' wide conformable quartz vein trending N.55 W near Fison Creek. Wall rocks are unmineralized.

GEOCHEMISTRY

Survey Method

A soil geochemical survey was conducted over unexposed sections of the property hitherto untested by trenching, particularly southwest of the Grizzley trenches.

Soil sampling of the "B" horizon at chained 200' intervals along blazed and flagged lines 400' apart was utilised to locate anomalous areas. Control was provided by a base line (100 W) and five tie lines (40 W, 70 W, 130 W & 160 W).

Sample analysis

All samples were dried and sieved to remove the minus 80 mesh fraction which was then analysed for total Copper content using hot HNO₃ extraction. Sample preparation and analysis was performed by Falconbridge Nickel Mines laboratory in Vancouver.

Results

Values in excess of 100 ppm copper were considered anomalous. On this basis two geochemical anomalies are indicated.

7.

(a) East Anomaly: A strong soil anomaly 2,500' long x 800' wide (100 - 2,300 ppm Cu) from L.20 S to L.0 S indicated a mineralized zone extending from the Souvenir/Bex boundary to the Grizzley trench with a trend paralleling that of the underlying gneisses. Overburden in this area is very shallow and may be largely residual in origin.

(b) West Anomaly: Anomalous values coincided with the area of the mineralized quartz vein.

GEOPHYSICS

Survey Method:

2 1/2 line miles of IP were run to locate possible drill targets in the eastern geochemical anomaly. Alternate geochemical survey lines (800' apart) were used for the IP survey.

Instrumentation:

Instrumentation for the survey consisted of a McPhar P 660 (frequency domain) IP unit with operating frequencies of $0.3H_z$ and $5H_z$. Electrode spacing was maintained at 300'. Multiple electrode separations were taken to $N=3$.

Results:

A strong well defined conductor 1,000' wide was coincident with the area of high geochemical values. IP response as indicated by an $n=2$ PFE contour plot exhibiting values of up to 10% reached a maximum of five times background. Accompanying this increase in frequency effect was a pronounced resistivity low.

DIAMOND DRILLING

Three 500'BQ wireline diamond drill holes located to intersect IP and geochemical anomalies at sections 1,600' apart were completed by Connors Drilling Ltd. at a cost of \$15,000.

Drilling results were not encouraging. Sulphide mineralization consisted primarily of pyrrhotite, pyrite with only minor amounts

of chalcopyrite. The best section, DDH-71-4, 20' - 180' assayed 0.13% Cu. Total sulphide content of the anomalous zone ranged from 0.5% to >2%, offering a plausible explanation of IP response. In view of the residual nature of much of the overburden, the amount of chalcopyrite is considered sufficient to account for the soil anomaly.

DDH 71-4 (Section 12 s)

Location: 2,060' west from T/c 70W. 250's from L 12 s
 Bearing: N-20-E
 Dip: -45°
 Depth: 500' (16' overburden)
 Purpose: To test coincident geochem and IP anomalies
 Results: Quartz biotite gneiss was encountered throughout. Mineralization encountered consisted of pyrrhotite, pyrite and minor chalcopyrite. The best intersection 20' - 180' averaging 0.13% Cu corresponded to a noticeable increase in chlorite and "brown biotite" which imparted a purplish tinge to the rock. Total sulphide content ranged from 1% - 2% decreasing rapidly below 300'.
 The drill hole intersection corresponded closely with the IP and geochemical anomalies indicating some form of geochemical enrichment had occurred such that soil values correspond semi-quantitatively with the copper content of the underlying rock.

DDH 71-5 (Section 12 s)

Location: 120' S-35'E from L 16 s 96 W
 Bearing: N-20°-E
 Dip: -45
 Depth: 500' (16' overburden)
 Purpose: To test the western part of the IP conductor.

Results: Rock type consisted primarily of quartz biotite gneiss becoming more chloritic from 250' - 400'. Three narrow bands of quartz-eye rhyolite were noted near the top of the hole. Total sulphide content averaged less than 1% and no appreciable amount of copper occurred anywhere in the 480' of sample length. It was concluded that the cause of the major part of the IP anomaly is further to the northeast.

DDH 71-6 (Section 4N)

Location: 250' west from B/L 100 W. 60'S from L. 4N. in old trench.

Bearing: N-20°-E

Dip: -45°. (16' overburden)

Depth: 500'

Purpose: To test the projected extension of the IP and geochemical anomalies.

Results: Lithology closely resembled that in DDH 71-4 but with less chlorite evident. Pyrrhotite pyrite and minor chalcopyrite were encountered in the upper 100'. The best intersection 20'-90' averaged 0.13% Cu.

It is concluded that IP and geochemical response is due to narrow widths of very low grade copper mineralization.

APPENDIX A - CLAIM SCHEDULE

SOUVENIR PROJECT

<u>CLAIM NAME & NO.</u>	<u>RECORD NO.</u>	<u>EXPIRY DATE</u>	
Grizzly 1	59521	August 25, 1975	
	2	59522	August 15, 1975
	3	59523	August 15, 1975
	4	59524	August 15, 1975
	5	59525	August 15, 1975
	6	59526	August 15, 1975
Ken 1	65905	August 25, 1975	
	2	65906	August 25, 1975
	3	65907	August 25, 1975
	4	65908	August 25, 1975
	5	65909	August 25, 1975
	6	65910	August 25, 1975
	7	65911	August 25, 1975
	8	65912	August 25, 1975
	9	65913	August 25, 1975
	10	65914	August 25, 1975
	11	65915	August 25, 1975
	12	65916	August 25, 1975
Cu 1	65898	August 25, 1975	
	2	65899	August 25, 1975
	3	65900	August 25, 1975
Sou 1	87677	March 20, 1976	
	2	87678	March 20, 1976
	3	87679	March 20, 1976
	4	87680	March 20, 1976
	5	87681	March 20, 1976
	6	87682	March 20, 1976
	7	87683	March 20, 1976
	8	87684	March 20, 1976
Joke 1	90612	August 11, 1976	
	2	90613	August 11, 1976
	3	90614	August 11, 1976
	4	90615	August 11, 1976



THE GOVERNMENT OF
THE PROVINCE OF BRITISH COLUMBIA

DEPARTMENT OF MINES
AND PETROLEUM RESOURCES

MINERAL ACT

(Section 51)

FORM B

Affidavit on Application for Certificate of Work

I, W. Rainboth (Name) Agent for Canadian Superior Exploration Limited (Name)
465 Victoria St. (Address) 2201-1177 W Hastings St. (Address)
Kamloops Vancouver
 Free miner's Certificate No. 102 338 Free Miner's Certificate No. 102 352
 Date issued MAY 14/71 Date issued MAY 14/71

make oath and say:—

2. I have done, or caused to be done, work on the KEN 1 Mineral Claim(s)

Record No.(s) 65905
 situate at East Banner Lake in the Kamloops Mining Division,
 to the value of at least 9900. dollars. Work was done from the 8 day
 of November, 1971, to the 21 day of November, 1971

3. The following is a detailed statement of such work:—

(Set out full particulars of the work done in the twelve months in which such work is required to be done. There are three types of work: (1) Physical (trenching, drilling, tunnelling, and overburden removal); (2) road or trail work; (3) geological, geochemical, geophysical (includes line-cutting). The total value of each type of work and the number of years' work and type to be applied to each claim must be shown below.)

990 feet of diamond drilling. Apply 3 certificates of work to each of the following claims

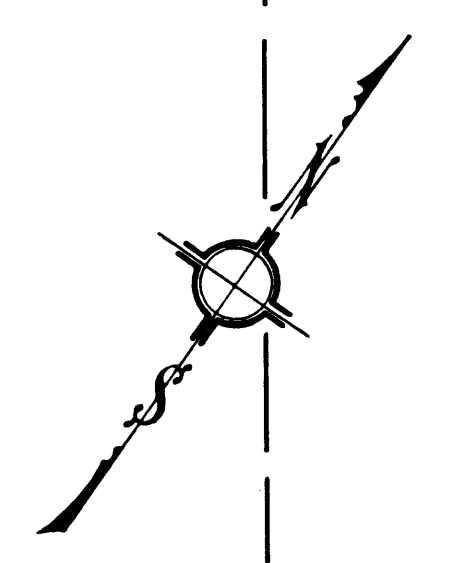
<u>GRIZZLY</u>	<u>1 - 6 incl.</u>	<u>-</u>	<u>Rec No.</u>	<u>59521-26 incl.</u>
<u>KEN</u>	<u>1 - 12 incl.</u>	<u>-</u>	<u>"</u>	<u>65905-16 incl.</u>
<u>CU</u>	<u>1 - 3 incl.</u>	<u>-</u>	<u>"</u>	<u>65898-900 incl.</u>
<u>SCU</u>	<u>1 - 8 incl.</u>	<u>-</u>	<u>"</u>	<u>87677-84 incl.</u>
<u>JCKE</u>	<u>1 - 4 incl.</u>	<u>-</u>	<u>"</u>	<u>90612-15 incl.</u>

4. That I have not and will not use the work declared herein in any way for the purposes of obtaining tax exemption on a Crown-granted mineral claim under the terms of the *Taxation Act*.

SWORN and subscribed to at

this 5 day of JAN 5/72
 1972, before me—

* This affidavit may be taken by a person empowered to take affidavits by the Evidence Act of British Columbia.



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108+00S
112+00S
116+00S

EAST BARRIER LAKE

GRIZZLEY 3

GRIZZLEY 1

GRIZZLEY 5

KEN 2

GRIZZLEY 4

KEN 1

GRIZZLEY 2

KEN 7

GRIZZLEY 6

KEN 3

CU 3

KEN 11

KEN 9

KEN 8

KEN 4

CU 1

KEN 10

KEN 12

CU 2

CAMP

Deerhill Cr.

Fish Cr.

John Cr.

20 MILES TO BARRIER

20 MILES TO BARRIER

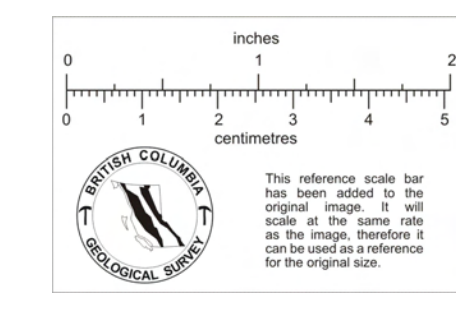
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TIE LINE 136+00.00 W.

BASE LINE 100+00.00 W.

TIE LINE 40+00.00 W.

— LEGEND —



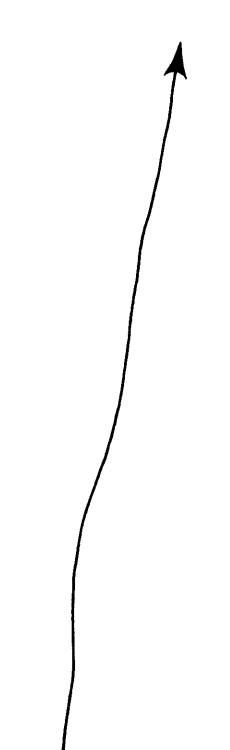
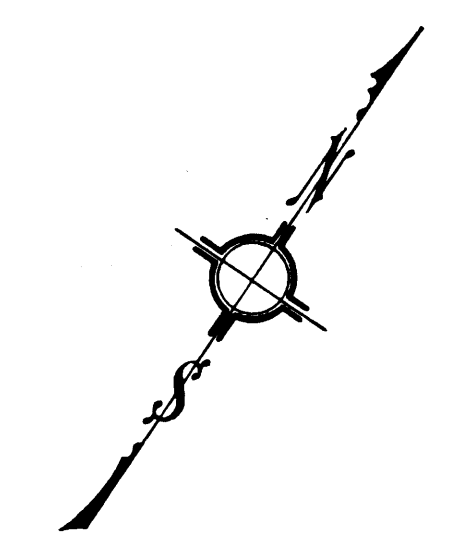
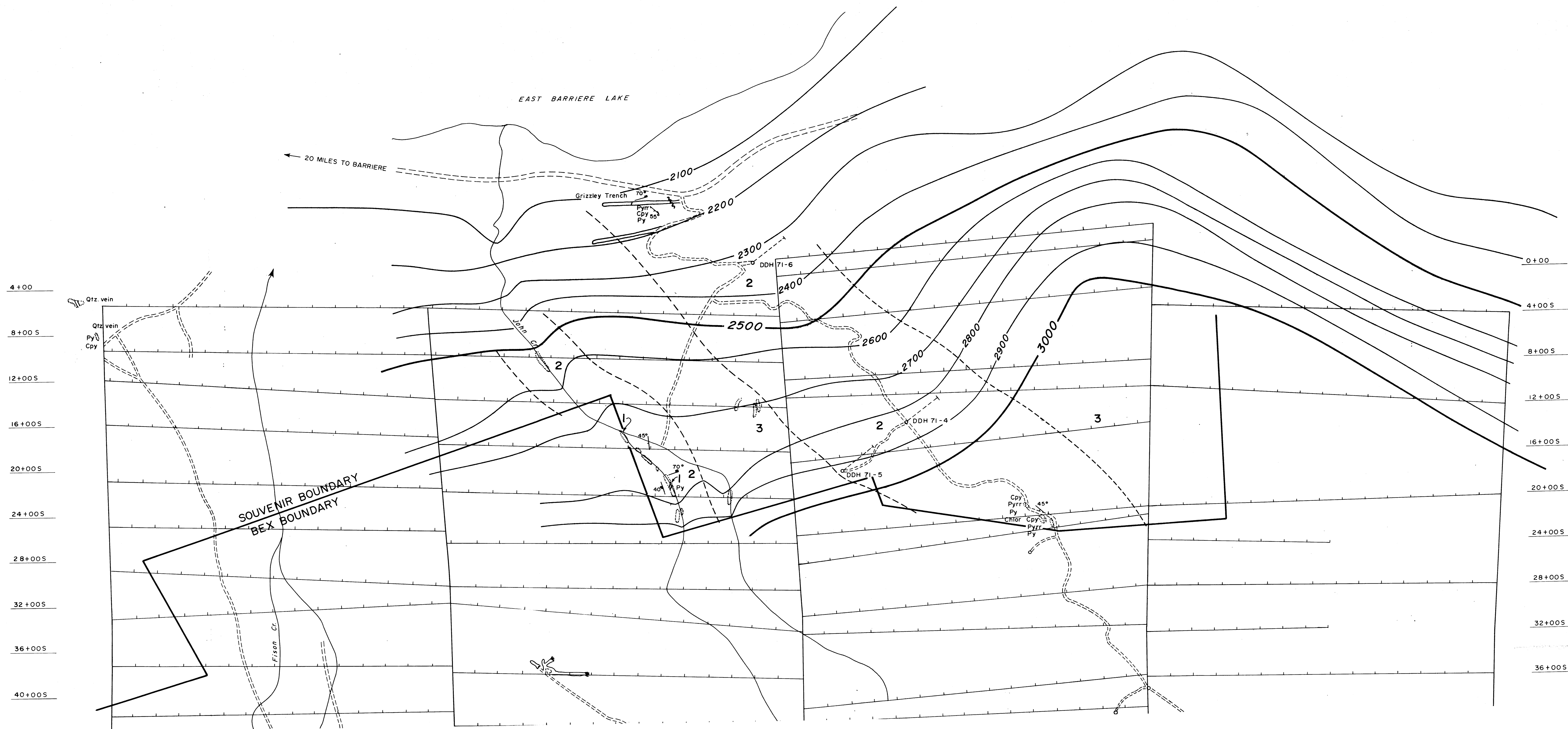
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SCALE IN FEET

CANADIAN SUPERIOR EXPLORATION LIMITED
KAMLOOPS, B.C. BRITISH COLUMBIA

KAMLOOPS, M.D. 82 M/5E
SOUVENIR PROJECT

PROPERTY FILE
CLAIM MAP

Scale: 1" = 400'
Drawn By: Graphic Supply & Service Center Date: November 26, 1971
Dwg. No.



TIE LINE 160+00 W

TIE LINE 130+00 W

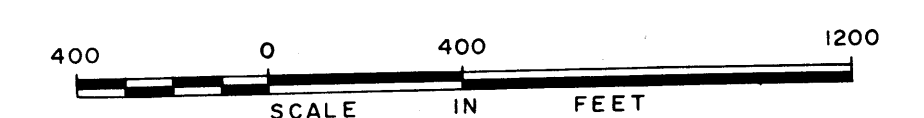
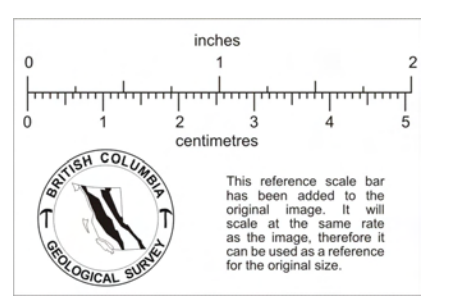
BASE LINE 100+00 W

TIE LINE 40+00 W

LEGEND

- INTRUSIVE**
- 1 BIOTITE QUARTZ DIORITE, LOCALLY PORPHYRITIC
- METAMORPHIC**
- 2 QUARTZ-BIOTITE GNEISS, LOCALLY CHLORITIC
 - 3 QTZ - FELDSPAR HORNBLENDE BIOTITE (AUGEN) GNEISS

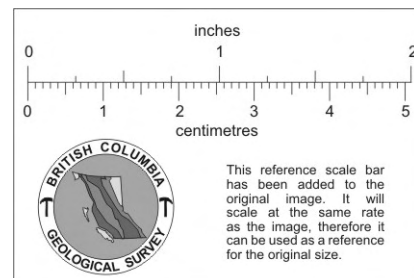
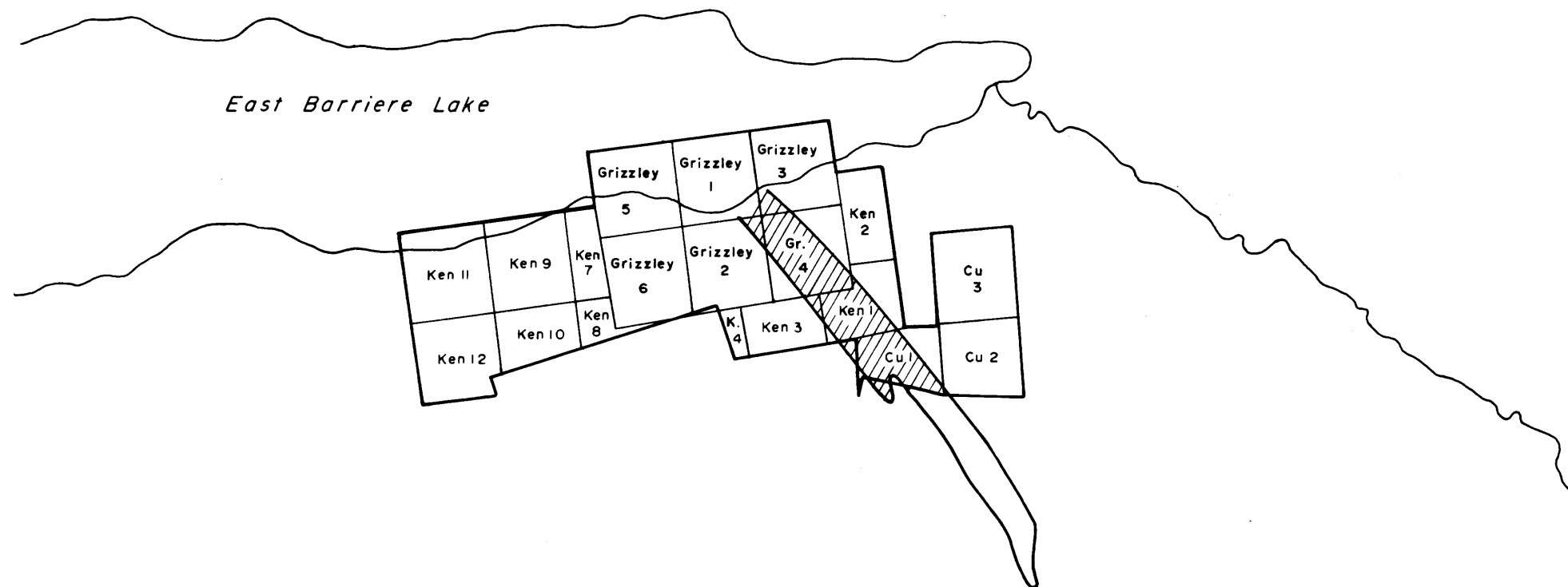
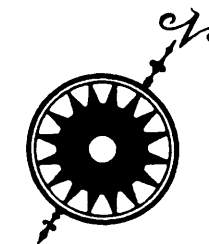
- 35° FOLIATION STRIKE / DIP
- 70° FRACTURE STRIKE / DIP
- OUTCROP
- CONTACT DEFINED, ASSUMED
- TRENCH
- DRILL HOLE



PROPERTY FILE

CANADIAN SUPERIOR EXPLORATION LIMITED	
KAMLOOPS BRITISH COLUMBIA	
KAMLOOPS M.D. 82 M/SE	
SOUVENIR PROJECT	
GEOLOGY MAP	
Drawn By : Graphic Supply & Service Center	Scale : 1" = 400'
	Date : November 26, 1971
	Dwg. No.

PROPERTY FILE



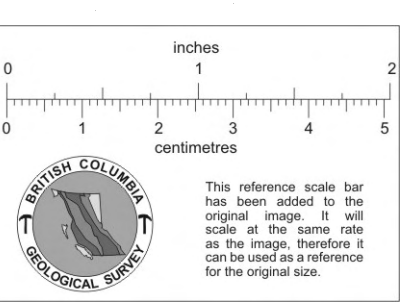
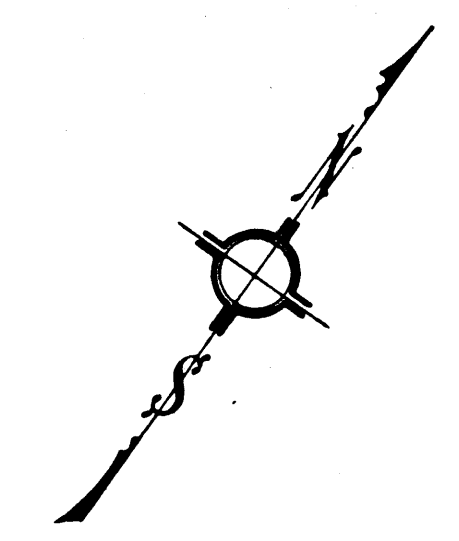
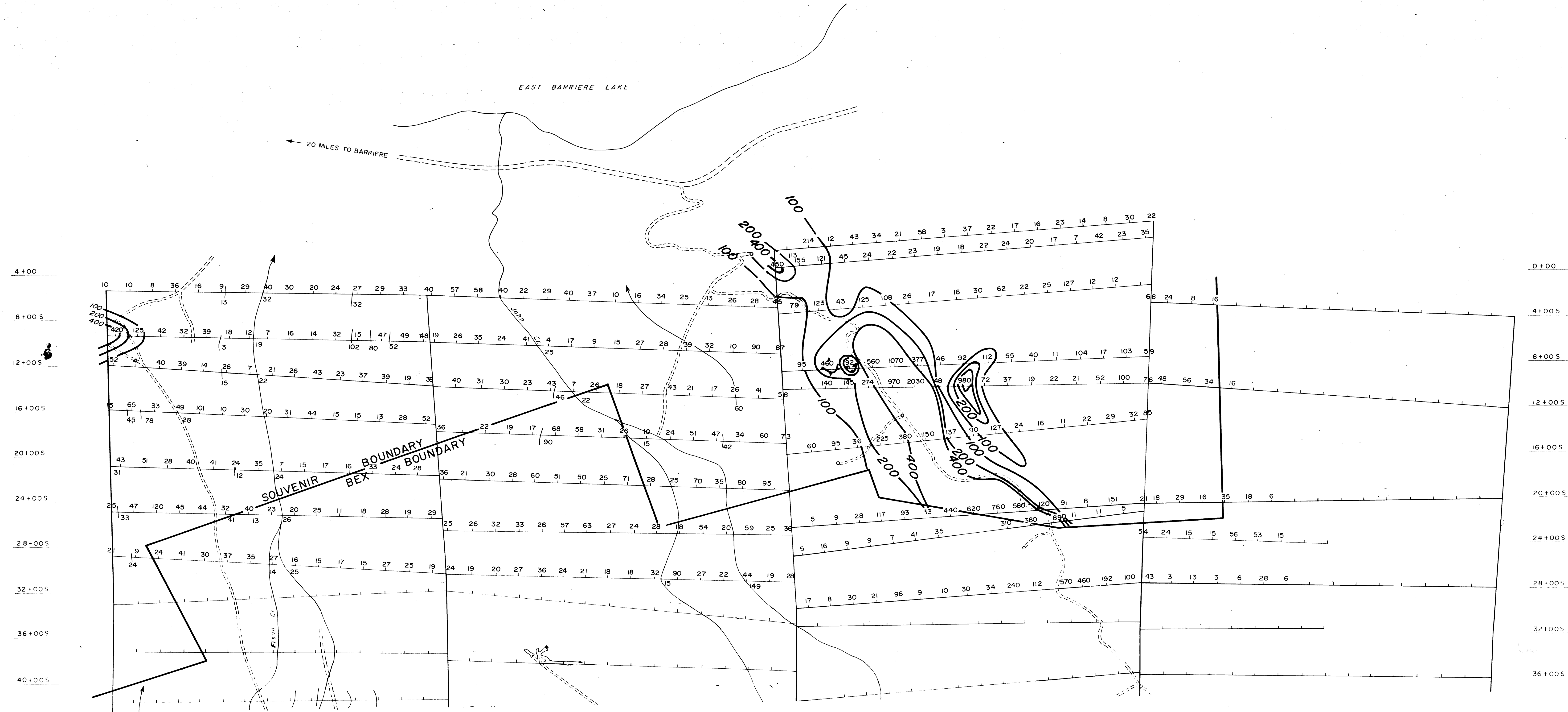
CANADIAN SUPERIOR EXPLORATION LIMITED SOUVENIR PROPERTY LOCATION MAP

SCALE : 1" = 1/2 MILE

KAMLOOPS M.D. 82 M/S

EAST BARRIER LAKE

20 MILES TO BARRIER



TIE LINE 150+00 W

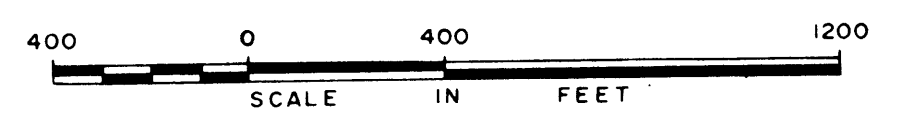
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BASE LINE 100+00 W

TIE LINE 40+00 W

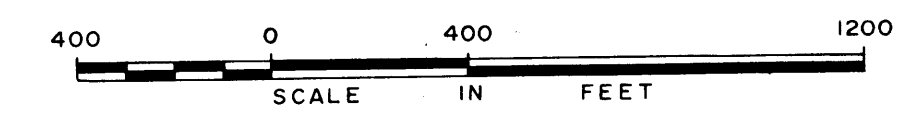
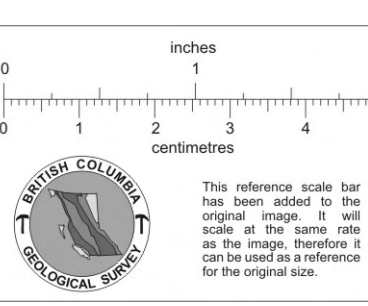
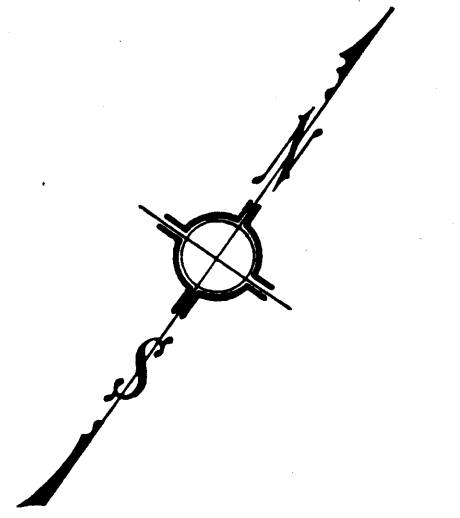
LEGEND

- 40 SOIL SAMPLE ppm Cu
- 29 SILT SAMPLE ppm Cu
- > 400 ppm Cu
- > 200 ppm Cu
- > 100 ppm Cu



PROPERTY FILE

CANADIAN SUPERIOR EXPLORATION LIMITED	
KAMLOOPS	BRITISH COLUMBIA
KAMLOOPS M.D. 82 M/SE	
SOUVENIR PROJECT	
GEOCHEMISTRY CONTOUR PLAN	
Drawn By: Graphic Supply & Service Center	Scale: 1" = 400'
	Date: November 26, 1971
	Dwg. No.



— L E G E N D —

- DEFINITE
- PROBABLE
- POSSIBLE

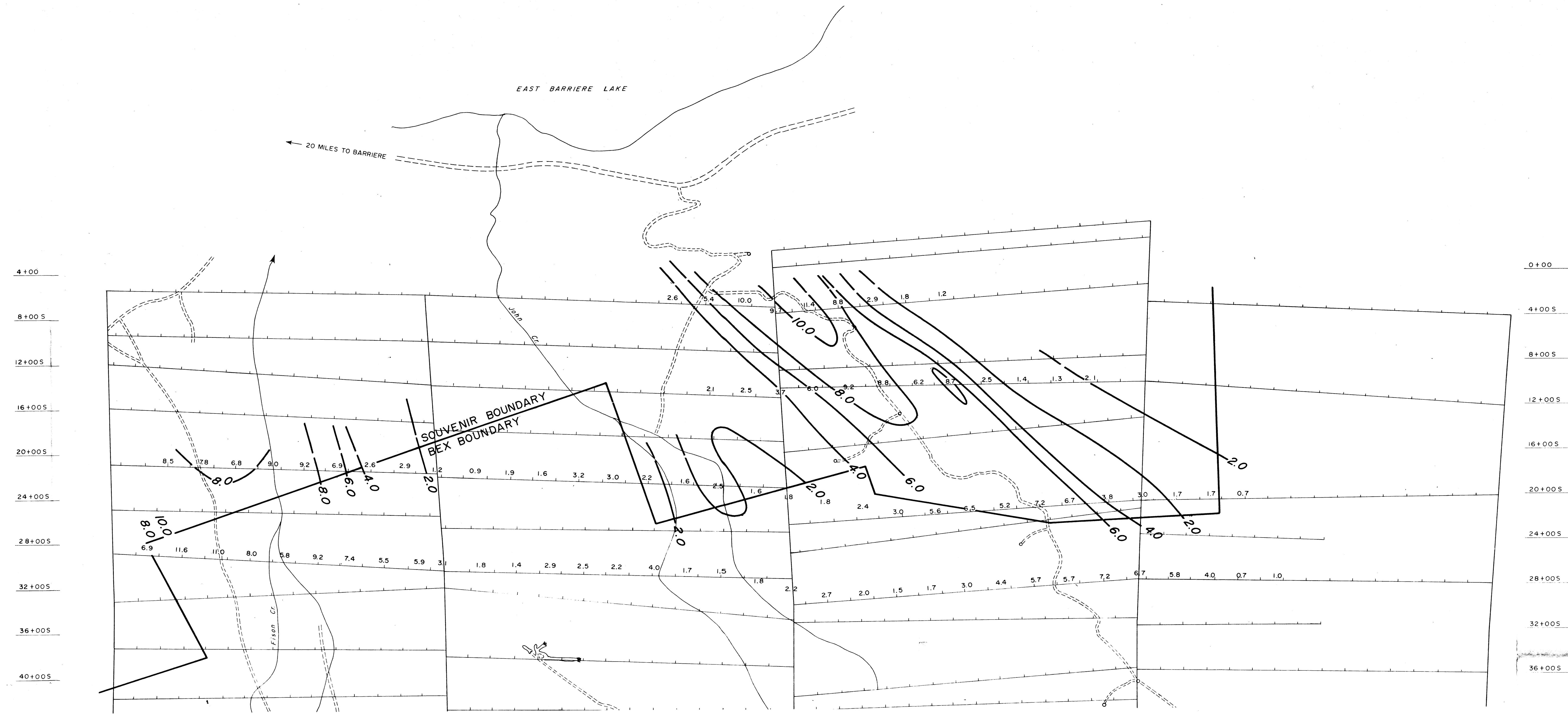
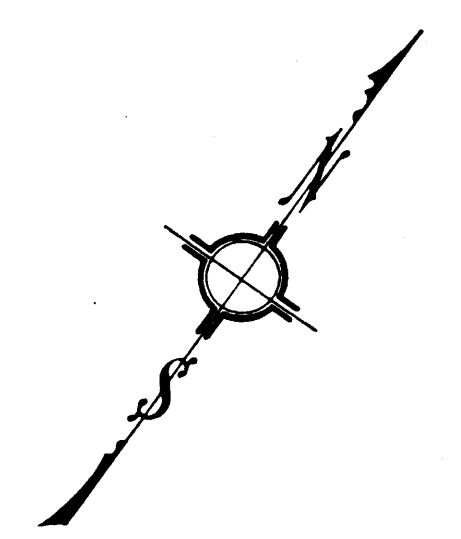
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TIE LINE 130+00.W

BASE LINE 100+00.W

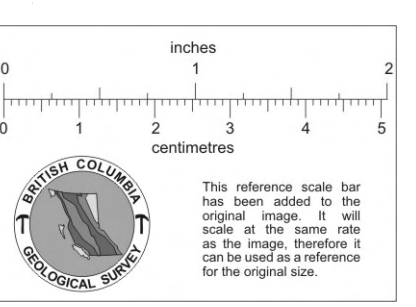
TIE LINE 40+00.W

CANADIAN SUPERIOR EXPLORATION LIMITED	
KAMLOOPS	BRITISH COLUMBIA
KAMLOOPS M.D. 82 M/SE	
SOUVENIR PROJECT	
I.P. PLAN SHOWING ANOMALIES	
Drawn By : Graphic Supply & Service Center	Scale : 1" = 400'
Date : November 26, 1971	Dwg. No.



0+00
4+00 S
8+00 S
12+00 S
16+00 S
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28+00 S
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36+00 S

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36+00 S
40+00 S

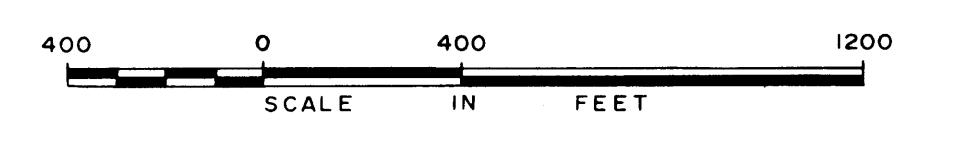
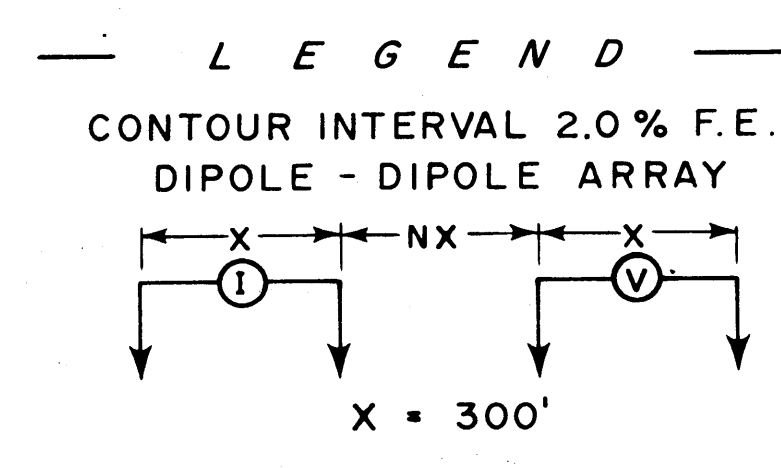


TIE LINE 150+00W

TIE LINE 130+00W

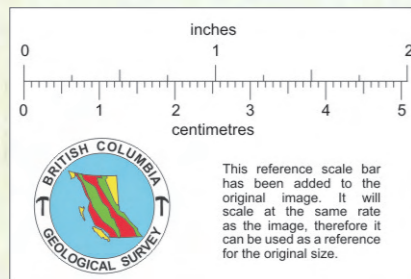
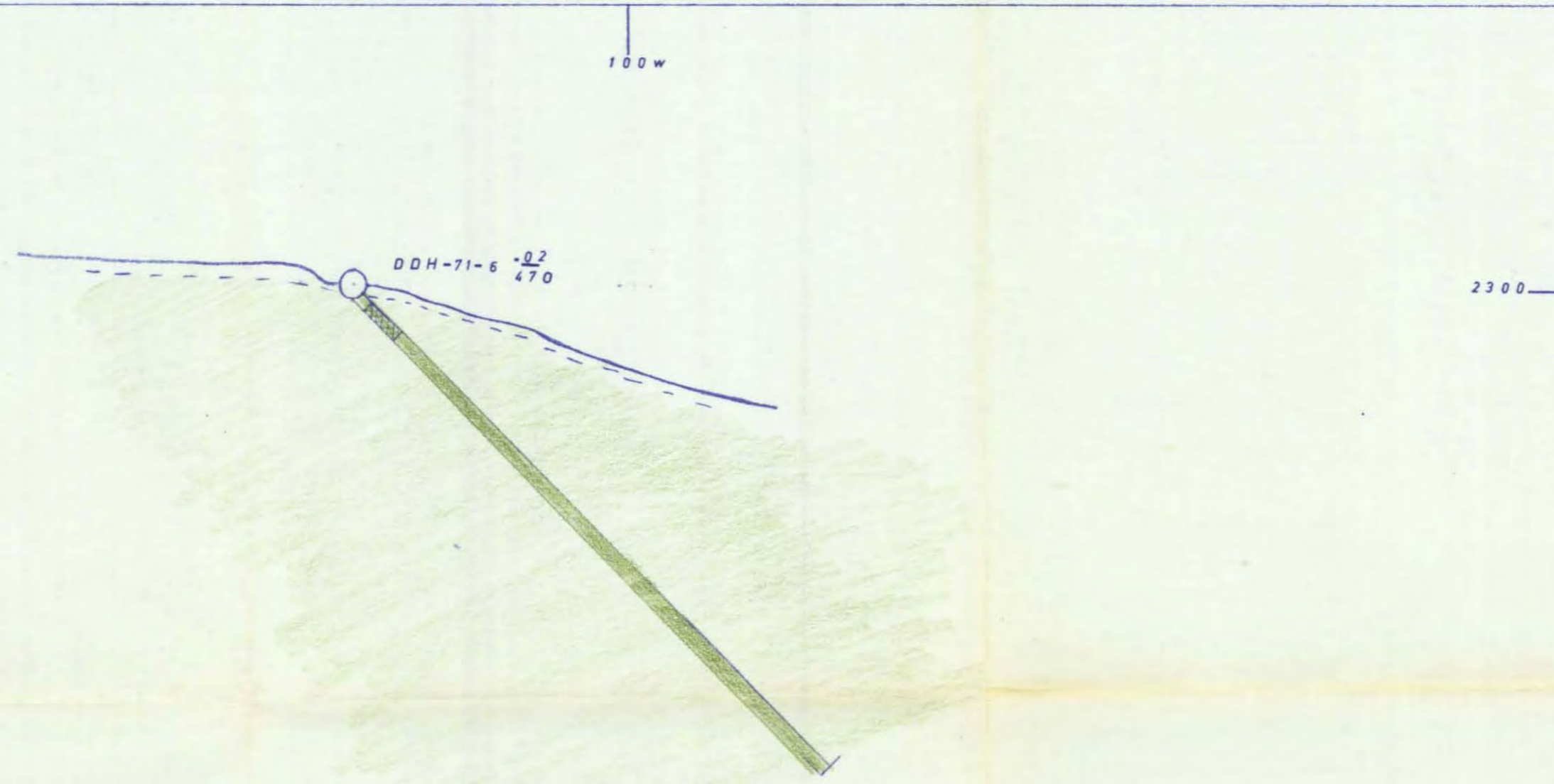
BASE LINE 100+00W

TIE LINE 40+00W



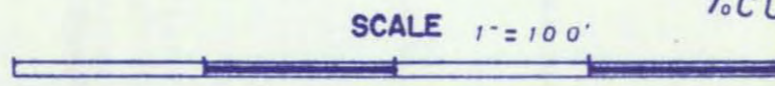
CANADIAN SUPERIOR EXPLORATION LIMITED	
KAMLOOPS	BRITISH COLUMBIA
KAMLOOPS M.D. 82 M/5E	
SOUVENIR PROJECT	
I.P. % F.E. CONTOUR MAP	
N = 2	
Scale: 1" = 400'	Date: November 26, 1971.
Drawn By: Graphic Supply & Service Center	Dwg. No.

PROPERTY FILE

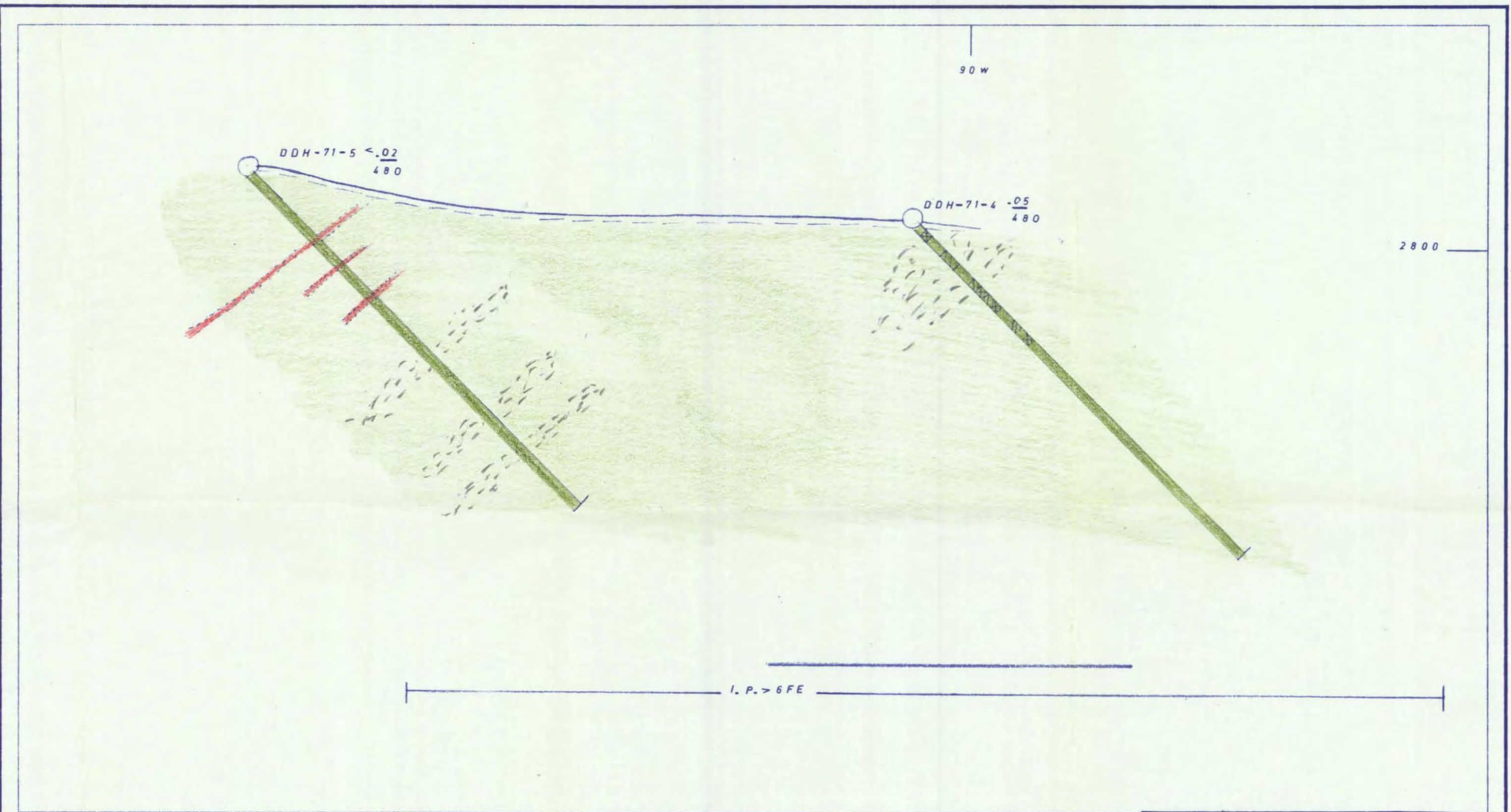


N.T.S.
— > 400 ppm
— QTZ-BIOTITE GNEISS

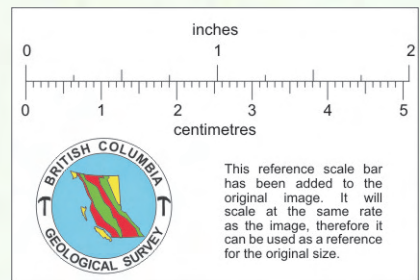
▨ .1-.2
▧ .2-.3
■ .3-.4
■ ≥4
%CU



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P-66 SOUVENIR		
NOV. 71	SEC. 4N	DWG. DAL



PROPERTY FILE



N.T.S.

	>400PPM		.1-.2
	QTZ-BIOTITE GNEISS		.2-.3
	QTZ-EYE RHYOLITE GNEISS		.3-.4
	>CHLORITE		>.4

% CU

SCALE 1"=100'

CANADIAN SUPERIOR EXPLORATION LIMITED		
SOUVENIR P-66		
NOV. 71	SEC.12S	DWG. DAL