

MAR 19710009: ANDREW LAKE

Received date: Dec 31, 1971

Public release date: Jan 01, 1973

DISCLAIMER

By accessing and using the Alberta Energy website to download or otherwise obtain a scanned mineral assessment report, you ("User") agree to be bound by the following terms and conditions:

- a) Each scanned mineral assessment report that is downloaded or otherwise obtained from Alberta Energy is provided "AS IS", with no warranties or representations of any kind whatsoever from Her Majesty the Queen in Right of Alberta, as represented by the Minister of Energy ("Minister"), expressed or implied, including, but not limited to, no warranties or other representations from the Minister, regarding the content, accuracy, reliability, use or results from the use of or the integrity, completeness, quality or legibility of each such scanned mineral assessment report;
- b) To the fullest extent permitted by applicable laws, the Minister hereby expressly disclaims, and is released from, liability and responsibility for all warranties and conditions, expressed or implied, in relation to each scanned mineral assessment report shown or displayed on the Alberta Energy website including but not limited to warranties as to the satisfactory quality of or the fitness of the scanned mineral assessment report for a particular purpose and warranties as to the non-infringement or other non-violation of the proprietary rights held by any third party in respect of the scanned mineral assessment report;
- c) To the fullest extent permitted by applicable law, the Minister, and the Minister's employees and agents, exclude and disclaim liability to the User for losses and damages of whatsoever nature and howsoever arising including, without limitation, any direct, indirect, special, consequential, punitive or incidental damages, loss of use, loss of data, loss caused by a virus, loss of income or profit, claims of third parties, even if Alberta Energy have been advised of the possibility of such damages or losses, arising out of or in connection with the use of the Alberta Energy website, including the accessing or downloading of the scanned mineral assessment report and the use for any purpose of the scanned mineral assessment report so downloaded or retrieved.
- d) User agrees to indemnify and hold harmless the Minister, and the Minister's employees and agents against and from any and all third party claims, losses, liabilities, demands, actions or proceedings related to the downloading, distribution, transmissions, storage, redistribution, reproduction or exploitation of each scanned mineral assessment report obtained by the User from Alberta Energy.

ECONOMIC MINERALS
FILE REPORT No.
U-AF-108(1)

REPORT OF WORK

*Confidential until
July 31, 1972*

QUARTZ MINERAL EXPLORATION PERMIT #158

HUDSON'S BAY OIL AND GAS COMPANY LIMITED

by: E. C. Burgan

September, 1971

— CONTENTS —

	<u>Page</u>
INTRODUCTION	1
PROPERTY	1
GEOLOGY	1
GEOPHYSICS	2
Gamma Scintillometric & Spectrometric Surveys	2
Field Procedure	2
Results & Conclusions	3
Instrumentation	3
Emanometry	3
Field Procedure	4
Results & Conclusions	4
Instrumentation	5
COSTS	5
CONCLUSIONS & RECOMMENDATIONS	5

— MAPS —

	<u>Description</u>	<u>Scale</u>
PLATE 1	Geological Plan	1" = 1/4 mi.
PLATE 2	Ground Radiometric Plan	1" = 1/4 mi.
PLATE 3	Emanometry	1" = 400'

INTRODUCTION

During June and part of July 1971, HBOG conducted reconnaissance radiometric and geological traverses over outcrop areas within the Permit. In addition, emanometric surveying was completed in a "sand-plain" area lying immediately south and southwest of the south end of Andrew Lake. A crew of six persons were utilized in this work, and field supervision was delegated to Mr. G. Ian Hall, a graduate geologist (B.Sc.).

PROPERTY

Quartz Mineral Exploration Permit #158 comprises approximately 7,840 acres situated in the NE corner of Alberta. Individual land parcels are listed in the Permit "Schedule" (Alberta Department File Reference No. 147332).

GEOLOGY

Where investigated the Permit area is largely underlain by leucocratic granite, foliated granite, granite gneiss and pegmatite. These rocks are compositionally very uniform and vary in most part only in texture and structure. Pegmatites are widespread but are generally small to very small in dimension, grading laterally into the granites. Granitic rocks grade indiscriminately from undeformed granite into sheared and foliated granites, into good banded granite gneiss. Very locally, small exposures of amphibolite or metasedimentary rock were noted (see Plate 1).

The Permit area was carefully mapped by J. D. Godfrey, and the reader is asked to refer to his comprehensive reports for more detailed geological descriptions of the rocks in the area (see Research Council of Alberta, Preliminary Reports No.'s 58-4 and 61-2).

GEOPHYSICS

Gamma Scintillometric & Spectrometric Surveys

The survey was conducted in reconnaissance fashion over outcropping areas of Quartz Mineral Permit #158 during June and July, 1971 (see Plate 2).

Field Procedure: The area was surveyed along compass lines in a predominantly E-W direction, as shown on the accompanying plan. Outcropping areas were checked thoroughly.

The " T^0 " (total count) intensity in counts per second were read continuously with periodic readings recorded. Values are plotted on Plate 2. Anomalies of more than a 3x background were checked for U:Th:K ratio by separately recording counts above 1.3, 1.6 and 2.5 MeV (T_1 , T_2 , T_3 readings respectively). Stability of the spectrometers and levels of discrimination T_1 , T_2 , T_3 were checked prior to and after each working day by reading at a base station and using a thorium standard. The survey was conducted by two spectrometers; " T^0 " readings of one of them, No. 569-11, were about 7x lower, but consistent during the whole survey. This was confirmed by daily background

check. As this was a result of a shift in lower energy threshold for " T^0 ", the higher energy T_1 , T_2 , T_3 readings were about the same for both instruments; anomaly to background ratio for " T^0 ", was the same for both instruments. Readings taken by different instruments are shown clearly on the accompanying plan.

Results & Conclusions: A total of 40.5 line miles were surveyed. Normal background (in terms of Instrument No. 569-01) vary from about 11,000 CPM to 20,000 CPM with higher values over pink granites. Several point anomalies more than 100,000 CPM, of U, U/Th and Th composition over a few square feet area were detected over pegmatitic facies. This is typical for the Andrew Lake region. No significant U-anomaly was found.

No readily detectable economic U-mineralization is likely to exist in the surveyed area.

Instrumentation: McPhar's gamma spectrometer TV-5, No. 569-11 and No. 569-01.

Sensitivity: Approximately 2 PPM equivalent U

Calibration: Using standard Th source

Emanometry

In order to search for possible economic U-mineralization in areas covered by beach sands to the north and NW of Carrot Lake radioactive zone, a highly sensitive and deep penetrating method, an emanometric survey,

was conducted over this area. The overburden in this region is believed to be generally less than 50 feet, comprised mostly of beach sands resting directly on the bedrock, and largely without any impermeable clayish sediments. In such favorable overburden conditions, this technique works "directly" up to about 50 feet, and considering secondary chemical dispersion, probably well in excess of 100 feet.

The survey was conducted by J. Panenka (geophysicist) and three helpers on June 27 & 28, 1971 (see Plate 3).

Field Procedure: The survey was conducted along 400-foot-spaced flagged lines from cut and picketed base lines running N-S. Readings were taken at 50-foot intervals. Soil gas samples were taken from hand-driven holes about 3 feet deep and 2/3 inches in diameter. Approximately 8 litres of air were pumped from each hole, and at every tenth station instrumental background was read using equal amounts of atmospheric air. Contamination exceeding 1 Eman was not tolerated. At each station "total" concentration of radioactive emanation, Radon²²² + Thoron²²⁰, was recorded. When "total" concentration exceeded approximately 2x background, a repeated reading was taken with a two minute delay, so as to separate, in time domain, Rn²²² from Tn²²⁰.

Results & Conclusions: A total of 895 stations were read, or 8.6 miles of profiles. Background values varied from 4-15 Emans, predominantly (>60%) of Th²²⁰ composition; this value is quite typical of shallow sandy

sediments. Occasional higher values up to 26 Emans proved to be of mostly Tn²²⁰ (> 60%). No Rn²²² anomalies were detected.

Interpretation of the survey results indicate that there is no evidence of U-mineralization in the surveyed area.

Instrumentation:

Emanometer: Scintrex ETR-1

Sensitivity - 1 Eman or approx. 0.1 PPM of U
in Equilibrium

Calibration - Done by Scintrex Ltd. 3 days prior
to the survey

Personnel: Operator J. Panenka (geophysicist) and 3 helpers

COSTS

The field program was aircraft supported, and a tent camp-site was situated at the S end of Andrew Lake. No major billings are thought to be outstanding at this time, and the total cost of this season's work as of the end of July is \$14,498 (including all salaries, transportation, aircraft and camp maintenance).

CONCLUSIONS & RECOMMENDATIONS

The radiometric, emanometric and geological surveys conducted on Permit #158 during the 1971 field season did not delineate any area worthy

of further exploration. Some local radiometric "highs" were determined to be local in extent and resultant of minor increases in Th and U as basic rock forming minerals in granites or pegmatites.

In the light of present information, additional work cannot be recommended.

Signed:

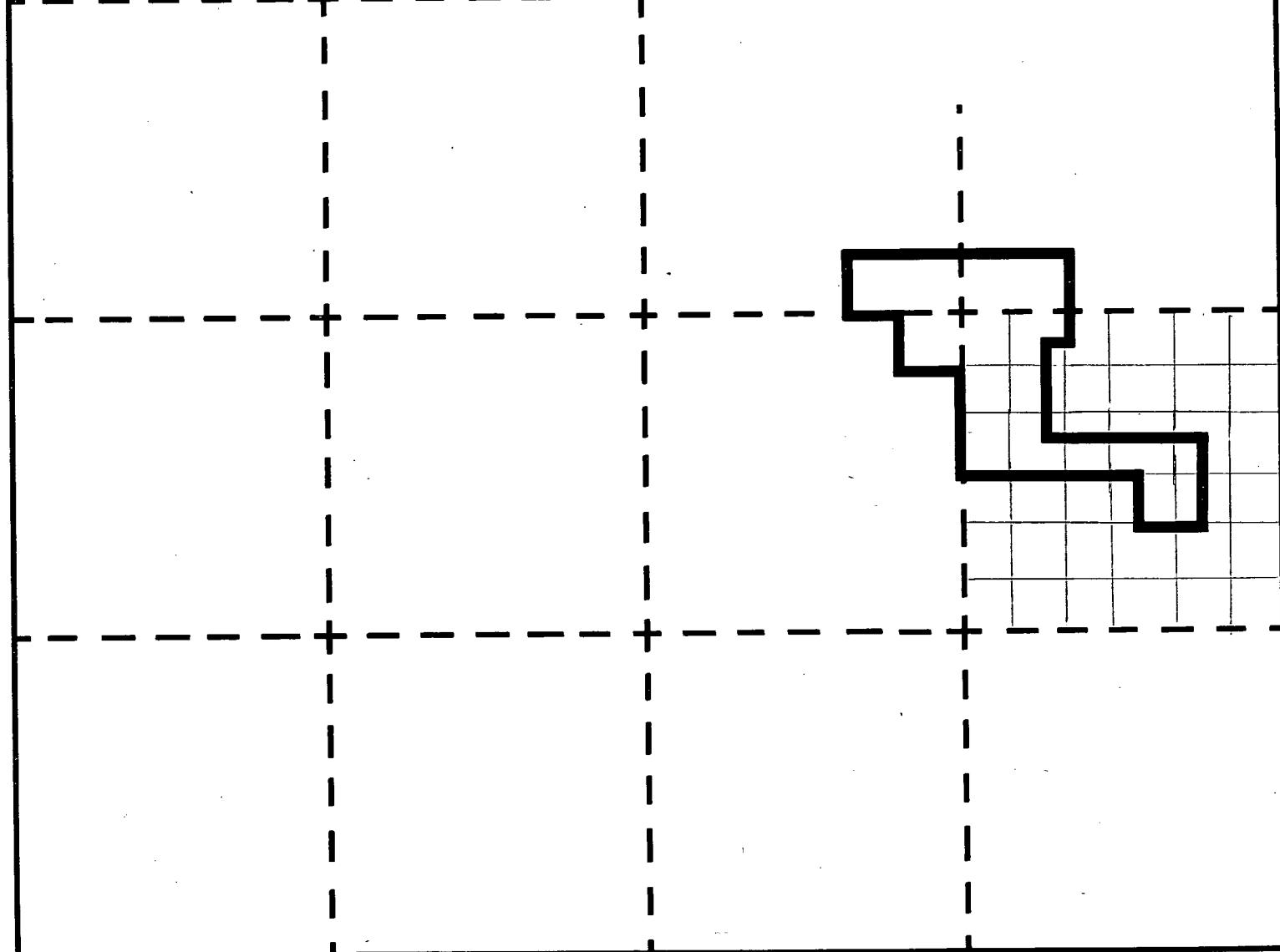
E. C. Burgan
Prof. Eng. B.C.

QUARTZ MINERAL EXPLORATION PERMIT No. 158

(74M/16)

HUDSON'S BAY OIL & GAS COMPANY LIMITED,
320-7th AVENUE S.W.,
CALGARY 2, ALBERTA

DATE OF ISSUE - JULY 31, 1970
AREA - 7,840 ACRES



R. 2

R. 1 W. 4 M.

QUARTZ MINERAL EXPLORATION PERMIT No. 158

CANCELLED

HUDSON'S BAY OIL & GAS COMPANY LIMITED,
320-7th AVENUE S.W.,
CALGARY 2, ALBERTA

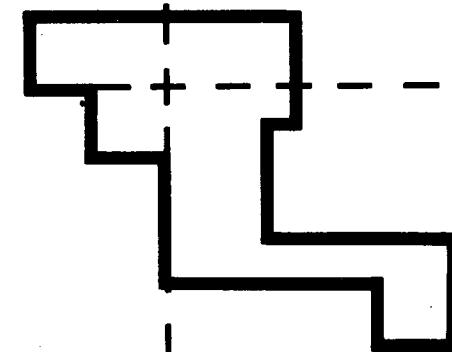
DATE OF ISSUE - JULY 31, 1970
AREA - 7,840 ACRES

NO LEASES SELECTED


TP. 125

TP. 124

TP. 123



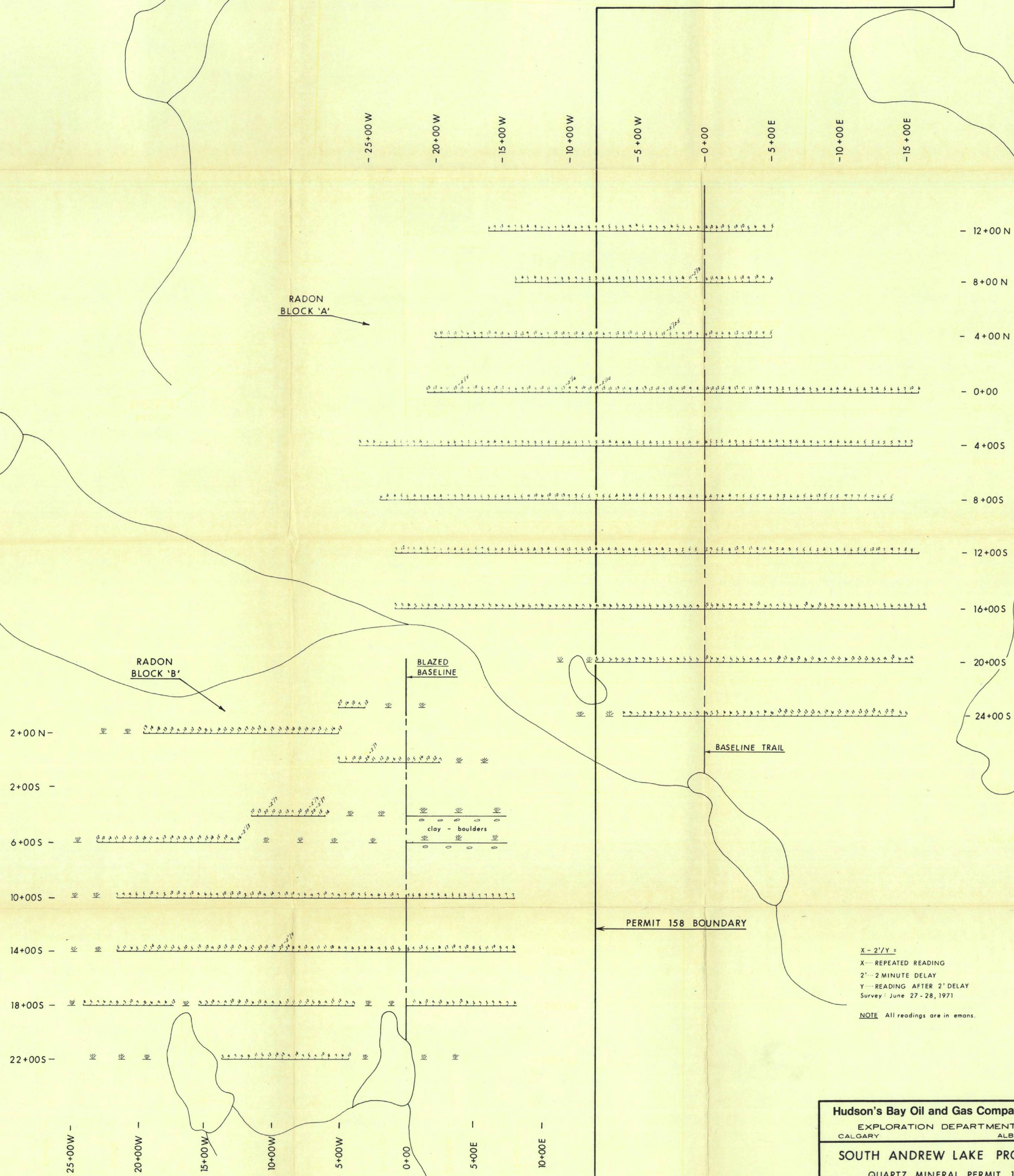




Hudson's Bay Oil and Gas Company Limited
EXPLORATION DEPARTMENT
CALGARY
ALBERTA
SOUTH ANDREW LAKE PROJECT
QUARTZ MINERAL PERMIT - 158
GEOLOGICAL PLAN

SCALE: 1" = $\frac{1}{4}$ Mile AUTHOR: D. MOULÉ DATE: AUG. 1971
FILE No.: NTS 74M-10
PLATE I.
1971009

ANDREW LAKE



Hudson's Bay Oil and Gas Company Limited
EXPLORATION DEPARTMENT
CALGARY ALBERTA

SOUTH ANDREW LAKE PROJECT
QUARTZ MINERAL PERMIT 158
EMANOMETRY
BLOCKS 'A' & 'B'

SCALE: 1"=400 Ft.	AUTHOR: J. PANENKA	DATE: JULY, 1971
FILE No.: NTS 74-M-16		