

MOT GROUP: SOIL GEOCHEMISTRY

OMINECA MINING DIVISION

MOT 1 (20 units)

94D/3E

56°04'N, 127°05'W

Owner/Operator

Amoco Canada Petroleum Company Ltd.
656 - 409 Granville Street
Vancouver, B.C.
V6C 1T2

Report written by
Walter Melnyk
March 20, 1981

TABLE OF CONTENTS

	page
INTRODUCTION	1.
GEOLOGY	3.
SOIL GEOCHEMISTRY	5.
EVALUATION OF WORK	8.

LIST OF FIGURES

1. Location Map MOT 1 claim

LIST OF APPENDICES

- I. Fee Schedule
- II. Procedure for Geochemical Analysis
- III. Names and addresses of people conducting work
- IV. Unit cost per hour for helicopter
- V. Qualifications of W.D. Melnyk

LIST OF MAPS

- I. Cu, Mo, Au, Ag soil Geochemistry, MOT 1 claim

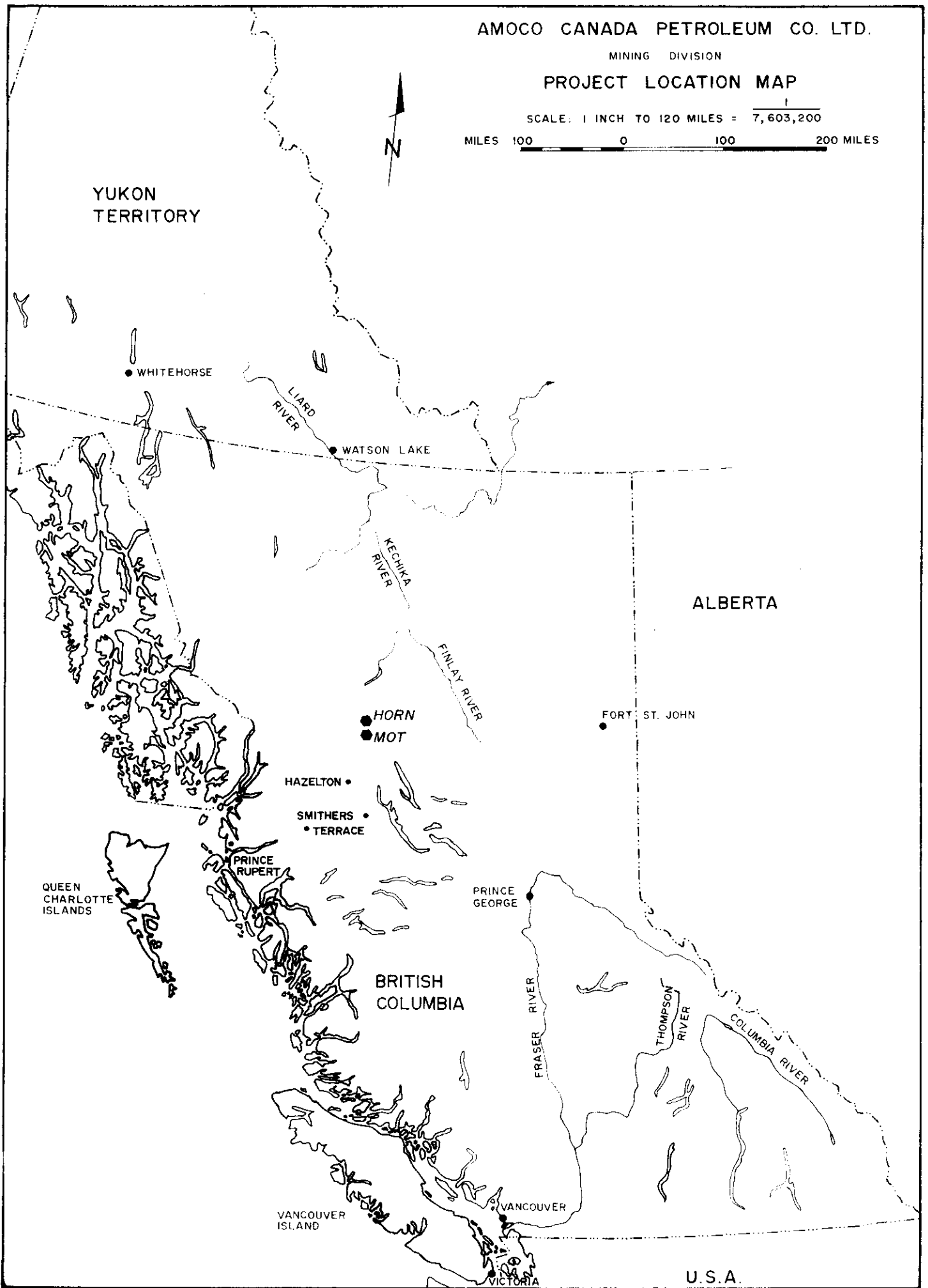
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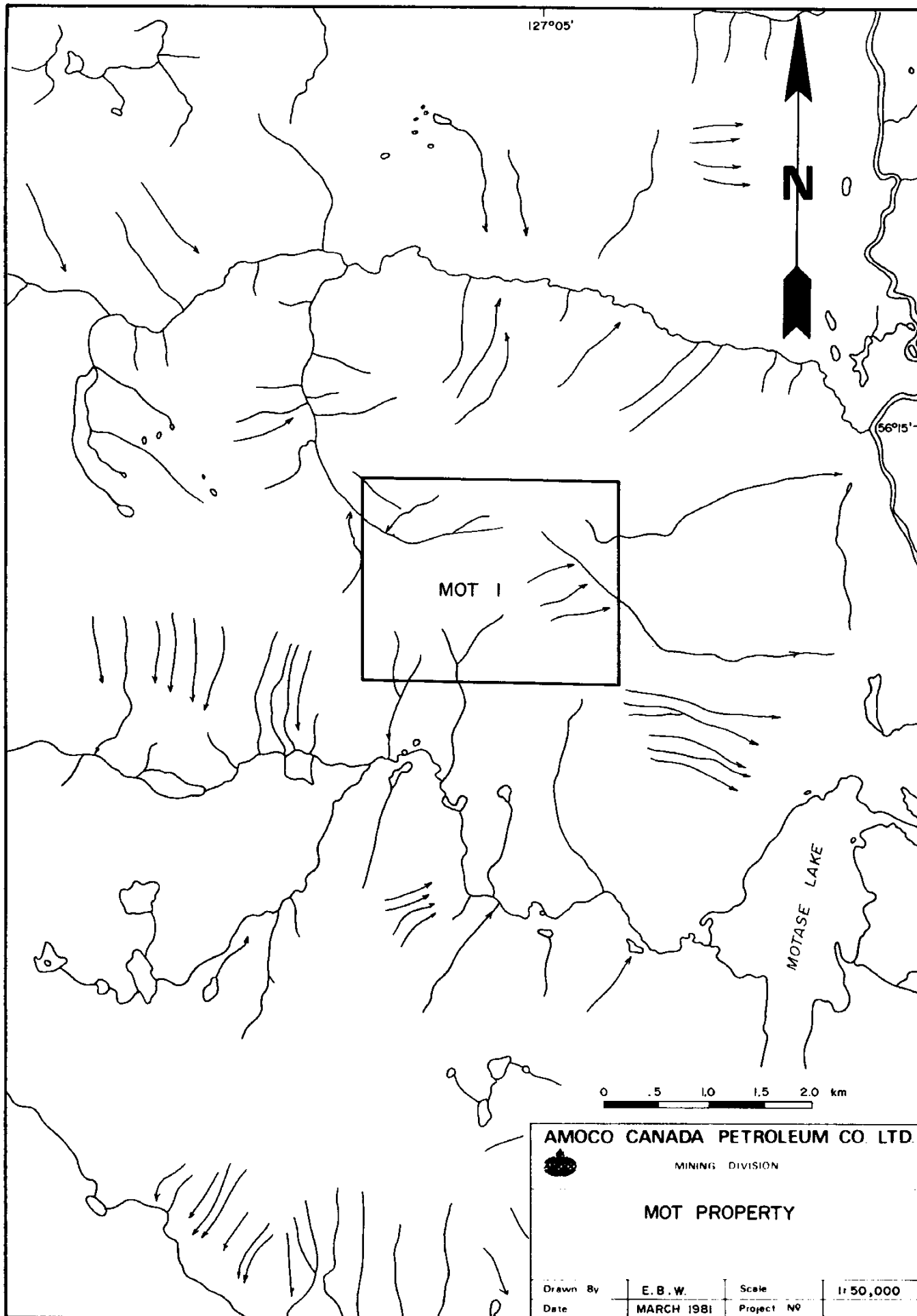
MINING DIVISION

PROJECT LOCATION MAP

SCALE: 1 INCH TO 120 MILES = $\frac{1}{7,603,200}$

MILES 100 0 100 200 MILES





AMOCO CANADA PETROLEUM CO. LTD.

MINING DIVISION

MOT PROPERTY

Drawn By	E. B. W.	Scale	1:50,000
Date	MARCH 1981	Project No	

INTRODUCTION

The MOT 1 claim consists of 20 contiguous units which are located 4 km northwest from the northern most tip of Motase Lake.

Access to the property is exclusively by helicopter from Smithers approximately 153 km to the south.

Amoco Canada Petroleum Company Ltd., Mining Division, is the owner and operator of MOT 1.

The MOT claim is underlain by sediments of the middle Jurassic-lower Cretaceous Bowser Group which has been intruded by an altered and mineralized feldspar porphyry stock related to the Bulkley intrusions.

Geochemical soil sampling resulted in several areas anomalous in Cu, Mo, Au, and Ag. The main anomaly located in the southeastern corner of the claim measures 650 m long and 350 m wide with values for copper > 500 ppm and up to 1640 ppm, and molybdenum values > 100 ppm and up to 520 ppm. Gold geochemistry resulted in values > 200 ppb and up to 4850 ppb. Silver geochemistry resulted in values > 4 ppm and up to 31.8 ppm.

MOT 1 CLAIM

	<u>Units</u>	<u>Tag No.</u>	<u>Date Staked</u>	<u>Anniversary Date</u>	<u>Record#</u>
MOT 1	20	46053	July 22, 1980	Aug.7, 1981	3049

GEOLOGY

The MOT property is underlain by sediments of the middle Jurassic-lower Cretaceous Bowser Group. The assemblage consists of intercalated argillites, shales and siltstones, intermittently cut by intrusive dikes and sills. Within the confines of the property this unit is faulted, folded, fractured, and in part hornfelsed. The sediments and intrusive are pyritized forming a prominent gossan. The general trend of the sediments is 300° Azimuth with a gentle southwesterly dip. Extreme local variations are common.

The central portion of MOT is underlain by an intrusive body which in itself varies greatly in character leading to speculation that a sequence of intrusive events was responsible for the emplacement of this intrusive body. The intrusive, a linear body trending $N 75^{\circ} W$, extends over a length of 1800 meters and is approximately 250 meters wide. The precise dimensions of the intrusive in the eastern portion of the property are vague due to relatively steep talus covered slopes, consequently geological mapping and interpretation are speculative at this juncture.

The main rock type is a variably altered feldspar porphyry. This is a light colored rock medium-coarse grained, containing phenocrysts of feldspar to 1 cm in length. Mafic content is generally quite low with scattered flakes of biotite. This rock

generally contains some quartz veining with associated weak sulfide mineralization in the form of chalcopyrite, molybdenite, and pyrite; traces of galena were also observed. Most of the sulfide mineralization observed in outcrop was in the area of anomaly 5. Chalcopyrite and pyrite were found in a silicified sediment on L3 + 75W. Molybdenite, chalcopyrite, and pyrite were found in quartz veins near the glacier between L1=25W and L2+50W.. Other scattered occurrences of sulfide mineralization were detected in the areas of anomalies 1, 2, and 3.

Intrusive rocks have been subjected to varying degrees of hydrothermal alteration. A strongly sericitized and pyritized intrusive outcrop was found at L5+00E, 3+00N. Large open vugs are lined with crystalline pyrite and the rock is mineralized with disseminated molybdenite and pyrite. Other intrusive rocks exhibit strong silicification with weaker associated sericitization, sulfide mineralization is generally lower. Relatively unaltered intrusive rocks are present, particularly in the western portion of MOT.

Weak to moderate quartz veining is present and represents the principal mode of mineralization. Stockwork veining has not been recognized. Veining varies considerably from clear 2mm quartz veins to 25 cm milky-white veins. Sulfide mineralization is restricted to narrow clear quartz veins.

GEOCHEMISTRY

The MOT property was soil sampled in the latter part of August. A chained base line was established in a westerly direction in the southern portion of the property from which cross-lines were established at 125-meter intervals. "B" horizon soil samples were collected with a mattock at 60 meter-stations.

All samples, 245, were analyzed for Mo and Cu, 163 samples were analyzed for gold, and 116 samples were analyzed for silver. Coincident, strongly anomalous values for copper, molybdenum silver, and gold outline one main area in the southwestern corner of MOT 1.

The geochemically anomalous area lies on a relatively steep, talus covered hillside which terminates in a sharp vertical drop to the northeast. The slope gradually decreases to the southwest.

The main anomaly, anomaly 1, measures 650 m long and 350 m wide with values for copper > 550 ppm and up to 1640 ppm, and molybdenum values > 100 ppm and up to 520 ppm. Both anomalies are open to the east.

The gold anomaly outlines an irregular area for values 1000ppb and measures 450 m by 200 m trending westerly. Gold values 400 ppb extend over an area 800 m and average 350 m in width. The gold anomaly occurs in part up-slope from the Cu-Mo anomaly although there is a great deal of overlap. The gold soil anomaly with values greater than 200 ppb spans virtually the entire MOT claim trending north 62° west coincident with the mineralized intrusive body. This anomaly measures 1900m in length and varies in width from 50 m to 500 m.

The silver anomaly containing values of 4 ppm and greater is essentially identical with the gold anomaly of 200 ppb and greater. The greater than 10 ppm anomaly occurs near the crest of the hill and extends across L6 +25E through to L10 +00E. This anomaly is open to the east. Values of greater than 15 ppm are attained and these occur on L20 + 00E near the crest of the mountain.

Several other satellite anomalies occur adjacent to anomaly 1 trending northwesterly. Anomaly 2 is a copper anomaly extending 400 m in length and 70 m in width. Values range from 500 ppm to 1650 ppm. One molybdenum value, coincident with the high copper value, ran 100 ppm.

Anomaly 3 also trends northwesterly and is 200 meters long and 120 meters wide, copper values range from 500 ppm to 975 ppm. A narrow 2 sample molybdenum anomaly overlaps the copper anomaly, extends for 200 meters, and has a high value for molybdenum of 230 ppm.

Anomaly 4 adjoins the main anomaly to the north. This anomaly consists of three geochem samples anomalous in copper and molybdenum. The copper anomaly measures 150 meters by 70 meters with a high value of 1045 ppm. The molybdenum anomaly is 200 meters by 30 meters.

Anomaly 5 is located 1.2 km west of the main anomaly and is represented by an erratic distribution of anomalous copper and molybdenum values. The total area is 200 meters by 300 meters and trends northwesterly. Values for molybdenum range up to 200 ppm and copper 1320 ppm. In part the most promising portion of this anomaly appears to lie beneath a glacier.

EVALUATION OF WORK

WORK CONDUCTED :	Grid soil sampling	
CLAIMS :	MOT 1	
SOIL SAMPLING :	A total of 245 soil samples were collected	
DATES WORK CONDUCTED:	August 15-19 inclusive	
SALARIES:	Gordon Mc Millan 5 man-days @ 56.13/day	\$280.65
	David Simonar 5 man-days @ 46.45/day	\$232.25
MEALS:	10 man-days @ 15.00/day	\$150.00
TRANSPORTATION:	Helicopter	
	3.5 hrs @ 387.40	\$1355.90
	TOTAL WORK DONE	\$2018.80

ASSAY CHARGES:	245 soil samples analyzed for Cu, Mo	245 x 3.10 = \$759.50
	163 samples analyzed for Au	692.75
	116 samples analyzed for Ag	87.00
	TOTAL ASSAY CHARGES	\$1539.25

CREDIT TO MOT 1

Work done	\$2018.80
Assay charges	1539.25
Cost of report preparation	<u>300.00</u>
TOTAL EXPENDITURE	\$3858.05

APPENDIX I

FEE SCHEDULE

Geochemical analyses were done by

Min-En Laboratories Ltd.
705 West 15th Street
North Vancouver, B.C.
V7M 1T2

Fee schedule for geochemical analyses

Molybdenum	\$1.75
Copper	0.75
Gold	4.25
Silver	0.75
Sample preparation	0.60

*MIN-EN Laboratories Ltd.**Specialists in Mineral Environments*Corner 15th Street and Bewicke
705 WEST 15th STREET
NORTH VANCOUVER, B.C.
CANADAANALYTICAL PROCEDURE REPORTS FOR ASSESSMENT WORKPROCEDURES FOR Mo, Cu, Cd, Pb, Mn, Ni, Ag, Zn, As, F

Samples are processed by Min-En Laboratories Ltd., at 705 W. 15th St., North Vancouver Laboratory employing the following procedures.

After drying the samples at 95°C soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed by a jaw crusher and pulverized by ceramic plated pulverizer.

1.0 gram of the samples are digested for 6 hours with HNO_3 and HClO_4 mixture.

After cooling samples are diluted to standard volume. The solutions are analyzed by Atomic Absorption Spectrophotometers.

Copper, Lead, Zinc, Silver, Cadmium, Cobalt, Nickel and Manganese are analysed using the CH_2H_2 -Air flame combination but the Molybdenum determination is carried out by C_2H_2 - N_2O gas mixture directly or indirectly (depending on the sensitivity and detection limit required) on these sample solutions.

For Arsenic analysis a suitable aliquote is taken from the above 1 gram sample solution and the test is carried out by Gutzeit method using $\text{Ag CS}_2\text{N} (\text{C}_2\text{H}_5)_2$ as a reagent. The detection limit obtained is 1. ppm.

Fluorine analysis is carried out on a 200 milligram sample. After fusion and suitable dilutions the fluoride ion concentration in rocks or soil samples are measured quantitatively by using fluorine specific ion electrode. Detection limit of this test is 10 ppm F.

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CANADA

ANALYTICAL PROCEDURE REPORTS FOR ASSESSMENT WORK

PROCEDURE FOR GOLD GEOCHEMICAL ANALYSIS.

Geochemical samples for Gold processed by Min-En Laboratories Ltd., at 705 W. 15th St., North Vancouver Laboratory employing the following procedures.

After drying the samples at 95°C soil and stream sediment samples are screened by 80 mesh sieve to obtain the minus 80 mesh fraction for analysis. The rock samples are crushed and pulverized by ceramic plated pulverizer.

A suitable sample weight 5.0 or 10.0 grams are pre-treated with HNO_3 and HClO_4 mixture.

After pretreatments the samples are digested with Aqua Regia solution, and after digestion the samples are taken up with 25% HCl to suitable volume.

At this stage of the procedure copper, silver and zinc can be analysed from suitable aliquote by Atomic Absorption Spectrophotometric procedure.

Further oxidation and treatment of at least 75% of the original sample solutions are made suitable for extraction of gold with Methyl Iso-Butyl Ketone.

With a set of suitable standard solution gold is analysed by Atomic Absorption instruments. The obtained detection limit is 5 ppb.

APPENDIX III

NAMES AND ADDRESSES OF PERSONS CONDUCTING WORK

Gordon Mc Millan: 102 First Street
Renforth
Saint John, New Brunswick

David Simonar: Box 105
Shell Lake, Saskatchewan
S0J 2G0

APPENDIX IV

COST PER HOUR FOR HELICOPTER, 1980

Contract helicopter leased from Kenting Helicopter,
Calgary.
Bell 206B Helicopter at \$325/hour

COST PER HOUR FOR HELICOPTER FUEL

fuel consumption 206B Jet Ranger:	20 gal/hr
cost of J-P4 jet fuel Smithers:	\$1.53/gal
cost of transporting fuel from Smithers to Bear Lake:	<u>\$1.59/gal</u>
Total cost of fuel at Bear Lake is:	\$3.12/gal

HOURLY COST OF FUEL FOR 206B at BEAR LAKE IS:

20 gal/hr x \$3.12/gal = \$62.40/hr

TOTAL COST PER HOUR FOR HELICOPTER, 1980

\$325.00 + \$62.40 = \$387.40

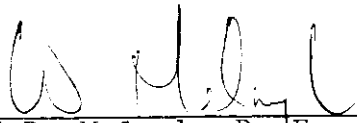
APPENDIX V

QUALIFICATIONS OF W.D. MELNYK

B.Sc., Geological Engineering, University of Saskatchewan,
Saskatoon, 1972

Member of The Association of Professional Engineers of the
Province of Ontario

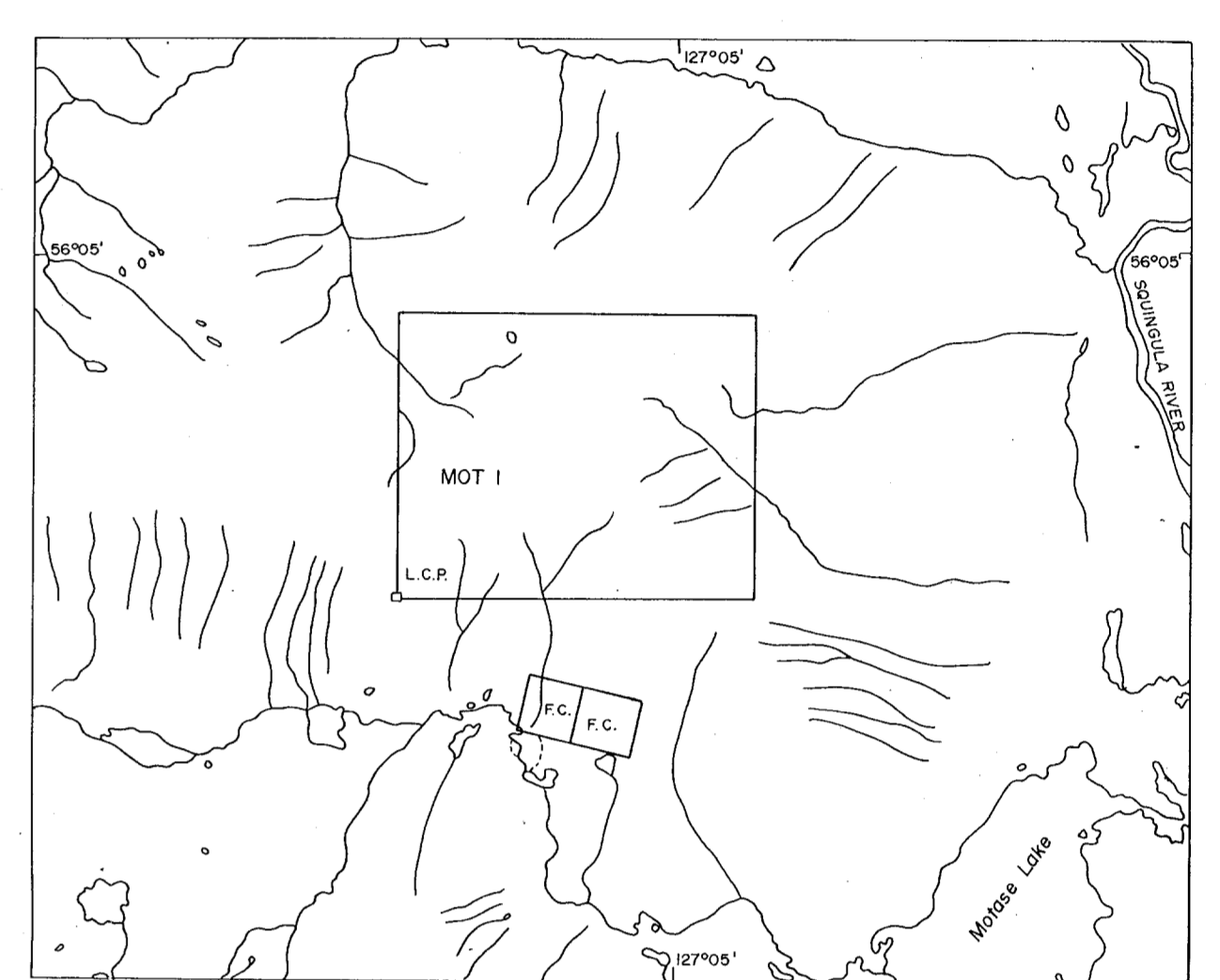
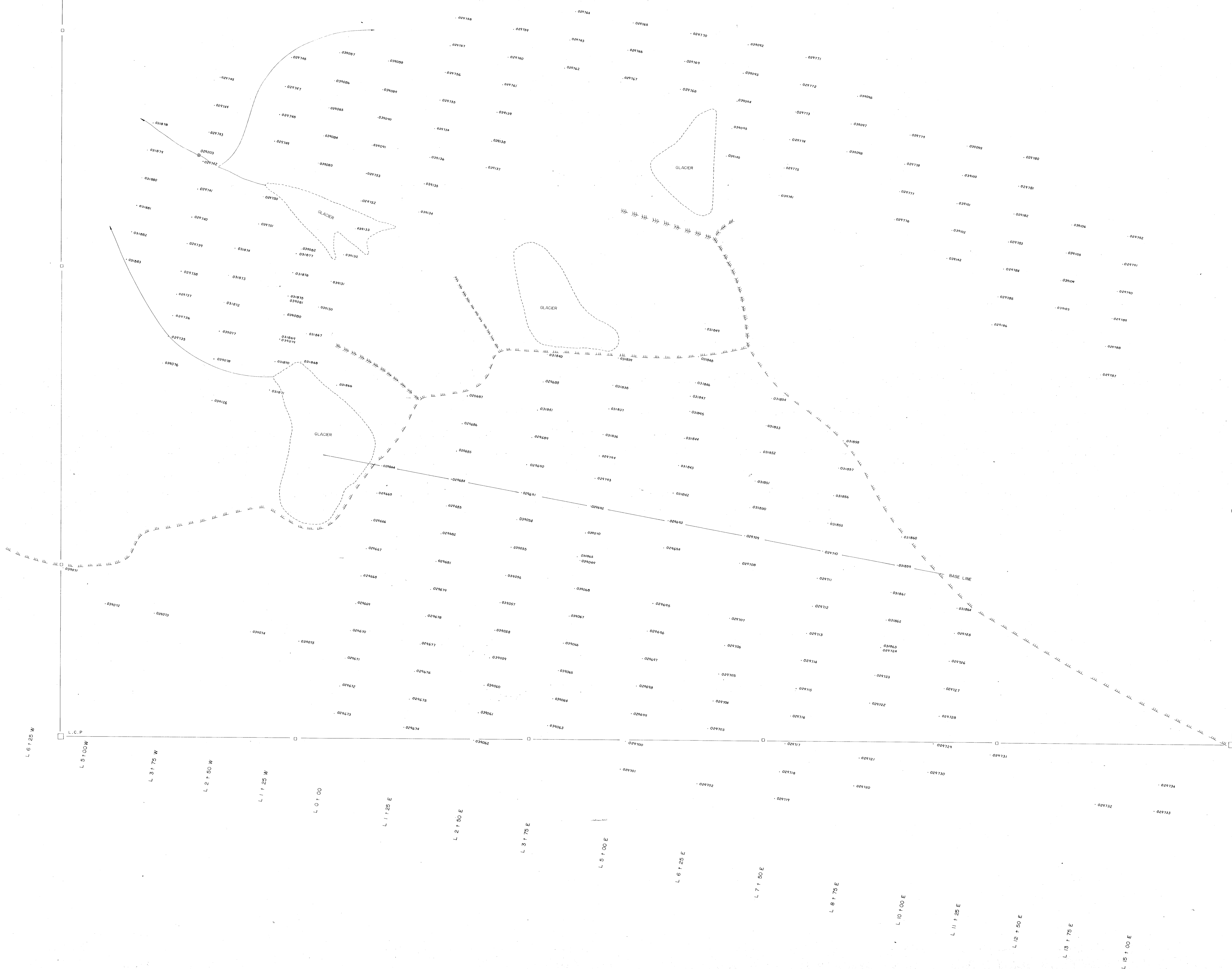
Member of The Association of Professional Engineers of
British Columbia


W.D. Melnyk, P. Eng.

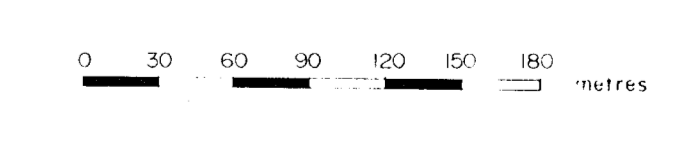
Vancouver, B.C.
March 20, 1981



MOT I



LEGEND:
002967 - SAMPLE LOCATION NUMBER

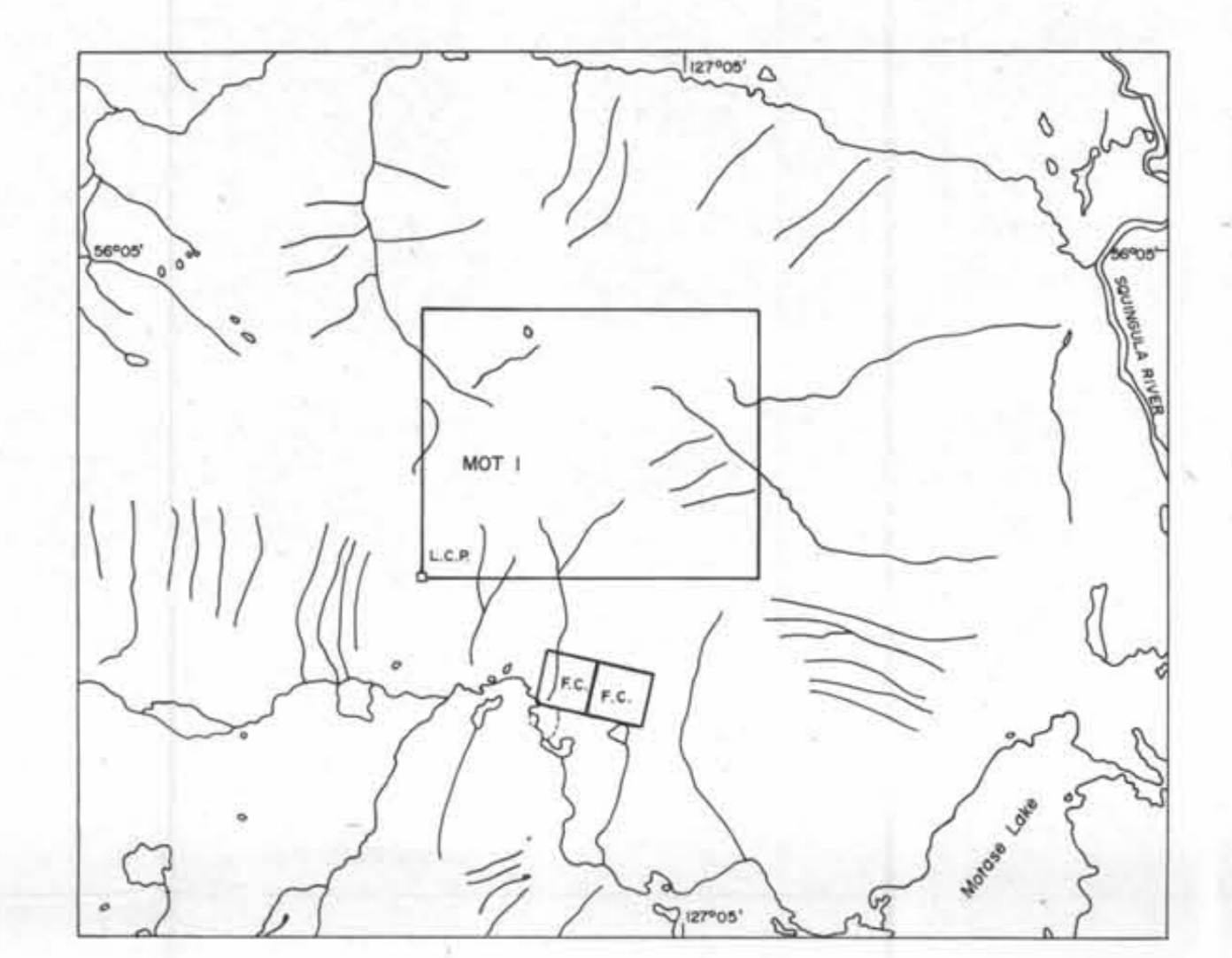
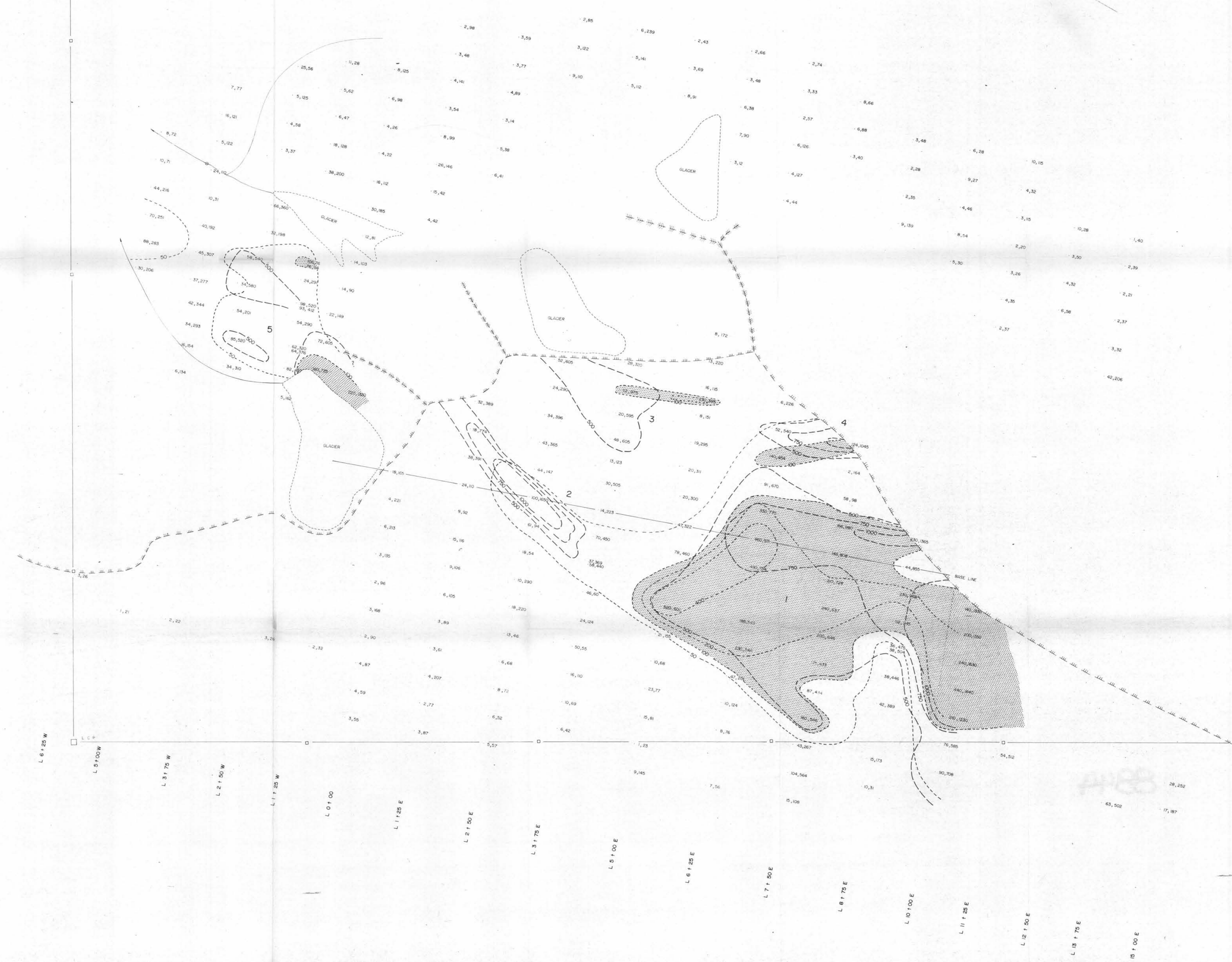


MINERAL RESOURCES BRANCH
ACCESSIBILITY REPORT
8844
NO.

AMOCO CANADA PETROLEUM CO. LTD.			
MINING DIVISION			
SKEENA PROJECT			
MOT I			
SAMPLE LOCATION MAP			
Drawn By	E.B. WYTRWAL	Scale	1cm = 30 m
Date	NOV. 1980	Project NO.	80 - C - 009



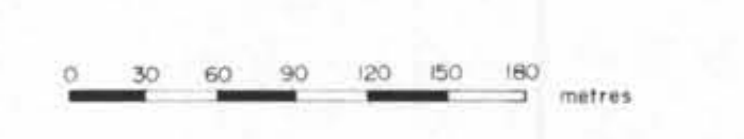
MOT I



LEGEND:

- 240, 1630 - SOIL SAMPLE RESULTS (Mo, Cu, ppm)
- 50 - Mo (ppm)
- 100 - Mo (ppm)
- 200 - Mo (ppm)
- Mo > 100 ppm
- 500 - Cu (ppm)
- 750 - Cu (ppm)
- 1000 - Cu (ppm)

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8844
No.



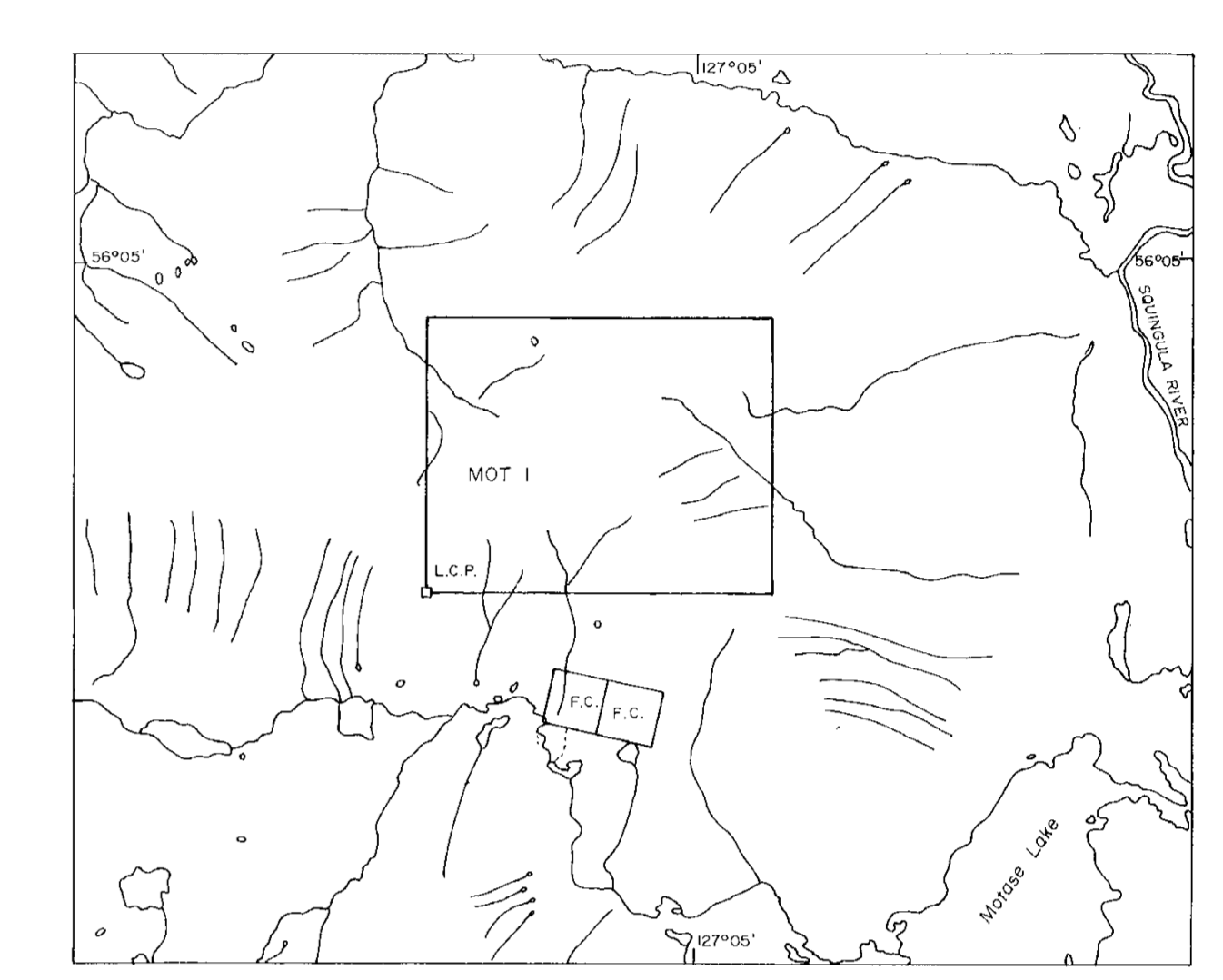
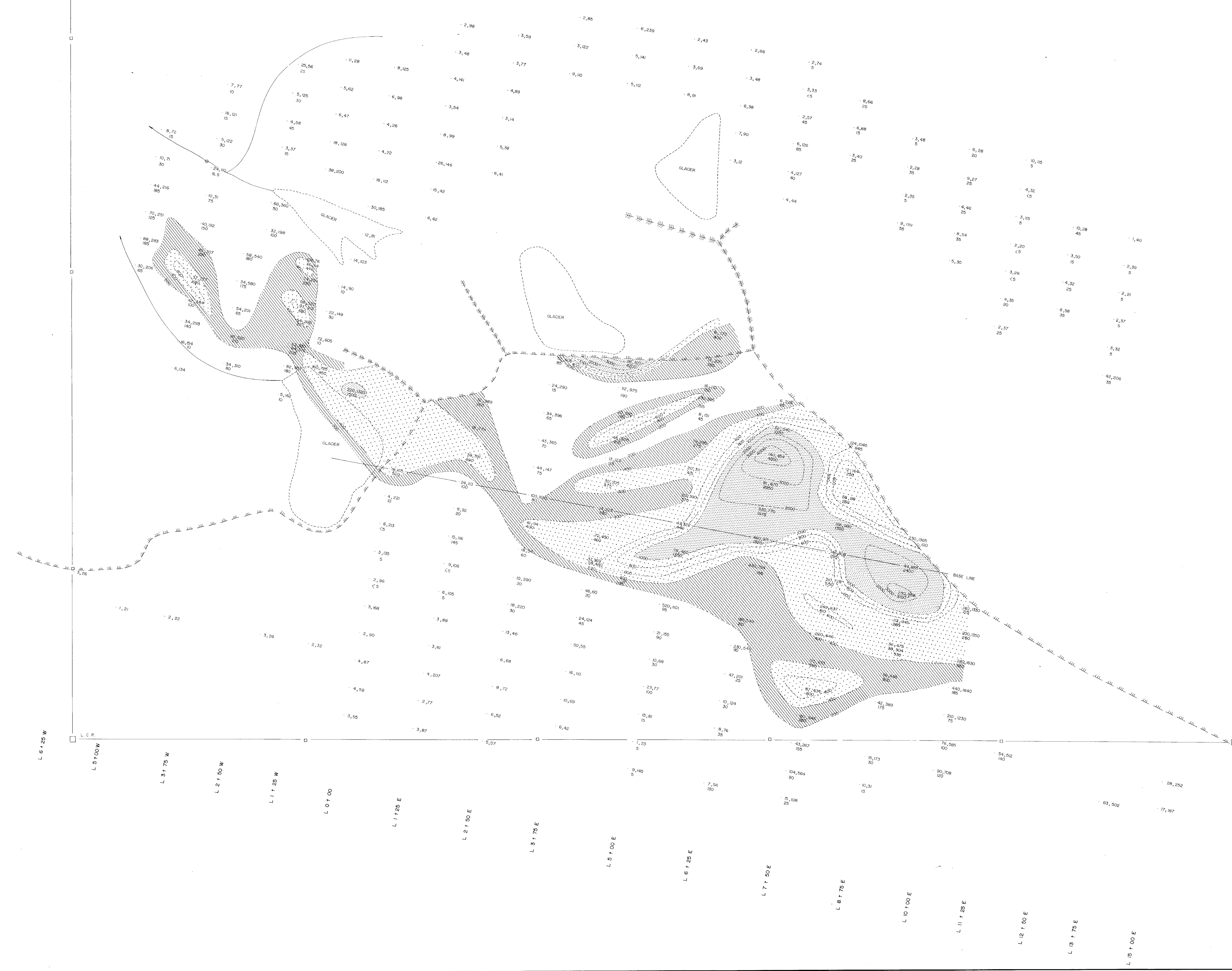
AMOCO CANADA PETROLEUM CO. LTD.
MINING DIVISION

SKEENA PROJECT
MOT I
SOIL GEOCHEMISTRY RESULTS
(Mo, Cu, ppm)

Drawn By	E.B. WYTRWAL	Scale	1cm = 30m
Date	NOV. 1980	Project No.	80 - C - 009



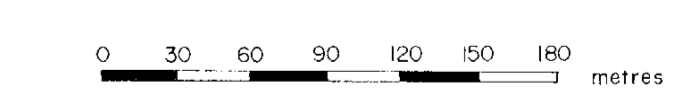
MOT I



LEGEND:

-20, 728 550	Mo, Cu (ppb)
Au	
[Solid black shading]	> 1000 ppb Au
[Stippled shading]	400 - 1000 ppb Au
[Cross-hatched shading]	200 - 400 ppb Au

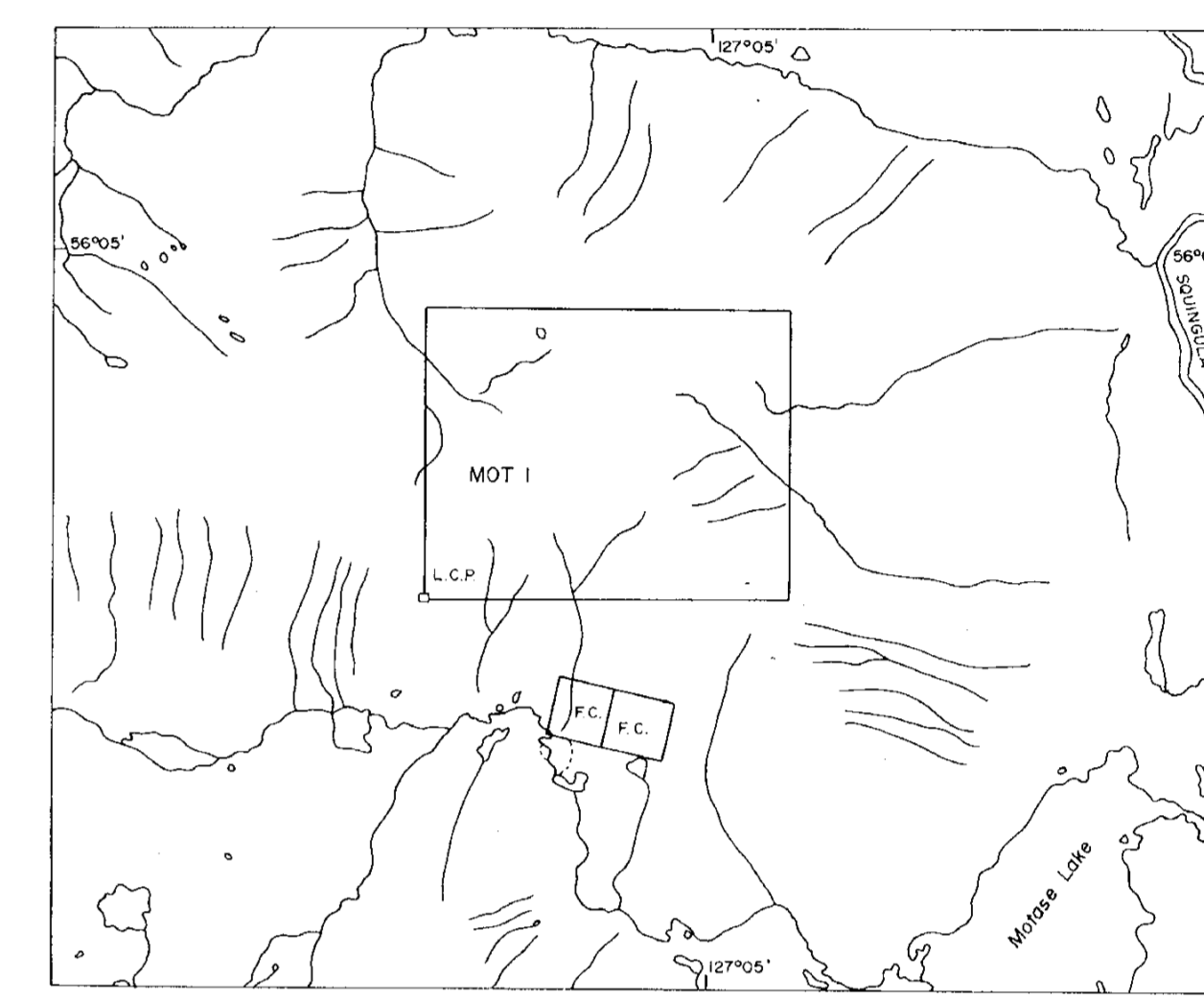
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AMOCO CANADA PETROLEUM CO. LTD.			
MINING DIVISION			
SKEENA PROJECT			
MOT I			
GOLD GEOCHEMISTRY			
Drawn By	E.B. WYTRWAL	Scale	1cm = 30m
Date	NOV. 1980	Project NO	80-C-009

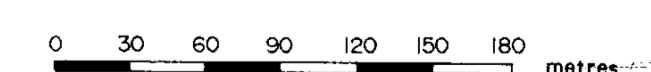


MOT I



LEGEND:
000787 - SAMPLE LOCATION NUMBER
1.0 - Ag SAMPLE RESULTS (PPM)
--- CONTOUR LINE (Ag - 4, 10, 15, 30 PPM)

MINING RESOURCES BRANCH
ASSESSMENT REPORT
8844



AMOCO CANADA PETROLEUM CO. LTD.			
MINING DIVISION			
SKEENA PROJECT			
MOT I			
Ag - SAMPLE RESULTS			
Drawn By	E B WYTRWAL	Scale	1cm = 30m
Date	NOV 1980	Project No.	80-C-009