

Gulf Minerals Canada Limited

SUITE 1300, 10 KING STREET E., TORONTO 1, ONTARIO. (416) 362-6825

840510

F. C. PERRY
Manager Exploration

April 29, 1974

Mr. Noel O'Brien
Denison Mines
20th Floor
4 King Street West
Toronto, Ontario
M5H 1C2

Re: Consolidated Rexpar Minerals - Birch Island Property

Dear Noel:

Thank you for the opportunity of reviewing the Summary Report prepared by Dr. Jean Descarreaux on the Rexspar ground, which is returned herewith.

We have spent an interesting few hours reviewing this report, as well as the reports in the literature, relevant to the Rexpar property. One of our geologists had examined the property a few years ago as it turned out, and was able to fill us in on conditions at the site, general geological setting and so forth.

It has been decided that we will decline the opportunity of participation in the continued evaluation of this uranium occurrence. However, we do wish you every success in your continued work at the property.

Sincerely,

Original Signed
By F. C. Perry

F. C. Perry

/hb
encl.

FILE COPY	
Exploration File	<input checked="" type="checkbox"/>
General File	<input type="checkbox"/>
Lease File	<input type="checkbox"/>
S & M Contract File	<input type="checkbox"/>
A/C Payable File	<input type="checkbox"/>
Catalogue File	<input type="checkbox"/>
Library	<input type="checkbox"/>
File No.	NT 5-92-I-9

FILE COPY



MEMORANDUM

GUS 10120 A

DATE

26 APR 74

TO

F. C. PERRY

ROOM _____

BLDG. _____

 1 PER OUR CONVERSATION 9 FOR HANDLING 2 PER YOUR REQUEST 10 PLEASE SEND ME FILE 3 FOR YOUR INFORMATION 11 FOR YOUR COMMENTS 4 FOR YOUR FILE 12 PLEASE EXPLAIN 5 FOR YOUR APPROVAL 13 PLEASE PHONE _____ 6 FOR YOUR SIGNATURE 14 FOR DISCUSSION 7 FOR FOLLOW UP FILE 15 PLEASE SEE ME 8 FOR DISTRIBUTION 16 RETURNED WITH THANKS 17 PLEASE RETURN TO: _____

REMARKS:

HEREWITH REXSPAR. I HAVE
TURNED IT DOWN, BUT SEE
BELOW.

I HAVE INFORMATION OF
DESCARREUX (WHO WROTE THE REPORT)
FROM AN ANONYMOUS SOURCE.

HE IS A GOOD GEOLOGIST
(THE REPORT SUGGESTS THAT)

ORIGINALLY A BEAUCHEMIN (SULLIVAN
GROUP) PROTEGE' AND PRESUMABLY

SIGNATURE

LOCATION

MEMORANDUM

GUS 10120 A

DATE _____

TO _____

ROOM _____

BLDG. _____

 1 PER OUR CONVERSATION 9 FOR HANDLING 2 PER YOUR REQUEST 10 PLEASE SEND ME FILE 3 FOR YOUR INFORMATION 11 FOR YOUR COMMENTS 4 FOR YOUR FILE 12 PLEASE EXPLAIN 5 FOR YOUR APPROVAL 13 PLEASE PHONE _____ 6 FOR YOUR SIGNATURE 14 FOR DISCUSSION 7 FOR FOLLOW UP FILE 15 PLEASE SEE ME 8 FOR DISTRIBUTION 16 RETURNED WITH THANKS 17 PLEASE RETURN TO: _____

REMARKS:

STILL SO ATTACHED AND
TO BE HANDLED WITH GLOVES OR
SOME RESERVE OF SECRETS.

I HAVE SUGGESTED THAT
THE FLUORITE-URANIUM-VOLCANIC
ASSEMBLAGE OFFERS THE POSSIBILITY
OF NATURAL ENRICHMENT OF THE URANIUM.
THE FIELD IS TOO VAST FOR MY
FURTHER SINGLE EFFORTS



SIGNATURE

LOCATION

REXSPAR MINERALS - BIRCH ISLAND, B.C.

NOTES ON SUMMARY REPORT

1. Introduction:

These notes concern a report upon the property of Consolidated Rexspar Minerals and Chemicals Limited at Birch Island, B.C., submitted by Jean Descarreaux, Ph.D. of Val D'Or, Quebec, and dated February 14, 1974. The report recommends further diamond drilling (9,000 feet in 30 holes) to complete exploration of the uranium potential of the property. Participation is not recommended.

2. Summary of the Report:

The Rexspar property is easily accessible by road or rail (Birch Island, B.C. on Highway 5 or C.N.R. Main Line). The area is unglaciated, with residual soil or river alluvium (N. Thompson Riv.). Many geophysical-geochemical surveys have been made for a variety of minerals. Diamond drilling has established moderate reserves of fluorite and of uranium. The report concludes that further exploration is justified only for uranium, and only within a trachyte formation, near the base.

3. Comments:

The report is workmanlike and reasonable, but the tonnage and grade now established is uneconomic today. An increase in tonnage of uranium-bearing trachyte is indeed probable. However, it is just as probable that the grade will remain too low for profit, i.e. 0.5 lbs. U_3O_8 /ton. The writer has had experience in exploring radioactive trachyte in the area southeast of Penticton, B.C., where persistent low-grade mineralization offered phenomenal tonnage but never approached ore-grade (1950). Notes on this occurrence are lost. But Lang of the G.S.C. has studied the showings and official reports are available.

4. Recommendation:

Participation is not recommended.

5. Special Considerations:

The rare coincidence of uranium and fluorite together in a volcanic environment suggest the possibility of uranium enrichment occurring naturally through separation of isotopes by fluoride diffusion. Attention is drawn, and study suggested, but no attempt is made to evaluate the degree of probability by reasoning.

/hb
April 26, 1974

R. B. Allen

82M 007, 021, 042

SUMMARY REPORT
BIRCH ISLAND PROPERTY

CONSOLIDATED REXSPAR MINERALS
AND CHEMICALS LIMITED

TORONTO, Ontario.
FEBRUARY 14, 1974.

Jean Descarreux, Ph.D.
Geologist.

TABLE OF CONTENTS

		PAGE
I	INTRODUCTION	1
II	LOCATION AND ACCESS	1
III	HISTORY	2
IV	GEOLOGY	6
V	MINERALIZED ZONES	
	-Fluorite	7
	-Uranium	8
	-Other types of mineralization	11
VI	EXPLORATION POSSIBILITIES	12
VII	CONCLUSIONS	
VIII	RECOMMENDATIONS	
	APPENDIXES	
	A -Claims to be abandoned	
	B -Proposed drill holes	
	FIGURES	
	1 -Location map	
	2 -Limits of the property	
	COMPILATION MAP (1" = 300')	

I - INTRODUCTION

This report aims to summarize the available information on the Rexspar property at Birch Island, B.C. It is based on numerous reports and maps produced by or for Rexspar Uranium and Metals Mining Company Limited, Consolidated Rexspar Minerals and Chemical Ltd., Denison Mines Ltd. and Kerr Addison Mines Ltd.

The mineralized zones are briefly described but special attention is paid to the exploration possibilities for uranium.

II - LOCATION AND ACCESS

The Rexspar property is located South of Birch Island, a small village on the North Thompson river, 85 miles North of Kamloops, British Columbia. The area is served by highway number 5, and by the main line of the Canadian National Railway.

The property lies on the Southern slope of the North Thompson valley. It has a roughly triangular shape, with one side following the North Thompson valley for five (5) miles at elevation 1,400 ' and the apex being two (2) miles to the

North-East of Granite Mountain (7,420').

A seven mile, all weather road connects Birch Island to the main ore zones. The rest of the property is served by a good network of four wheel drive roads.

III - HISTORY

The property includes the former Smuggler claims, investigated in the 1926-1929 period for silver bearing galena in quartz veins and for bog manganese. Presence of fluorite was first reported in 1918 and in 1943 the zone was diamond drilled by the R.C. Fluorspar Syndicate. In 1949 some specimens from the fluorite zone were found to be radioactive and in 1951 a company (Rexspar Uranium and Metals Mining Company Ltd.) was formed to develop the claims. An extensive program of exploration and development was carried out until 1959, chiefly over the uranium orebodies. An agreement for sale of uranium precipitates was negotiated with Eldorado Mining & Refining Ltd. in 1957, but difficulties in arranging for financing prevented construction of a treatment plant. In 1962 and 1963 some drilling was done over the fluorite zone.

In the 1943-1963 period, 342 surface diamond

drill holes for a total footage of 53,939 feet, 2,180 feet of drifting, cross cutting and raising and 8,304 feet of underground drilling were completed, the great bulk of this work being concentrated in the main ore zones. Geological mapping, prospecting, radiometric surveying, trenching as well as metallurgical testing were also performed.

Denison Mines Ltd. purchased an interest in Consolidated Rexspar in 1968 and took over the management of exploration. Much additional ground around the Crown Grant was purchased, staked or optioned, so that in 1969 the Rexspar property totalized 393 claims. A large program of exploration and development was carried out in 1969 and 1970; a brief outline is given below:

Line cutting: The whole property has been covered, a total of 198 miles of line.

Radiometric survey: The whole property has been covered by scintillometer survey and 18 miles by radon survey.

I. P. survey: The whole property, except the extreme South and West ends, has been covered, a total of 129 miles, with the aim of locating the highly pyritic, uranium bearing lenses in the trachyte.

Soil sampling: The central portion of the

property has been covered by soil survey for Mo and U. A soil sampling program for Cu and Mo has been carried out over the Southern end of the property.

Geological mapping: The whole property has been mapped.

Diamond Drilling: A total of 55 holes (11,618') have been drilled, divided into 24 holes (7,035' BQ) for exploration, and into 31 (4,583' NQ) holes drilled over or next to the fluorite zone. Four(4) new lenses or uranium bearing "pyrite-mica" were discovered during the exploration drilling. Not enough follow-up work was carried out to disprove their economical significance.

The program was continued in 1972 and consisted in soil sampling for F and Mo in the Northeast portion of the property, in a systematic channel sampling of the uranium mineralization in the "A" zone adit, and in diamond drilling (4 holes for 1,313') between the fluorite zone and the "A" zone and 3 holes for 1,060' between the "A" and the "BD" zone.

Kerr Addison Mines Ltd. signed an agreement in July 1973 with Consolidated Rexspar in order to search for additional Ca F₂ bearing zones. Six (6) diamond drill holes totalling 2,026' were drilled. Three (3) holes were drilled

to test resistivity highs in the schists, two (2) to test Mo S₂ soil anomalies and the sixth to test the "F" zone. None of the holes encountered economic grade Ca F₂ mineralization, thus no increase in potential reserves has been established.

After a total of 403 surface holes for 68,583 feet, and 8,304 feet of underground drilling, the ore reserves stands as follow:

Fluorite zone:

1,308,000 tons grading 23.46 Ca F₂ (Denison Mines, May 1971).

Uranium zones (Robertson, 1967) :

A zone	526,400 tons	1.86 lbs/ton	U ₃ O ₈
BD zone	638,600 tons	1.81 lbs/ton	U ₃ O ₈
B zone	396,100 tons	1.55 lbs/ton	U ₃ O ₈

TOTAL:

	1,561,100 tons	1.76 lbs/ton	U ₃ O ₈
--	----------------	--------------	-------------------------------

IV - GEOLOGY

The property is underlain by an assemblage of metamorphosed sedimentary and volcanic rocks, presumably of a late Pre-Cambrian age, intruded by a body of granodioritic composition and Mesozoic age, outcropping to the South; a few small dykes of variable composition cut across the Pre-Cambrian series. The following is the interpreted sequence from the bottom: biotitic-chloritic gneiss, schists (quartz-sericite schists, chlorite schists, quartzite, phyllite); tuffaceous and porphyritic trachyte, grading laterally into porphyry dacite; granodiorite and dykes.

The Pre-Cambrian series has been gently folded and displays evidence of strong shearing, both in steep, rotational faults and in low dipping, thrust faults. The general strike is N.70°W., dipping to the N.E. at 10° - 30°, but in the main ore zone the strike is N. 30° E., with dip about 30° N.W.

The most significant mineralization is in the form of hydrothermal replacement, probably genetically related to the granodioritic intrusion and restricted to the trachytic formation. Replacement bodies occur as lenses of variable size, roughly following the foliation of the host trachyte. Of less

importance is the open space mineralization, in the form of quartz lenses, usually along the schistosity, carrying variable amounts of pyrite, galena, chalcopyrite and fluorite; this kind of mineralization can occur in any rock type.

V - MINERALIZED ZONES

FLUORITE

The fluorite deposit is located east of the Foghorn Creek (see compilation map). It is about 1,300 ' long and has an average true thickness of 80 feet. The host rock is a tuffaceous trachyte. Ore reserves were calculated by Denison Mines Ltd. (May 1971) to be 1,308,000 tons grading 23.46% Ca F₂ .

Location of the orebody makes it well suitable for open pit mining.

The last exploration program for fluorite consisted in 6 holes drilled by Kerr-Addison in 1973. This program failed to enlarge the fluorite reserves. It is felt that no further work is warranted but there are a few small geochemical anomalies (Mo-F) remaining untested to the northeast. They are regarded as low priority targets which could eventually be worked when new exploration program for uranium take place. Some low

Ca F₂ values were obtained in a few exploration drill holes but follow-up is not justified or has been done without success.

URANIUM

Three (3) uranium bodies, designated as the "A", "B" and "BD" zones, were discovered and outlined. They are close to the fluorite zone and consist of replacement lenses conforming to the enclosing trachyte. Several other radioactive zones, containing low uranium values, have been discovered. The uranium bearing formation is micaceous and pyritic, and located at the lower part of the trachyte. Usually the most radioactive material ("Ore type") is fine grained and the low grade material is coarse grained. The main radioactive minerals are uraninite, urano-thorite and thorite.

Three (3) main orebodies have been well delineated.

The ore reserves as recalculated in 1967 by D.S. Robertson are as follow:

A zone	526,400 tons	1.86 lbs/ton	$U_3 O_8$
BD zone	638,600 tons	1.81 lbs/ton	$U_3 O_8$
B zone	396,100 tons	1.55 lbs/ton	$U_3 O_8$

Total: 1,561,100 tons 1.76 lbs/ton $U_3 O_8$
or 2,750,800 pounds $U_3 O_8$

Most of the ore can be recovered by open pit mining methods.

The "F" uranium zone is located west of the "BD" zone and west of the Foghorn Creek. It consists of a flat zone in trachyte, sub-outcropping on the edge of a steep slope. Rexspar did ten (10) X-Ray drill holes and sixteen (16) diamond drill holes. Two (2) more holes were drilled in 1969 and one (1) in 1973. The results were not encouraging, except for a limited CaF_2 intersection. Core recovery is extremely poor, as low as 20%. Trenching was done. The attempt to drive an adit was unsuccessful; bedrock was not reached.

Good scintillometer, local good radon, fair I.P. and geochemical anomalies are factors which indicate the area warrants further investigation. However, the only noticeable $U_3 O_8$ value reported comes from a float and was 1.8 lbs/ton. Hole 73.5 has given 0.03% $U_3 O_8$ over 6 feet and 0.01% $U_3 O_8$ over 5 feet. Pisani in 1970 recommended that no further drilling should be undertaken, unless new techniques to directly improve core

recovery are devised. Driving an adit would be a difficult and very expensive alternative.

The other uranium indications, besides the "A", "B", "BD" and "F" zones, are located in the Northeast part of the property. They are:

<u>HOLE</u>	<u>LOCATION</u>	<u>BEST VALUES</u>
69-2	18N - 21 E	22 ft. - 0.32 lbs/ton U ₃ O ₈
69-13	21N - 75 - 50 E	6 " - 0.22 " " "
		3 " - 0.42 " " "
		5 " - 0.28 " " "
69-14	21N - 73 E	5 " - 0.64 " " "
		5 " - 0.28 " " "
		11 " - 0.28 " " "
69-15	12N - 57 E	4 " - 0.96 " " "
		9 " - 1.17 " " "
69-17	24N - 37 E	20 " - 0.23 " " "
69-18	21N - 34 E	58 " - 0.31 " " "

These mineralized intersections obtained during the 1969 drilling program were followed only by limited geochemical surveys. The geology is good since the area is underlain by trachyte. A few favorable pyrite-mica zones were

found along the $U_3 O_8$ values. We have compiled all the geophysical and geochemical anomalies detected in the North-eastern part of the property, as well as the known U occurrences and the drill holes. It is evident that follow-up is warranted to extend the known U occurrences and to verify some of the untested anomalies located in the favorable geological environment. This corresponds with the recommendations of Pisani and others.

OTHER TYPES OF MINERALIZATION

Thorium is present in small quantity in both the uranium zones and in the "pyrite-mica" lenses; rare earths molybdenum and strontium are by-products of the fluorite ore.

Small quartz veins slightly mineralized in lead, locally in zinc, and also in copper, are widespread on the property.

Bog manganese occurs as a sub-soil deposit of black oxide but investigations have proved it to be well below commercial grade.

VI - EXPLORATION POSSIBILITIES

It was seen that all the known occurrences of fluorite and uranium are located within the trachyte, close to the contact with the underlying schist. The orebodies found to date are located at the western edge of the trachyte zone, where the contact with the schist is shallow. Elsewhere, where the trachyte-schist contact is deep, favorable pyrite-mica zones and low values of uranium were locally intersected by drilling over a strike length of over two (2) miles.

It is believed that all the lower part of the trachyte still offer exploration possibilities since the geophysical and geochemical surveys were not effective to a great depth. The only effective technique to explore the lower part of the trachyte is deep drilling.

The possibilities to extend the "A", "B" and "BD" uranium ore zones are limited by the numerous drill holes and underground workings. The same is true for the "F" zone and the fluorite zone.

There is no potential for the other types of mineralization.

CONCLUSIONS

1. Fluorine and uranium minerals were found only within the lower part of the trachyte horizon. More exploration outside the trachyte is not justified.

2. Many holes were drilled but most of them were to develop and extend the fluorite zone and the three (3) uranium zones ("A", "B", "BD") .

3. The ore reserves are estimated as follow:

Fluorite zone:	1,308,000 tons grading 23.46% CaF_2
Uranium zones:	"A" - 526,400 tons grading 1.86 lbs/ton U_3O_8
	"B" - 638,600 tons grading 1.81 lbs/ton U_3O_8
	"BD" - 396,100 tons grading 1.55 lbs/ton U_3O_8
	Total: 1,561,100 t./ 1.76 lbs/ton U_3O_8

These bodies can be mined by open pits.

4. The western part of the trachyte has been well explored by numerous drill holes. It seems unlikely that the fluorite zones and the three uranium ("A", "B", "BD") can be enlarged. The "F" zone has also been well explored by drilling but the results are not encouraging.

5. The Central and Eastern parts of the trachyte horizon have been partly explored by drilling. More drill holes are warranted for the following reasons:

- U and F occurrences were found only in the trachyte.

- Follow up drilling is warranted for low but interesting U values intersected by seven of the previous drill holes where pyrite-mica zones favorable to uranium mineralization are known to occur.

- There are a few untested geophysical and geochemical anomalies.

- The different surveys were effective to a shallow depth. Because of the hilly topography, a good part of the trachyte can be considered as unexplored at depth. A systematic program of widely spaced drill holes is warranted in this favorable geological environment.

- If any new orebodies are to be found, it will more likely be over 100 feet or 200 feet deep.

RECOMMENDATIONS

1. No work is recommended at this time on a total of 151 claims lying outside the favorable trachyte zone. They are listed in Appendix A.

2. No survey is proposed.

3. It is recommended to proceed with a 30 holes drilling program (9,000 feet) to test a few geophysical and geochemical anomalies, to try to extend uranium bearing zones intersected by previous exploration drill holes and to obtain geological information in the yet undrilled parts of the favorable trachyte (see appendix B and compilation map).

The cost of this program is estimated as follow:

30 diamond drill holes (averaging 300 feet in depth)	
for 9000 feet at \$15/foot	\$135,000
Roads, core racks, miscellaneous	5,000
Management (15%)	21,000
	<hr/>
<u>TOTAL:</u>	<u>\$161,000</u>

TORONTO, Ontario.

FEBRUARY 14, 1974.


Jean Descarreaux, Ph.D.

Geologist.

APPENDIX -A-

CLAIMS OUTSIDE THE TRACHYTE ZONE AND NOT OF

PRIMARY INTEREST

RADIO 13 - 14 - 11 - 12 - 9 - 10 - 7 - 8 - 17 - 18 - 5 - 6 -
15 - 16 - 19 - 21 - 23 - 25 - 20 - 22 - 24 - 26 -

ELLA 7FR - 4FR - 5FR - 6FR - 3FR -

ACTIVE 6 - 2FR - 4 - 5-3 - 1 - 8 - 7 - 16FR - 10 - 9 - 17FR -
12 - 80FR - 11 - 14 - 13FR - 81FR - 15FR -

TOP 34 - 32 - 31 - 30 - 28 - 26 - 29 - 27 - 17 - 21 - 22 -
11 - 12 - 23 - 24 - 13 - 14 - 15 - 16 -

JAM 15 - 17 - 21 - 23 - 25 - 27 - 19 - 2 - 4 - 6 - 8 - 10 -
12 - 14 - 3 - 1 - 5 - 7 - 9 - 11 - 13 - 20 - 22 - 24 -
26 - 28 - 33 - 35 - 37 - 39 - 41 - 34 - 36 - 38 - 40 - 42 -

RAY 37 - 38 - 1 - 2 - 19 - 20 - 39 - 40 - 3 - 4 - 21 - 22 -
41 - 42 - 5 - 6 - 23 - 24 - 43 - 44 - 7 - 8 - 25 - 26 -
45 - 46 - 9 - 10 - 27 - 28 - 47 - 48 - 11 - 12 - 29 - 30 -

PA 11FR - 12 - 10 - 35 - 36 - 33 - 34 - 31 - 32 - 30 - 28-
26 - 27 - 25 -

APPENDIX - B-

PROPOSED DRILL HOLES

<u>LOCATION</u>	<u>REMARKS</u>
42N 38E	High scintillometer
42N 55E	Geological information
39N 22E	To test I.P. and radon anomalies
36N 75E	To test I.P. anomaly
30N 12E	To test I.P. anomaly
30N 50E	Geological information
27N 36E	To test I.P. anomaly
24N 64E	To test radon anomaly plus geological information
23N 35E	To investigate U zone in D.D.H. 69-18
23N 73E	To investigate U zone in D.D.H. 69-14
23N 75 + 50E	To investigate U zone in D.D.H. 69-13
21N 21 + 50E	To investigate U zone in D.D.H. 69-2
21N 32E	To investigate U zone in D.D.H. 69-18
21N 71E	To investigate U zone in D.D.H. 69-14
18N 35E	To investigate U zone in D.D.H. 69-18
18N 45E	Geological information
18N 66E	Geological information

APPENDIX - B - (2)

PROPOSED DRILL HOLES

<u>LOCATION</u>	<u>REMARKS</u>
18N 76E	To investigate U zone in D.D.H. 69-13
15N 57E	To investigate U zone in D.D.H. 69-15
12N 55E	To investigate U zone in D.D.H. 69-15
12N 59E	To investigate U zone in D.D.H. 69-15
12N 86E	Geological information
9N 57E	Geological information
6N 15E	To test I.P. anomaly
6N 49 + 50E	Geological information
0N 23E	Geological information
6S 13E	To test I.P. anomaly
18S 23E	To test I.P. anomaly
24S 22E	To test radon anomaly plus geological information
One hole and extra footage if any	To be located according to the results of the previous holes.

- TOTAL of 30 holes for 9,000 feet.

These drill holes will be vertical and stopped a few feet after the trachyte-schist contact.

BRITISH COLUMBIA

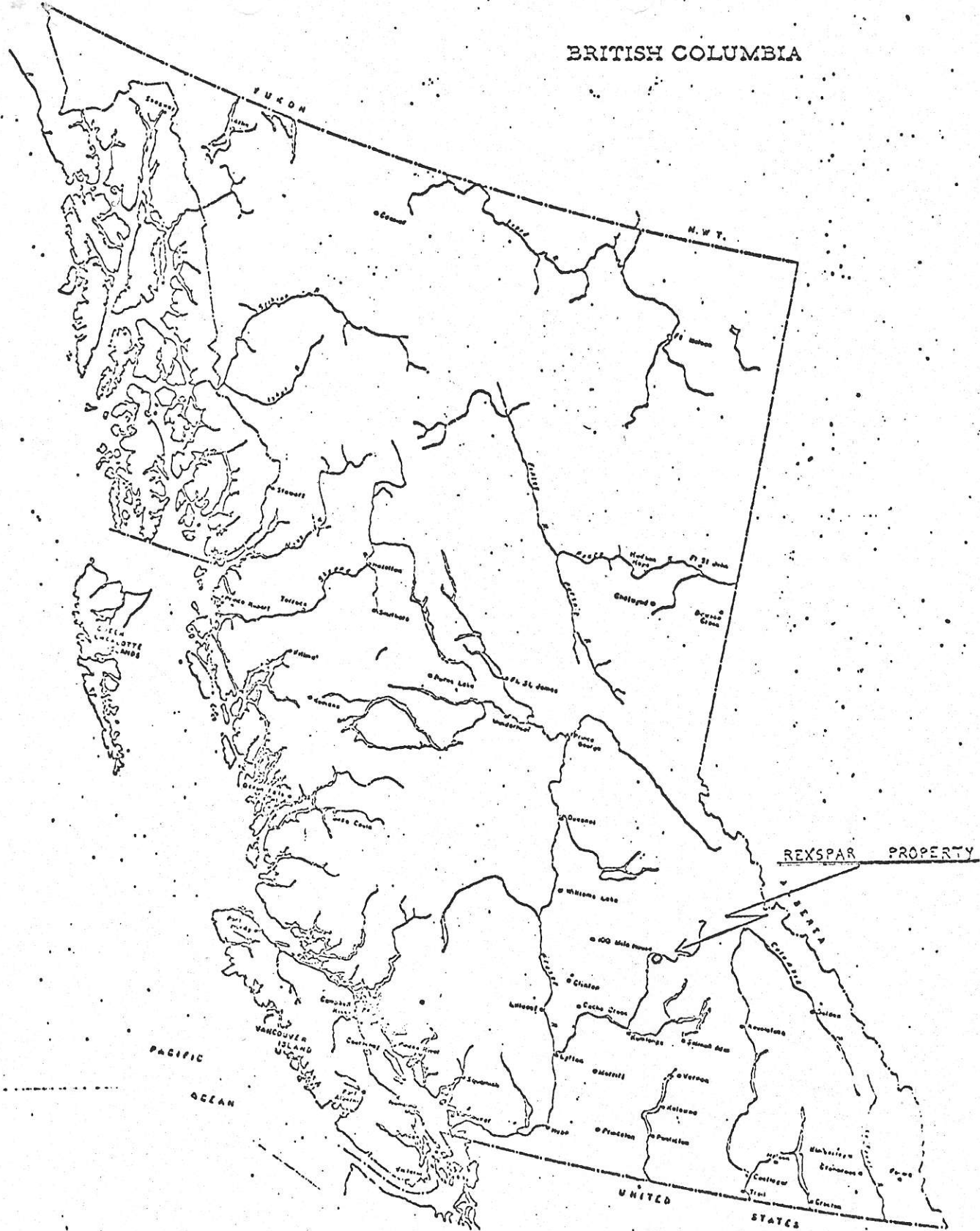
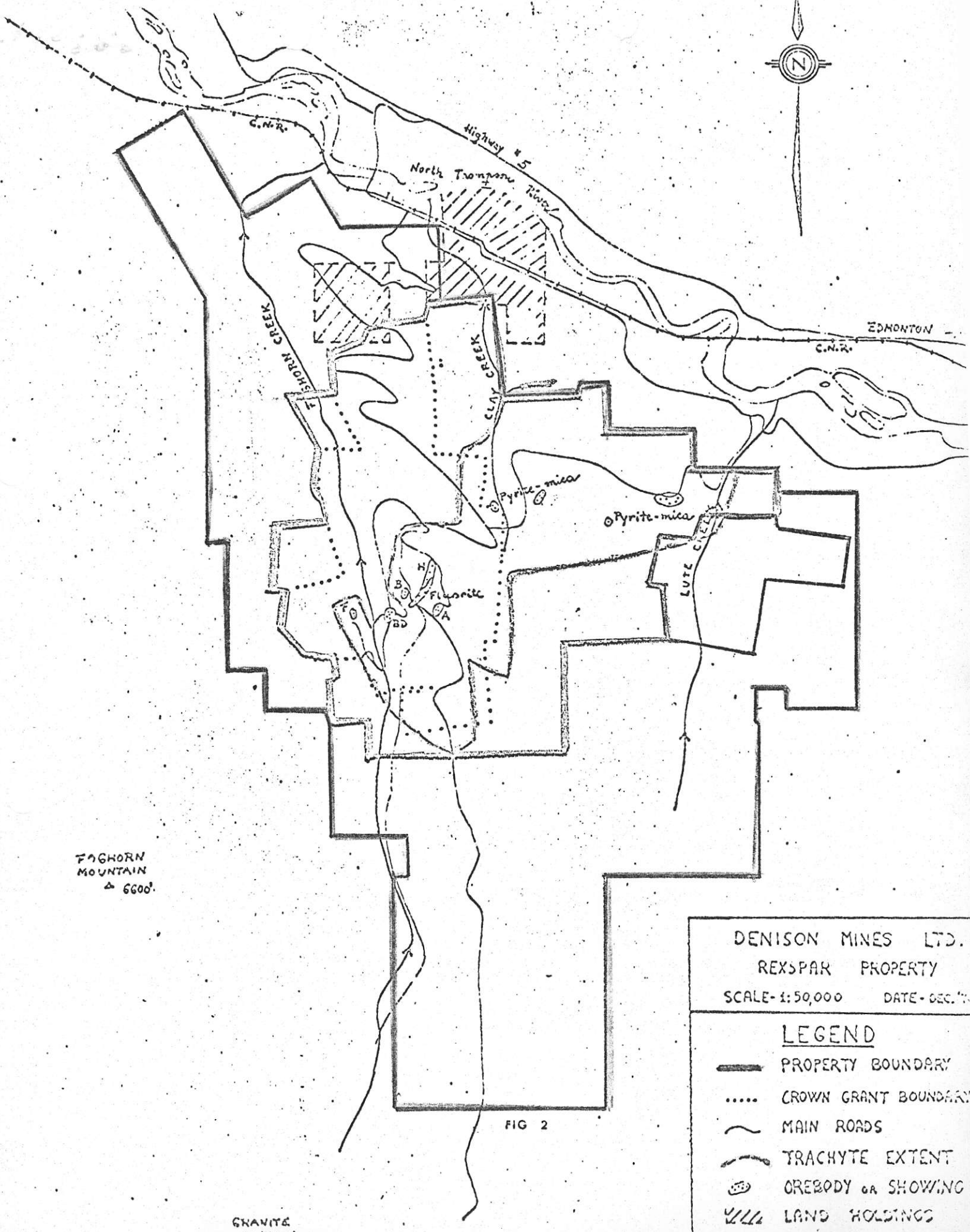


FIG. 1
LOCATION MAP

KERR ADDISON MINES LIMITED

REXSPAR PROPERTY

BIRCH ISLAND, B. C.









FOGHORN
MOUNTAIN
△ 6600'

GRAVITE
MOUNTAIN

FIG 2

DENISON MINES LTD.
REXSPAR PROPERTY
SCALE- 1:50,000 DATE- DEC. 1950

LEGEND

-  PROPERTY BOUNDARY
-  CROWN GRANT BOUNDARY
-  MAIN ROADS
-  TRACHYTE EXTENT
-  OREBODY OR SHOWING
-  LAND HOLDINGS