

MAR 19690016: LAKE ATHABASCA

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19690016

ECONOMIC MINERALS
FILE REPORT No.
U-AF-031(1)

GEOLOGY OF KING PERMIT NO. 69

LAKE ATHABASCA, ALBERTA

R. H. King

Calgary, Alberta

1969?

GALLUP EXPLORATION and SERVICES LTD.
43 WESTVIEW DRIVE S.W.
CALGARY, ALBERTA

GEOLOGY OF KING PERMIT NO. 69

LAKE ATHABASCA, ALBERTA

INTRODUCTION

Prospecting Permit No. 69 held by R.H. King of Calgary lies on and around Old Fort Point near the mouth of the Athabasca River on Lake Athabasca. It is shown in Fig. 1 the Fort Chipewyan Sheet 74L. It is readily accessible by air or water. In the latter instance, this includes the barge transportation from the end of steel which serves Lake Athabasca including Uranium City.

The terrain is a sandy, forested plain occupied by some muskeg. There are fine beaches along the lake. This is essentially a Uranium prospect.

GENERAL GEOLOGY

The areal geology of the Permit is shown on the Chipewyan Sheet Fig. 1. This map is a compilation of G.S.C. material and our own interpretations which are based on regional geomorphology and will be discussed further with reference to Fig. 2 an annotated photo-mosaic covering the permits.

The property lies at the west end of the Athabasca sandstone basin and appears to be in a graben¹ associated with the south west extension of the Black Bay fault.

1. Map 2 --1969 "A Seismic Reconnaissance Survey of the Athabasca Formation, Saskatchewan."

The Black Bay fault is down-thrown to the S. E., and up-thrown to the N. W. The up-thrown side is topographically low such as Black Bay and the S. W. offshore line of Lake Athabasca at Stone Point (Fig. 11), since it is a massive fault or fracture zone, once an ancient mountain belt, now an eroded fracture zone. As these mountains were eroded, conglomerates (Martin Formation) were deposited. These sediments contain uranium ore locally.

The period of uranium mineralization was during the Hudsonian (Late Precambrian) Orogeny, this was a time of normal faulting the development of the graben and horst relationship and the zones of intense fracturing such as at Black Bay.

During the Laramide orogeny, a period of compressive stresses and thrust faulting, there was reactivation, rejuvenation and consequent erosion and development of the ancestral Lake Athabasca topography.

Occurrence of uranium bearing minerals is not known to be directly associated with the few thrust faults.

If uranium is found in sediments of the Athabasca group and particularly the coarse Marten Lake fan conglomerates adjacent to one of the major normal faults, then it is likely that the underlying and/or adjacent older crystalline rocks will contain uranium.

Only Athabasca formation detritus occurs on the King properties. There is, however, evidence from the air photos of

considerable fracturing, Fig. 2. There are two sets of fractures approximately normal to one another as shown by the broken red lines. These lineations could quite probably reflect Hudsonian fractures rejuvenated by the Laramide.

There is a deep unexplained "hole" about the size of a large house in the S. E. quadrant of the Permit near the round lake in the same quadrant. This lake is unusually deep. Both these features are probably of tectonic origin, but may be directly due to solution along fractures.

Note that this tectonic graining all occurs well south of the projection of the Black Bay fault, the Recent lacustrine environment of Old Fort Point will mask any fault or fracture traces appearing there.

At Stone Point, 16 miles N. E. along the Black Bay fault trace, these are outcrops of Martin Lake formation.

CONCLUSIONS AND RECOMMENDATIONS

The land portion of the King Permits is covered with detrital Athabasca group sandstone modified by Recent lacustrine and fluvial environments. There remains, however, some evidence of a tectonic grain which is suggested to be related to the Black Bay fault. Note here that the S. W. portion of Lake Athabasca is actually the extension

of the eroded horst topography which is also Black Bay and the lowlands immediately N. E. of it, a major structural and geographic feature.

We suggest that sediments in the vicinity of Stone Point are systematically sampled and uranium content assays be run. Occurrence of uranium bearing minerals would suggest proximity of Black Bay fault.

The above program if uranium occurrence is shown would point to a drilling program into the crystalline rocks underlying the King property. Drilling depths to the crystalline rocks will be about 200'.

It may not be considered necessary to core the sandstones, careful sampling should be satisfactory for the preliminary work. However, cores should be taken into the crystalline rock and a scintillometer survey run over the entire section in each hole.

This work could be done in the late winter with a Failing "1500" drill brought in from Ft. McMurray. Cost would be in the order of \$5000 per hole including access.

The King property offers an opportunity to carry out uranium exploration in an interesting structural situation protected by the Permit, at very low cost.

The property comprises 8960 acres. It is now in its second year and in good standing. These permits require a deposit of \$1000

which is refundable upon performance to the satisfaction of the Department of Mines and Minerals.

The schedule of fees and deposits is as follows:

1st Year (a)	\$1000.00 deposit, refundable upon satisfactory performance
(b)	\$ 125.00 filing fee
2nd Year (a)	\$ 896.00 renewal fee @ .10¢ per acre
3rd Year	<u>\$1344.00</u> renewal fee @ .15¢ per acre
	\$3365.00

Mr. King has recovered his \$1000 deposit through performance - prospecting and mapping and paid the \$896.00 2nd year deposit. He is asking to have the first three years expenses taken over, a total of \$3365.00. There is now \$2240 (2nd and 3rd year) refundable. This would be in the order of the cost of a geochemical sampling survey which we recommend.

Mr. King also asks an interest or shares in any company formed to handle this.

Following the third year it will be possible to reduce the holding. Rentals for the next five years are .25¢ per acre per year and from there to the end the permit life which is 21 years can be carried at \$1.00 per acre per year. The Permit is renewable for succeeding 21 year terms at the discretion of the Department.

6.

Canadian uranium is looking forward to a long steady increase as an industry and accessible localities such as this may eventually become competitive.

Mr. R. H. King may be contacted at 112 - 11th Avenue S. E. Calgary, Alberta, telephone 265-8874.

Respectfully submitted,

A solid black rectangular box redacting the signature of W. B. Gallup.

W. B. Gallup

Lake Athabasca

Old Fort Point

Black Bay Fault Extrapolated

ANNOTATED PHOTO-MOSAIC

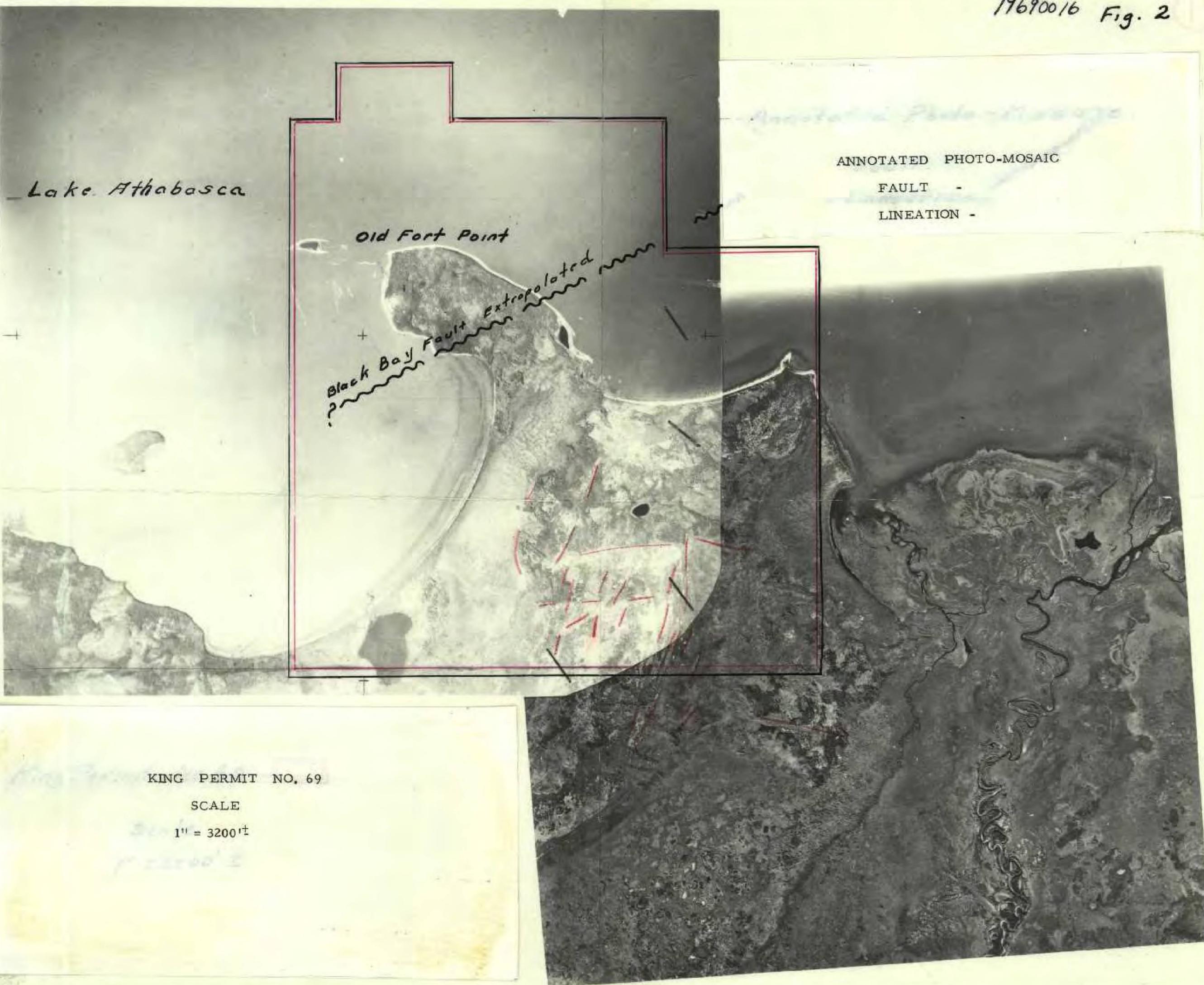
FAULT -

LINEATION -

KING PERMIT NO. 69

SCALE

1" = 3200'



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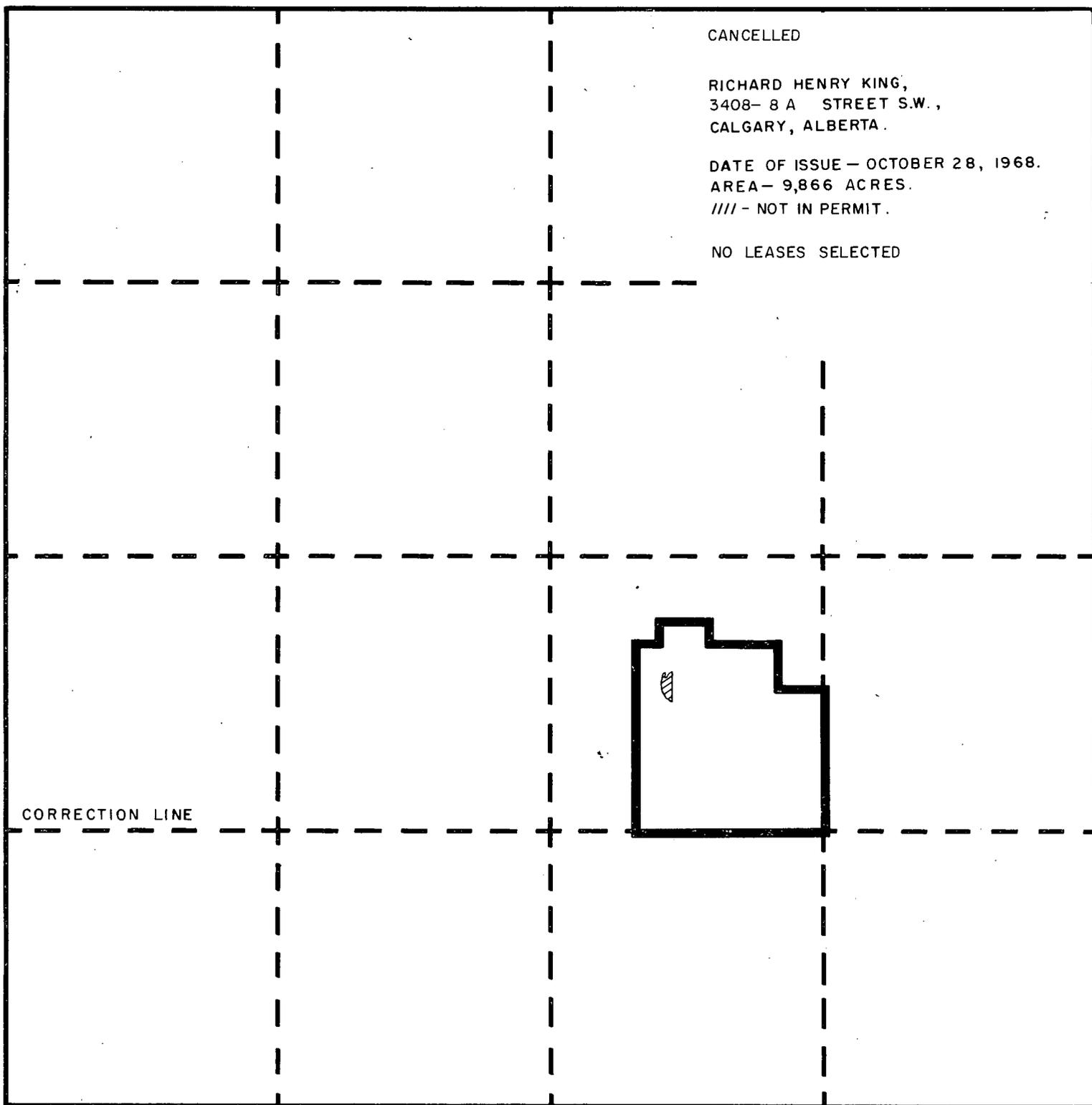
QUARTZ MINERAL EXPLORATION PERMIT No. 69

CANCELLED

RICHARD HENRY KING,
3408- 8 A STREET S.W.,
CALGARY, ALBERTA.

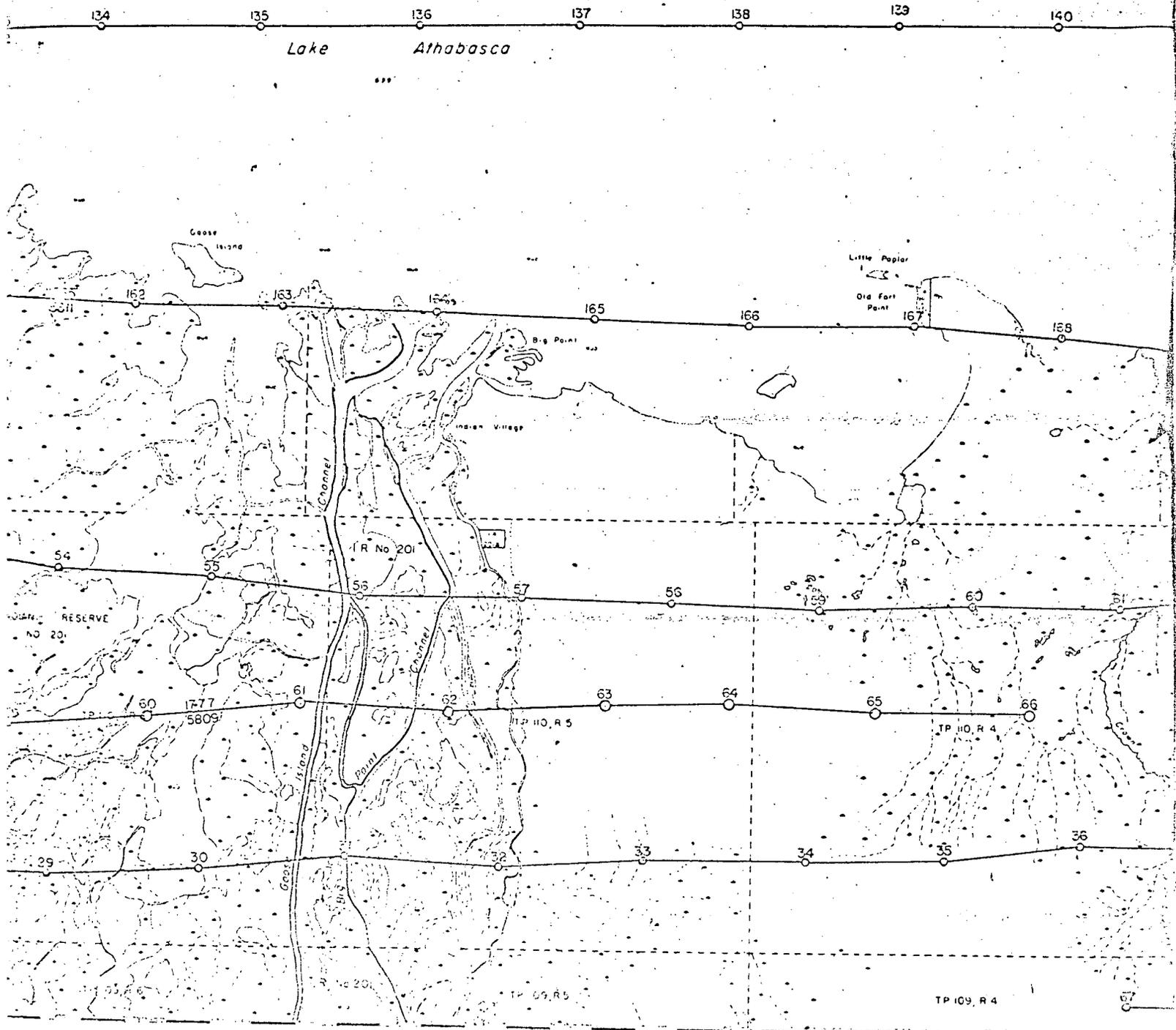
DATE OF ISSUE - OCTOBER 28, 1968.
AREA - 9,866 ACRES.
//// - NOT IN PERMIT.

NO LEASES SELECTED



R. 4

R. 3 W. 4 M.



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Figure 11?