

MAR 19710013: NORTHERN ALBERTA

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ECONOMIC MINERALS

FILE REPORT No.

CU-029(1)

CU-031(1)

CU-1032(1)

CU-033(1)

CU-034(1)

SUMMARY REPORT

ON

QUARTZ MINERAL EXPLORATION PERMITS

163 to 168 inclusive

BY

H. S. Swinden B.Sc.

AND

T. L. Horsley B.A.Sc. P. Eng.

OF

CONWEST EXPLORATION COMPANY LIMITED

JUNE, 1971

700248

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INDEXING Document No. 700253

SUMMARY

Late in 1970 rock specimens containing high copper values were brought to the attention of Conwest by John Morin of Pine Point, N.W.T. The specimens were said to be bedrock samples from an area lying on the south face of the Caribou Mountains in Northern Alberta. Quartz mineral exploration permits were obtained from the province of Alberta and a prospecting program was planned.

Preliminary investigation in early May, 1971 proved that Morin and the trappers who allegedly had seen the copper mineral occurrences and obtained the specimens in late 1970 could not locate such occurrences and that no fresh samples had been taken by these men from the area in recent years.

Although this development was very discouraging a program of stream sediment sampling for copper was carried out over the area where one of the trappers reported finding copper mineralization in bedrock many years ago.

No concentrations of copper were indicated by this sampling program and exploration of the permit areas has been terminated.

H. S. Swinden B.Sc. [REDACTED]

T. L. Horsley B.A.Sc. P. Eng. [REDACTED]

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INTRODUCTION

In late 1970 six Quartz Mineral Exploration Permits totalling 276,480 acres in the Caribou Mountains of Northern Alberta were acquired by Conwest Exploration Company Limited on the basis of reported copper occurrences in the mountains.

It was planned to conduct a helicopter-supported prospecting program on the permits during May and June 1971. However, after preliminary reconnaissance in May it became obvious that reports concerning mineralization in the permit areas were greatly exaggerated. One area that was probably the source of a specimen of copper mineralization was tested by stream sediment sampling. Analyses of the samples indicated that the copper content of the area was uniform and exploration was terminated.

LOCATION AND ACCESS

The area investigated lies in Northern Alberta about 20 miles north and north-east of Fort Vermillion settlement and covers most of the south face of the Caribou Mountains.

The town of High Level lies about 40 miles west of the permit area. The permit area lies mainly in N.T.S. 84.J with the western tip extending into 84.K. Six permits covering a total of 276,480 acres were acquired. They are described as follows:

<u>Permit No.</u>	<u>Township</u>	<u>Range (West of 5th Meridian)</u>	<u>Sections</u>	<u>Acreage</u>
163	111	5	19,20,21 28-33 incl.	
	112	5	1-36 incl.	
	111	6	22-27 incl. 34,35,36	

<u>Permit No.</u>	<u>Township</u>	<u>Range (West of 5th Meridian)</u>	<u>Sections</u>	<u>Acreage</u>
163 (cont'd)	112	6	1-4 incl. 9-16 incl. 21-28 incl. 33-36 incl.	49,920
164	111	6	19,20,21 28-33 incl.	
	112	6	5-8 incl. 17-20 incl. 29-32 incl.	
	111	7	21-28 incl. 33-36 incl.	
	112	7	1-5 incl. 8-17 incl. 20-29 incl. 32-36 incl.	
	113	7	1-5 incl. 8-17 incl.	49,920
165	111	7	19,20 29-32 incl.	
	112	7	6,7,18,19,30,31	
	113	7	6,7,18	
	111	8	22-27 incl. 34,35,36	
	112	8	1-36 incl.	
	113	8	1-18 incl.	49,920
166	111	8	19,20,21 28-33 incl.	
	111	9	19-36 incl.	
	112	9	1-18 incl.	28,800
167	112	10	1-36 incl.	
	113	10	1-18 incl.	
	112	11	1-24 incl.	49,920
168	112	11	25-36 incl.	
	113	11	1-21 incl. 28-33 incl.	

<u>Permit No.</u>	<u>Township</u>	<u>Range (West of 5th Meridian)</u>	<u>Sections</u>	<u>Acreage</u>
168 (cont'd)	113	12	1-36 incl.	48,000

Access to within 15 miles of the property is possible on Alberta Highway 58, an all-weather gravel road, which joins the MacKenzie Highway 50 miles to the west at High Level. The property can be reached along old seismic lines from this road either on foot or using tracked vehicles.

Chartered light aircraft on wheels are available from Peace Air Ltd. at the Fort Vermillion airstrip.

Helicopter landing sites in the Caribou Mountains are relatively few. They are generally restricted to old well sites, bogs and gravel bars on the larger creeks. Several lakes suitable for float-equipped light aircraft are present on top of the mountains and a small airstrip is located near Margaret Lake.

C.N.R. freight services run from Hay River to Edmonton through High Level three times a week. High Level and Fort Vermillion are connected to Edmonton by scheduled Coachways Bus service.

PREVIOUS WORK

Relatively little published geological data for this area is available. Geological Survey of Canada Memoir 313 (A.W. Morris, Devonian Stratigraphy of Northeastern Alberta and Northwestern Alberta) briefly discusses the Cretaceous rocks composing the mountains.

The most detailed and recent work has been published in the map Bedrock Geology of Northern Alberta - published in 1970 by the Research Council of Alberta.

Considerable seismic and presumably geological work has been done in the area by various oil companies. In addition a number of wells have been drilled and much of this data is on file with the Oil and Gas

Conservation Board of Alberta.

No previous record of mineral occurrences or mineral exploration in the Caribou Mountains is known.

GEOLOGY

The Caribou Mountains are composed of a sequence of flat-lying Cretaceous sediments. They have recently been described in the descriptive notes accompanying the map Bedrock Geology of Northern Alberta. The following summary is drawn mainly from this source supplemented by the author's personal observations.

The Plains area surrounding the mountains is underlain by the Loon River Formation. It consists of 600 - 800 feet of marine, dark grey, fossiliferous shale and laminated siltstone. Scattered beds and nodules of sideritic ironstone are reported. Its upper boundary is conformable with the overlying Shaftesbury formation.

The Shaftesbury Formation is the basal unit of the Caribou Mountains. It comprises 800 - 1,000 feet of marine, dark grey to black, highly fissile shale with scattered thin beds having bentonitic partings and abundant concretionary ironstone. About 250 feet above the base, a fine grained cherty sandstone layer 20-30 feet thick is present. The lower part of the formation contains thin, laminated, fish-scale bearing siltstones. Its upper boundary is conformable and gradational with the overlying Dunvegan Formation.

The Dunvegan Formation occupies a narrow strip near the top of the mountain area. It consists of a fine-grained, friable, feldspathic sandstone with scattered calcareous beds, laminated carbonaceous siltstone and dark grey, silty shale. This sequence is thought to be of deltaic origin and is about 200 feet thick in this area.

The uppermost beds present are on unnamed grey shale correlated on the basis of lithology and stratigraphic position with the Upper Cretaceous Amory Group. It is thought to attain a maximum thickness of 400 feet.

Glacial debris is abundant in the area between Carl Creek and Beaver Ranch Creek on the mountains' south face. In the creek beds, almost every type of igneous and metamorphic boulder can be found. Most boulders are sub-angular to rounded and no one rock type seems to predominate. An addition to the above mentioned rock types, smaller boulders of hard, medium-grained sandstone and fossiliferous grey limestones are found.

The streams themselves are generally a deep red colour near the mountain top, but this changes to a muddy grey downstream as large amounts of slumped shale and glacial debris are picked up from the banks.

The beds are uniformly flat-lying and seem to have undergone little tectonic disturbance. Structural passages for ore-bearing fluids - with the exception of porous beds - seem to be absent as do indications of any intrusive activity.

HISTORY AND WORK COMPLETED

Late in 1970 John Morin of Pine Point, N.W.T. delivered specimens of copper mineralization to Conwest Exploration Company Limited. On the basis of Morin's information Conwest planned a prospecting program in the mountains and obtained Quartz Mineral Exploration Permits 163 to 168 inclusive to cover the area of interest. Specimens of quartz containing bornite were said to have been found in the western part of the permit area and a specimen consisting of chalcocite and bornite in a matrix of dolomite, chlorite and serpentine were said to have originated in the eastern part of the permit area.

During early 1971, geological information concerning the area was

made to carry out an initial prospecting program, including stream sediment sampling.

In the second week of May, 1971 T. L. Horsley of Conwest Exploration Company Limited assisted by local trappers conducted a helicopter-assisted reconnaissance of the Caribou Mountains. The trappers could not find the source of the copper specimens and further stated it was many years since the specimens had been collected.

One of the trappers was quite adamant that he had found the specimen of chalcocite and bornite in its matrix of dolomite, chlorite and serpentine in the western part of the permit area.

To check out this remaining possibility of copper mineralization in the permit area Mr. H. S. Swinden and a helper sampled the stream sediments of all flowing creeks between Carl Creek and Beaver Ranch Creek.

The sampling was carried out with helicopter support. Samples were taken at 500-foot intervals where the creeks came down the gentle south face of the mountains.

GEOCHEMICAL RESULTS

A total of 181 samples were collected and sent to the Toronto laboratories of Barringer Research to be assayed for copper using .5 N Hcl. The analyses showed the copper content of the stream sediments to be uniform with an average partial copper content of 12 pp in.

CONCLUSIONS

There is very little possibility that a deposit of copper bearing minerals is present in the permit area. The geology is unfavourable both lithologically and structurally and no rocks similar to those specimens brought to Conwest are thought to be present in the bedrock of the permit area.

The copper specimens are believed to have been taken from boulders. A large amount of glacial debris occurs in the permit area. This debris covers almost complete spectrum of igneous and metamorphic rocks and is undoubtedly derived from the Precambrian Shield.

CONWEST EXPLORATION COMPANY LIMITED

CANADA) IN THE MATTER OF Section 37 of the Quartz
PROVINCE OF ONTARIO) Mining Regulations (Alberta Regulation
COUNTY OF YORK) 377/67 as amended by Alberta Regulation
To Wit:-) 397/68) under The Mines and Minerals Act, 1962.

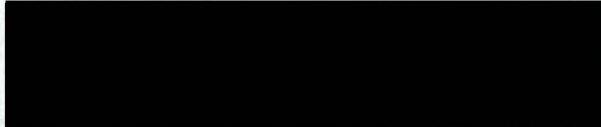
Statement of Expenditures
Province of Alberta Exploration Permit
Numbers 163 - 168 Inclusive

Salaries and wages	\$ 5,281.03
Travel to/from mobilization point (air fares, car rentals, etc.)	2,287.51
Transportation (helicopter charter)	13,594.23
Camp and cookery	936.05
Equipment	236.98
Assays	344.23
Miscellaneous	335.00
Head office exploration burden	<u>2,301.50</u>
	<u>\$25,316.53</u>

DECLARED BEFORE ME at the
City of Toronto, in the
County of York and Province
of Ontario, this 6th day
of August, 1971.

Donald B. MacDonnell

A Notary Public in and for the
Province of Ontario


T.L. Horsley, Manager,
Exploration and Development,
Conwest Exploration Company Limited.


APPENDIX

This is to certify that I, Harold Scott Swinden, resident of Toronto in the Province of Ontario, have the following academic background. I attended Dalhousie University in Halifax, Nova Scotia, during the years 1966-1970. In 1970, having completed all course requirements, I was granted the degree Bachelor of Science with Honours in Geology by Dalhousie University. During the field seasons from 1967-1969, I was employed as student geologist by the Nova Scotia Department of Mines, Conwest Exploration Company Limited and Imperial Oil Enterprises respectively in Nova Scotia, the Northwest Territories, Alberta and Yukon Territory.

Since 1970, I have been employed full time by Conwest Exploration Company Limited in the capacity of Exploration Geologist. I have gained experience in geological mapping, operation of ground geophysical surveys and supervision and operation of geochemical surveys in Ontario and Western Canada.

I was present in the permit area from May 15 to May 23 and was responsible for carrying out a stream sediment sampling program in the area between Carl Creek and Beaver Ranch Creek.

Toronto, Ontario
August 12, 1971.



H. Scott Swinden, B. Sc.

CERTIFICATE

I, Trevor Lorne Horsley, of [REDACTED], in the city of Toronto, in the province of Ontario do hereby certify:

- 1) That I am a Mining Engineer.
- 2) That I graduated from the University of British Columbia in 1952 with the degree of Bachelor of Applied Science.
- 3) That I am a registered Professional Engineer in the provinces of Ontario and British Columbia.
- 4) That I have been continuously engaged in my profession for 18 years.
- 5) That I have visited the permit area. That I was not present during the operation of the geochemical survey. That I have studied the data in Mr. Swinden's report on the permit area and previous data on the area. That as exploration manager for Conwest Exploration Company Limited, I assisted in planning the work carried out by Mr. Swinden in the permit area. That I have continuously directed Mr. Swinden's work since 1970 and know him to be a competent geologist.
- 6) That I have no interest, nor do I expect to receive any interest, directly or indirectly in the permit area.

Toronto, Ontario.
August 12, 1971.

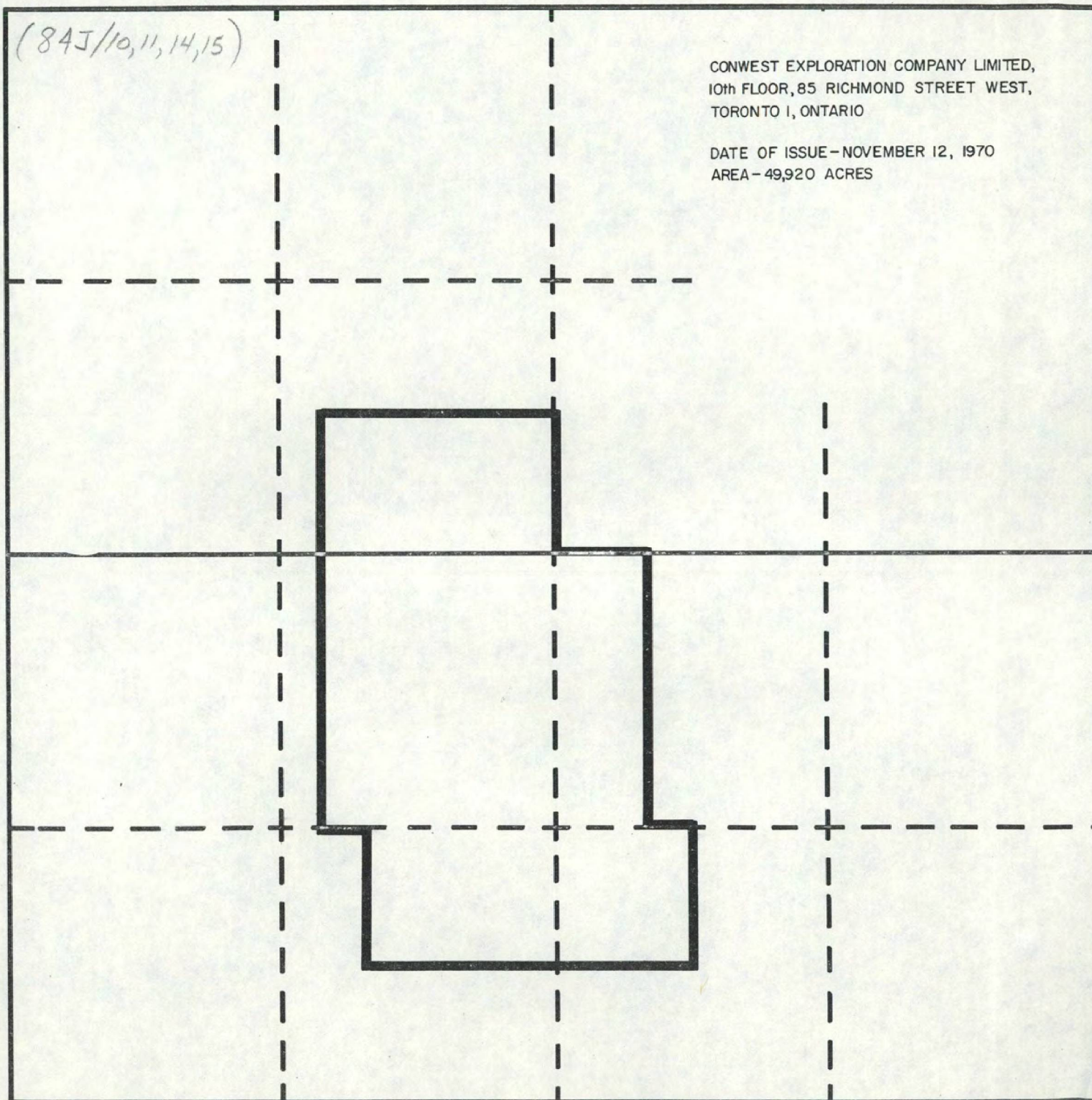
[REDACTED]
T. L. Horsley,
B.A.Sc., P. Eng.

QUARTZ MINERAL EXPLORATION PERMIT No. 164

(84J/10,11,14,15)

CONWEST EXPLORATION COMPANY LIMITED,
10th FLOOR, 85 RICHMOND STREET WEST,
TORONTO 1, ONTARIO

DATE OF ISSUE - NOVEMBER 12, 1970
AREA - 49,920 ACRES



TP. II3

TP. II2

TP. III

R. 7

R. 6

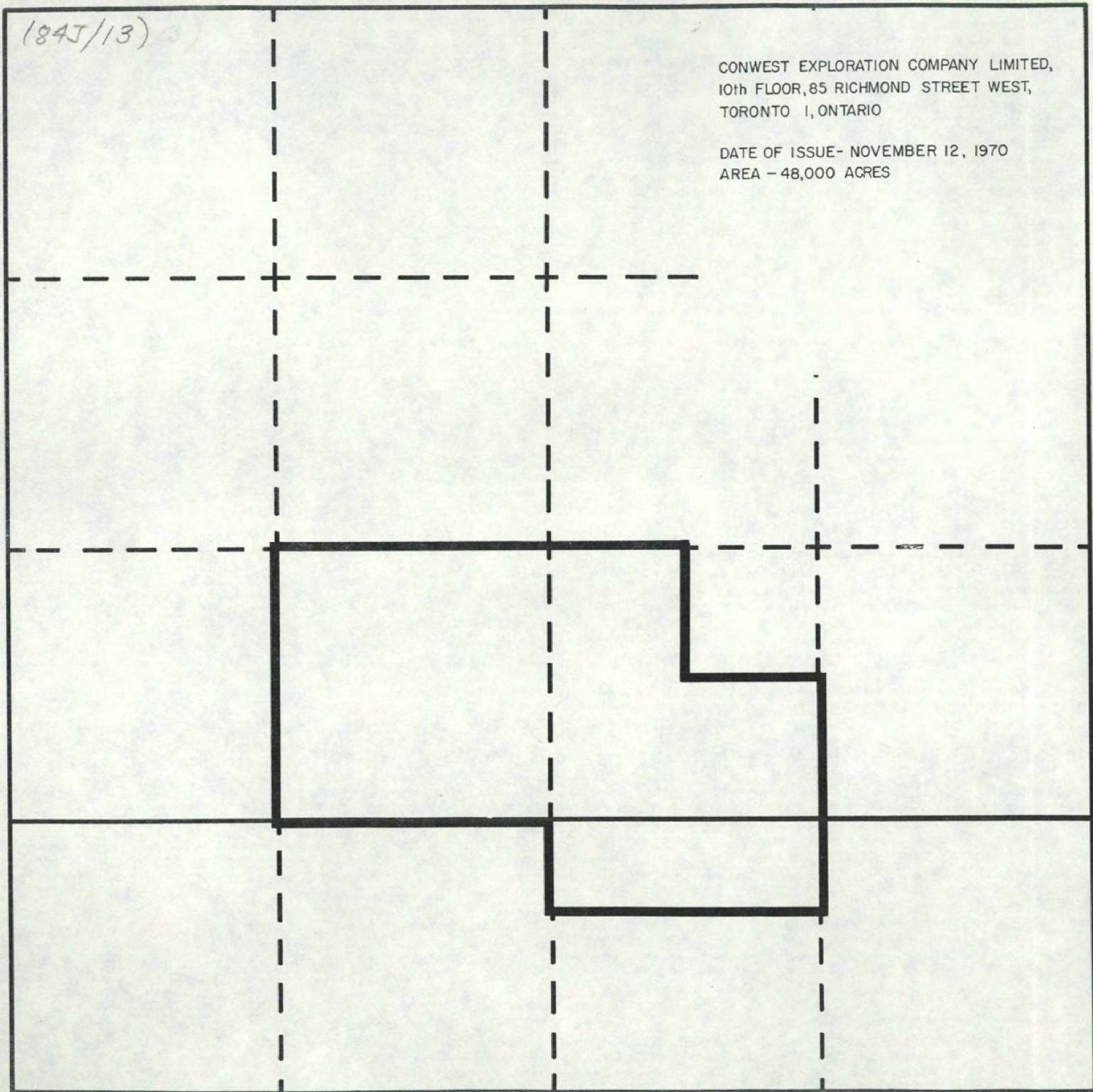
R. 5 W. 5 M.

QUARTZ MINERAL EXPLORATION PERMIT No. 168

(84J/13) (3)

CONWEST EXPLORATION COMPANY LIMITED,
10th FLOOR, 85 RICHMOND STREET WEST,
TORONTO 1, ONTARIO

DATE OF ISSUE- NOVEMBER 12, 1970
AREA - 48,000 ACRES



TP.113

TP.112

R.12

R.11

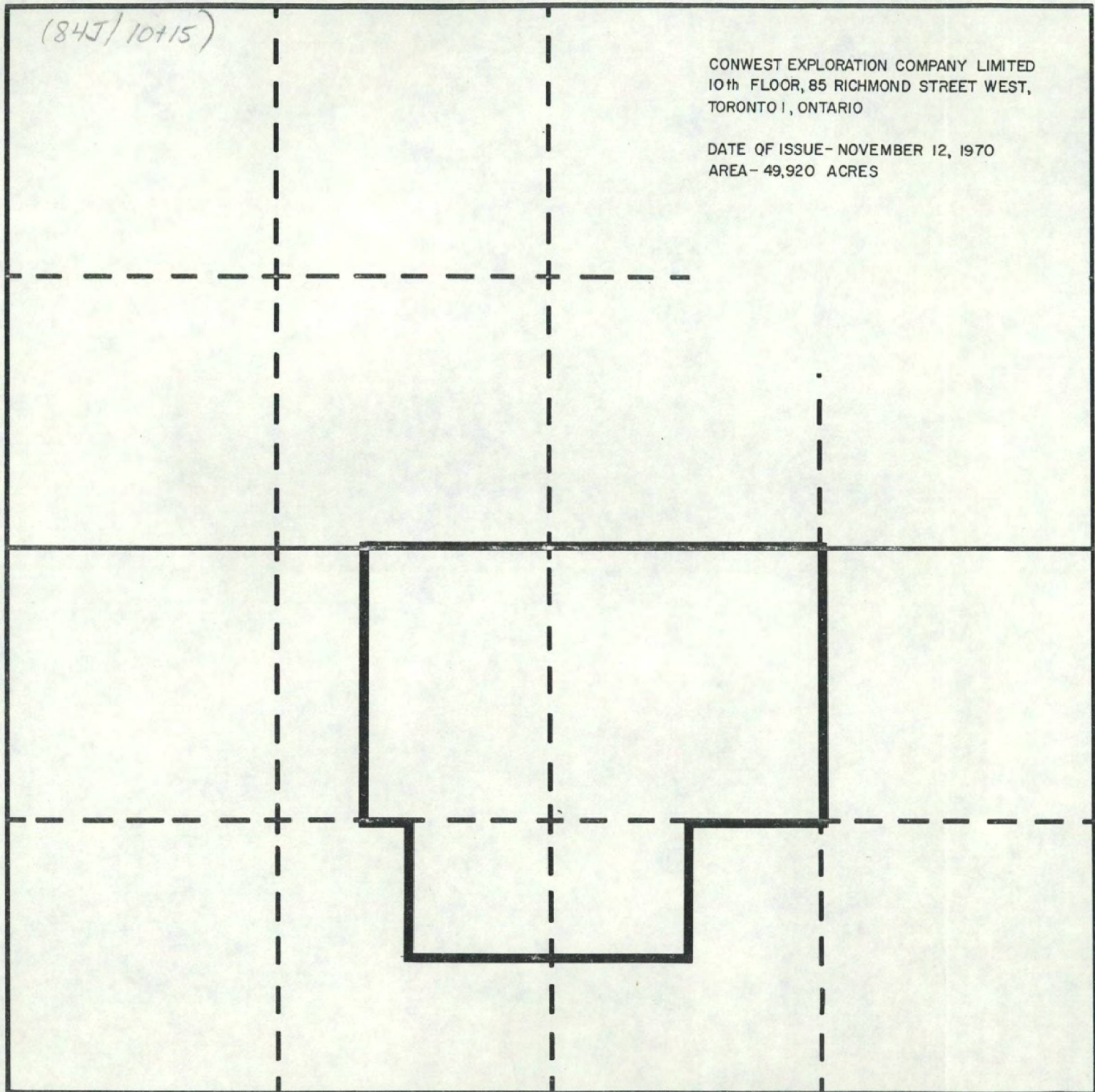
R.10 W. 5 M.

QUARTZ MINERAL EXPLORATION PERMIT No. 163

(84J/10715)

CONWEST EXPLORATION COMPANY LIMITED
10th FLOOR, 85 RICHMOND STREET WEST,
TORONTO 1, ONTARIO

DATE OF ISSUE - NOVEMBER 12, 1970
AREA - 49,920 ACRES



R. 6

R. 5

R. 4 W. 5 M.

TP. II2

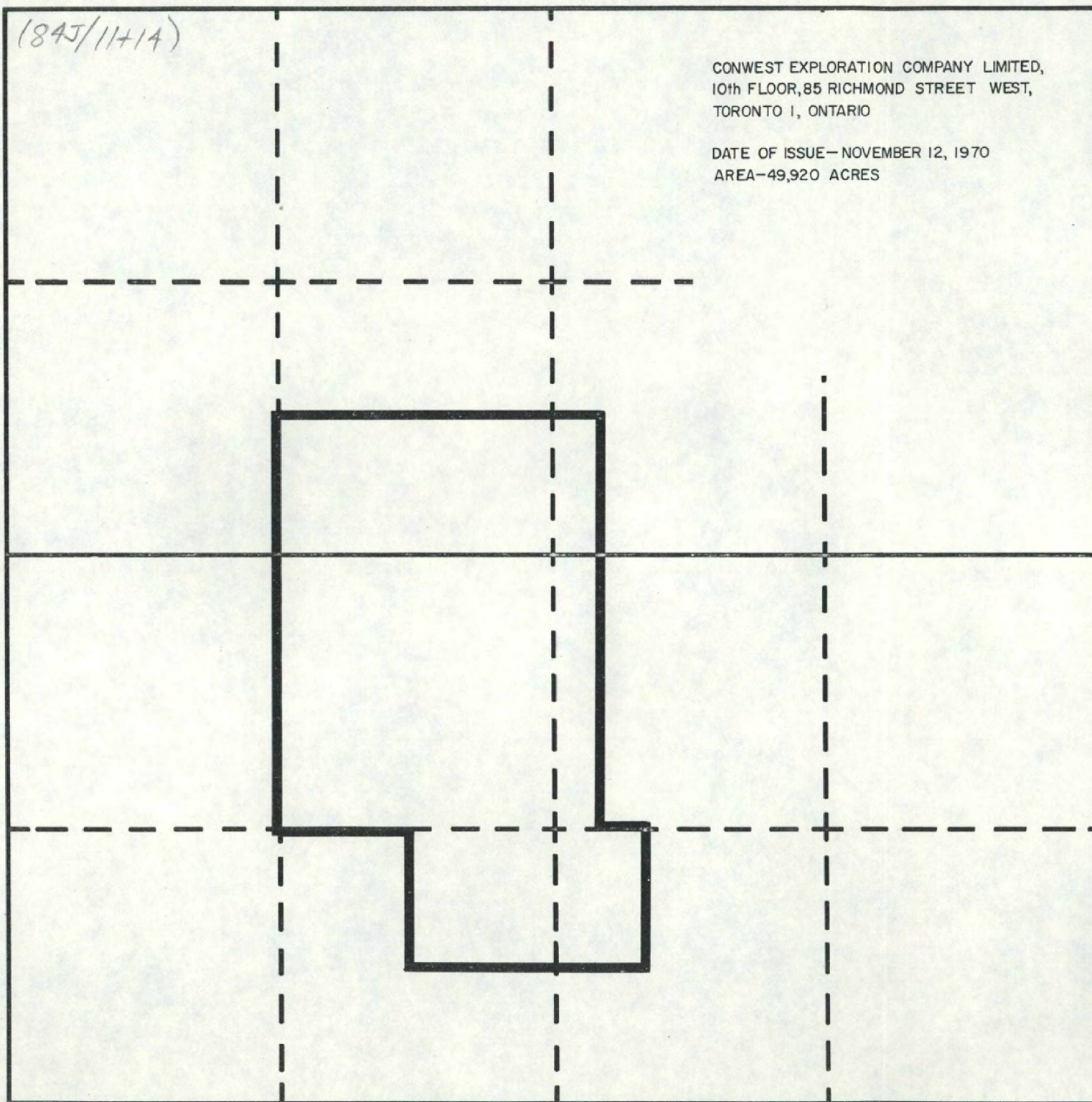
TP. III

QUARTZ MINERAL EXPLORATION PERMIT No. 165

(84J/11+14)

CONWEST EXPLORATION COMPANY LIMITED,
10th FLOOR, 85 RICHMOND STREET WEST,
TORONTO 1, ONTARIO

DATE OF ISSUE—NOVEMBER 12, 1970
AREA—49,920 ACRES



TP. 113

TP. 112

TP. 111

R. 8

R. 7

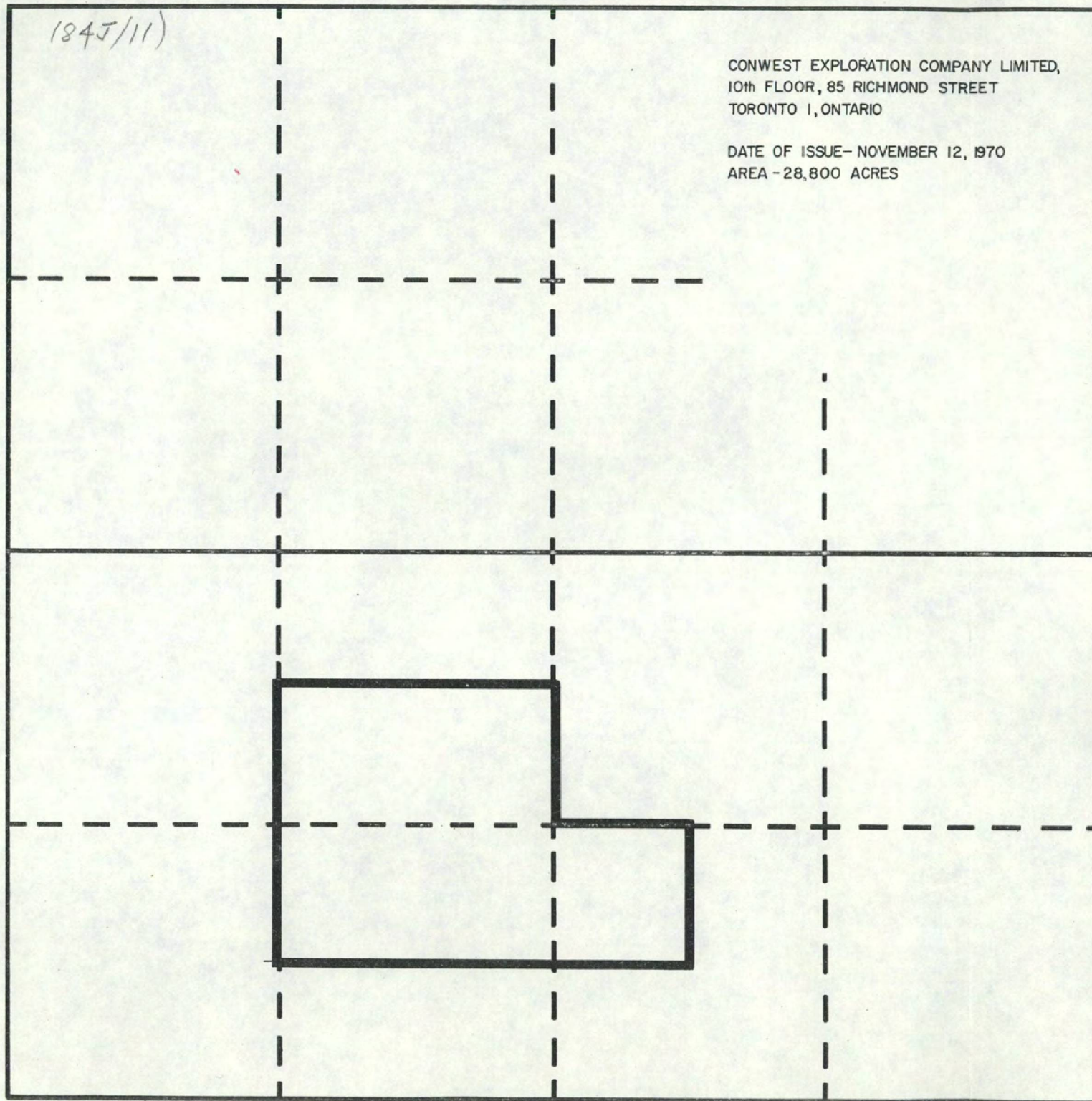
R. 6 W. 5 M.

QUARTZ MINERAL EXPLORATION PERMIT No.166

(84J/11)

CONWEST EXPLORATION COMPANY LIMITED,
10th FLOOR, 85 RICHMOND STREET
TORONTO 1, ONTARIO

DATE OF ISSUE- NOVEMBER 12, 1970
AREA - 28,800 ACRES



R. 9

R. 8

R. 7 W. 5 M.

TP. II2

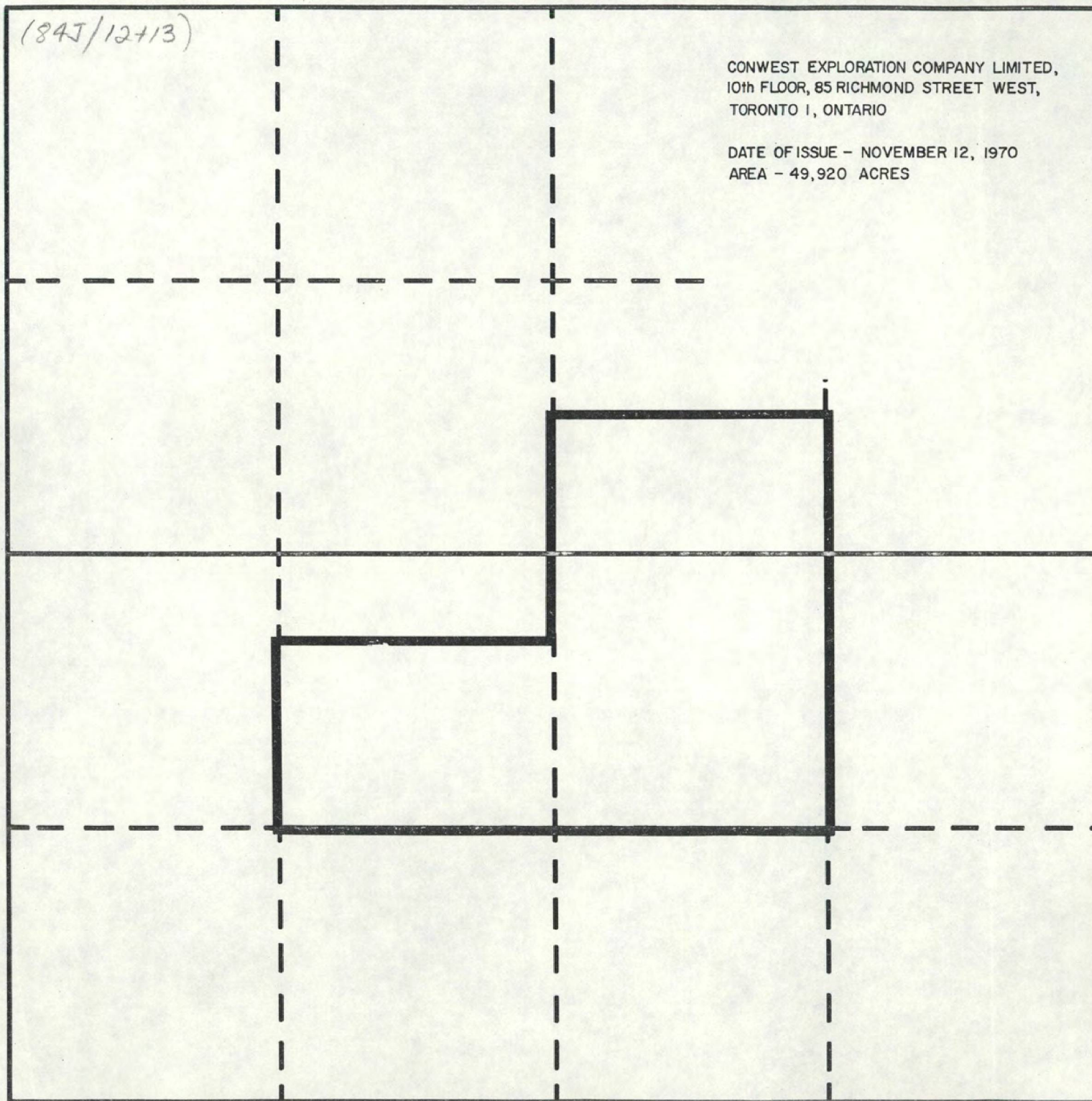
TP. III

QUARTZ MINERAL EXPLORATION PERMIT No.167

(84J/12+13)

CONWEST EXPLORATION COMPANY LIMITED,
10th FLOOR, 85 RICHMOND STREET WEST,
TORONTO 1, ONTARIO

DATE OF ISSUE - NOVEMBER 12, 1970
AREA - 49,920 ACRES



TP.II3

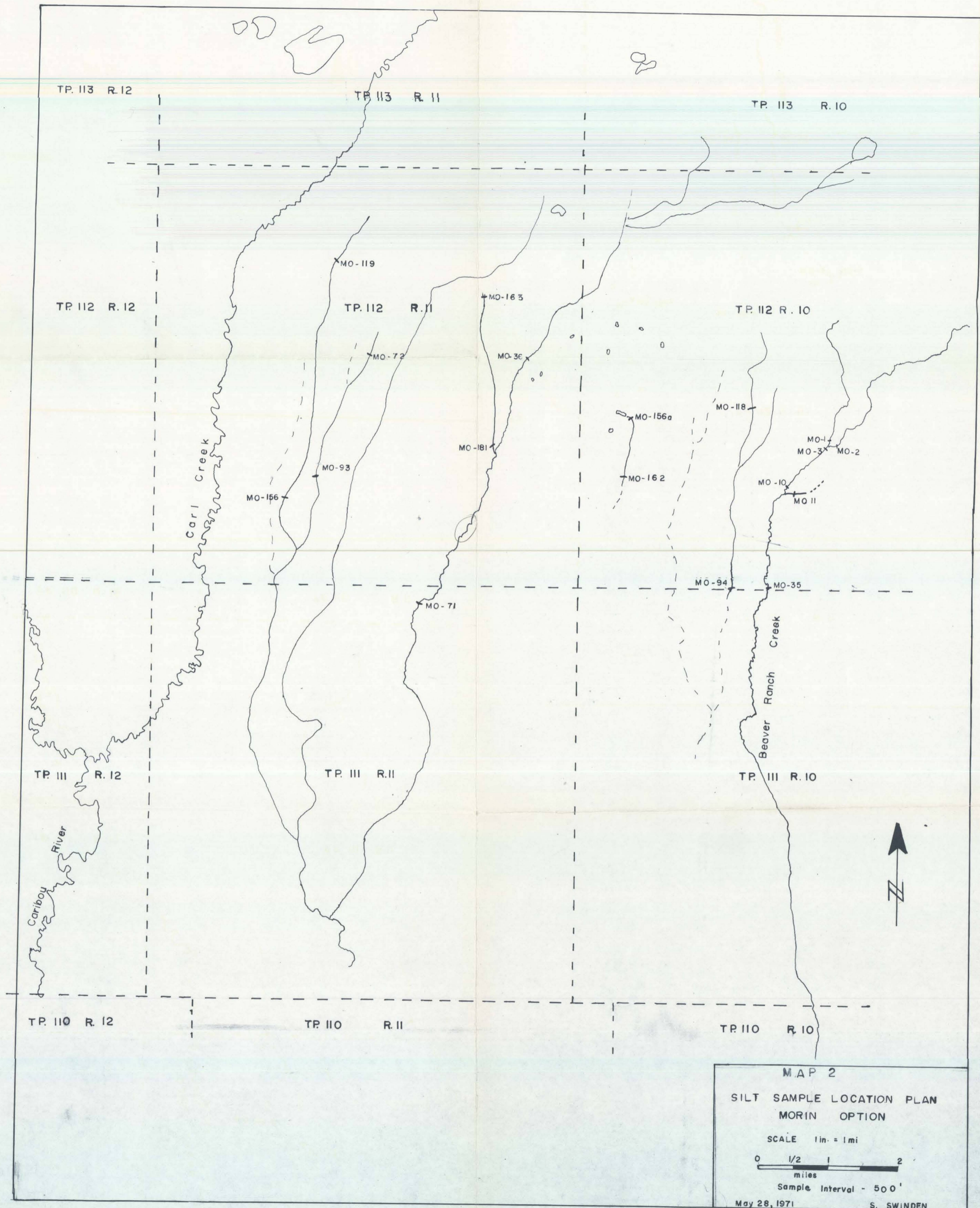
TP.II2

TP.III

R.II

R.I0

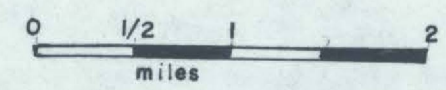
R.9 W. 5 M.



MAP 2

SILT SAMPLE LOCATION PLAN
MORIN OPTION

SCALE 1 in. = 1 mi



Sample Interval - 500'

May 28, 1971

S. SWINDEN

19710013



MAP 1
PERMIT AREA - MORIN OPTION
 Solid Line Outlines Permit Boundaries
 SCALE 1:250,000
 0 5 10
 miles
 May 28, 1971 S. SWINDEN

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