

2306

REPORT ON
AEROMAGNETIC SURVEY
TROUT LAKE AREA, BRITISH COLUMBIA
ON BEHALF OF
ALICE LAKE MINES LIMITED

by

Richard O. Crosby, B.Sc., P.Eng.

March 10, 1970

CLAIMS:

<u>Name</u>	<u>Record Numbers</u>
RAINY	13849
RAINY 2 - 8 (inclusive)	13850 - 13856
RAINIE EX 5-8 (inclusive)	28901 - 28904
BLUE OX	13857
BLUE OX 2 - 8 (inclusive)	13858 - 13864
COSTA 1 - 28 (inclusive)	28054 - 28081

LOCATION:

About 35 miles southwest of Port Hardy, B. C.
Nanaimo Mining Division
127° 50° SE

DATES:

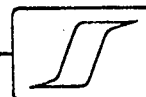
January 30 to February 3, 1970

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. 2306 MAP

TABLE OF CONTENTS

	<u>Page No.</u>
SUMMARY	
INTRODUCTION	1
PRESENTATION OF DATA	2
DISCUSSION OF RESULTS	2
CONCLUSIONS AND RECOMMENDATIONS	3
APPENDIX "A"	
PLATES:	
(in text)	
#1 Plate 1 -- Property Location Map	1" = 4 miles
#2 Plate 2 -- Claim Location Map	1" = 1 mile
(in envelope)	
#3 Plate 3 -- Magnetic Contour Map	1" = 1/4 mile



SUMMARY

An aeromagnetic survey has revealed an area which is interpreted as an altered intrusive. Follow-up geochemical and induced polarization surveys have been recommended.



REPORT ON
AEROMAGNETIC SURVEY
TROUT LAKE AREA, BRITISH COLUMBIA
ON BEHALF OF
ALICE LAKE MINES LIMITED

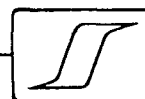
INTRODUCTION

During the period January 30 through February 3, 1970, an aeromagnetic survey was flown over an area centred approximately 35 miles southwest of Port Hardy, British Columbia.

The area measures 12 square miles. Survey traverses were flown northeast-southwest at an interval of 1/8 miles and at a mean terrain clearance of about 300 feet. Magnetic control lines were flown at the eastern and western limits of the survey area to level the magnetic data. A total of 30 line miles of survey were flown. In addition to the survey grid three reconnaissance profiles were flown southwards from Benson Lake over Cominco's Coast Copper Mine.

A Scintrex NPM-1 total intensity nuclear precession magnetometer was employed on this survey. It was towed on a cable extending approximately 65 feet below a Hiller SL-4 helicopter. A 16 mm. camera was employed for positioning purposes and a radar altimeter was used to monitor terrain clearance. Flight path recovery was achieved through the use of the 16 mm. film strip and the photomosaic of the area at a scale of 1:15840.

The purpose of the survey was to obtain information relating to the distribution of the acidic intrusive bodies, ultra basic bodies, contact alteration zones containing magnetite, altered intrusive areas and geologic structure. Mineralization in the



vicinity of the survey area consists of producing copper and iron mines 4 miles to the north.

PRESENTATION OF DATA

The magnetic data are shown on one map sheet at a scale of 1:15,840. Magnetic data are contoured at an interval of 20 gammas. No corrections have been made for regional magnetic variation. The total magnetic field in the survey area is approximately 57,200 gammas and the inclination of the earth's total magnetic field is approximately 71 degrees.

DISCUSSION OF RESULTS

The magnetic field in the survey area is mainly a gradient increasing in a westerly direction from a minimum of 1300 gammas to a maximum of 1800 gammas in the extreme northwest corner of the area. A series of minor anomalies appearing as "nosings" along alternate flight lines were mapped in the centre of the grid between flight lines 6 W and 12 W. The small magnetic features are probably due to the effects of the extreme topography in the area rather than to magnetic susceptibility contrasts within the underlying rocks.

A 60 gamma magnetic depression was recorded midway along flight lines 3, 4, and 5. This depression could indicate an alteration zone within a relatively basic intrusive and therefore warrants field checking.

The reconnaissance lines flown south from Benson Lake over the Coast Copper Mine indicate a maximum relief of 1700 gammas.



CONCLUSIONS AND RECOMMENDATIONS

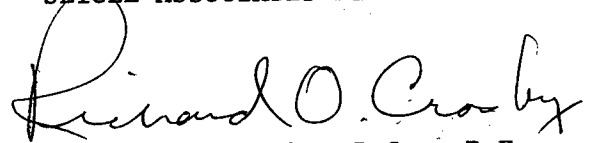
The airborne magnetometer has revealed an area which is interpreted as an altered intrusive.

It is recommended that lines be cut at 500 foot intervals on an east-west heading in the area of the interpreted altered zone and that a geochemical survey and an induced polarization survey be completed over this grid.

It is also recommended that the entire area covered by the aeromagnetic survey be field checked and geologically mapped.

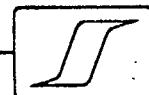
Respectfully submitted,

SEIGEL ASSOCIATES LIMITED



Richard O. Crosby, B.Sc., P.Eng.
Geophysicist.

Vancouver, B. C.
March 10, 1970



MAGNETOMETER - SCINTREX NPM-1

The Scintrex NPM-1 nuclear resonance airborne magnetometer is based on a Newmont modification of a Varian Associates magnetometer and is produced under license to both companies. It is a very light weight, solid state unit, especially designed for use in a helicopter or light fixed-wing aircraft where weight is an important consideration.

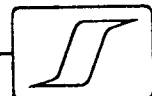
Its cycle period is 1.1 seconds. Each cycle it measures the total intensity of the earth's magnetic field and this quantity, in gammas, is recorded, in analogue form, on a suitable graphic recorder. The full scale sensitivity is usually 1000 gammas and the recorder automatically steps each 500 gammas. In very active areas a full scale sensitivity of 5000 gammas with steps of 2,500 gammas may be employed. Only the magnetic variations are actually recorded although the absolute base level may be established from the NPM-1 as well.

The magnetic sensing head may be on a cable as much as 100 ft. below the aircraft or, in some installations, may be rigidly attached to the aircraft on a suitable boom.

The intrinsic noise level of each reading is about 5 gammas.

Where it is intended to contour the NPM-1 information it is customary to fly tie lines across the survey grid. A fixed magnetic field monitor is often used as well, on the ground, primarily to indicate periods of magnetic storms during which the aeromagnetic data should be considered as unreliable.

The aeromagnetic data may be contoured if desired, using a contour interval of 25 gammas or up, depending on the amount of magnetic relief. Alternatively they may be used simply for purposes of correlation with simultaneously obtained electromagnetic data to determine which conductor zones are appreciably magnetic.



ANCILLARY EQUIPMENT

1. Altimeter

A Bonzer, high frequency solid state radioaltimeter is employed to continuously indicate the mean terrain clearance of the helicopter or other transporting aircraft. The altimeter is installed in the aircraft (unless otherwise indicated) so that the elevation of the sensing birds (electromagnetic or magnetic) will be less by the usual vertical displacement of these birds below the aircraft.

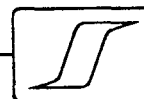
The output of the Bonzer may be expressed in analogue form on a suitable graphic recorder, or may be, for convenience, converted to a semi-digital form on a recorder side pen. In the latter event the altimeter record is a series of spaced pulses whose separation is proportional to the mean terrain clearance.

2. Positioning Camera

A Vinten Mark 3 16 mm positioning camera is employed with a wide angle lens. Photographs of the ground are taken with sufficient frequency to give a complete record of the flight path of the aircraft or helicopter. The frequency of exposure is controlled by the intervalometer referred to below.

3. Intervalometer

A Scintrex IA-2 intervalometer provides regularly spaced timing pulses which drive the positioning camera exposure mechanism and produces synchronous "fiducial marks" on the side pen of the geophysical graphic recorder or recorders. Because of the synchronization of the geophysical traces and the positioning camera it is then possible to relate the geophysical events of interest to their proper ground location. The timing pulse frequency may be adjusted in accordance with the ground speed of the aircraft so that an adequate flight path record is obtained.



DOMINION OF CANADA:

PROVINCE OF BRITISH COLUMBIA.

To Wit:

In the Matter of a geophysical survey on behalf of Alice Lake Mines Limited

I, E. M. Flett for Seigel Associates Limited

of 750 - 890 West Pender Street, Vancouver

in the Province of British Columbia, do solemnly declare that an aeromagnetic survey has been executed on claims about 35 miles southwest of Port Hardy, B.C. 127° 50° SE between January 30 to February 3, 1970. The following expenses were incurred:

(1) Wages:			
	Carl Mohagen	5 days @ \$35.00/day	\$ 175.00
	Dave Phillips	5 days @ \$35.00/day	<u>175.00</u> \$ 350.00
(2) Transportation & Shipping to the job			1,490.00
(3) Transportation on the job (helicopter 6 hours, 15 minutes @ \$175./hour)			1,093.75
(4) Food & Living & Miscellaneous expenses			114.06
(5) Use of Geophysical Equipment 2 days @ \$175/day			350.00
(6) Compilation & reporting 182 line miles flown @ \$15.00/mile			<u>2,730.00</u>
			\$6,127.81

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the City

of Vancouver

, in the

Province of British Columbia, this 30th 31st

day of ~~April~~ ^{May}, 1970

, A.D.

EM Flett

Jill Jensen

A Commissioner for taking Affidavits within British Columbia or
A Notary Public in and for the Province of British Columbia.

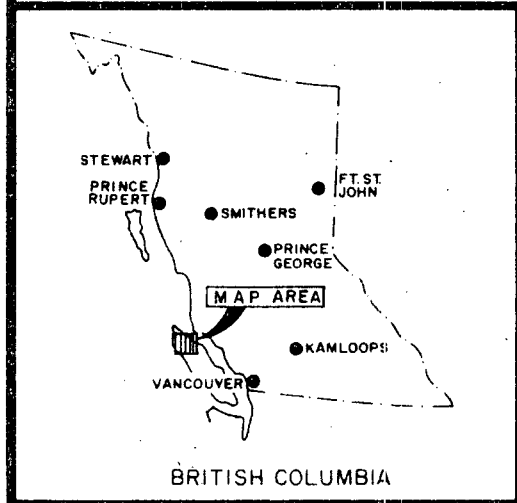
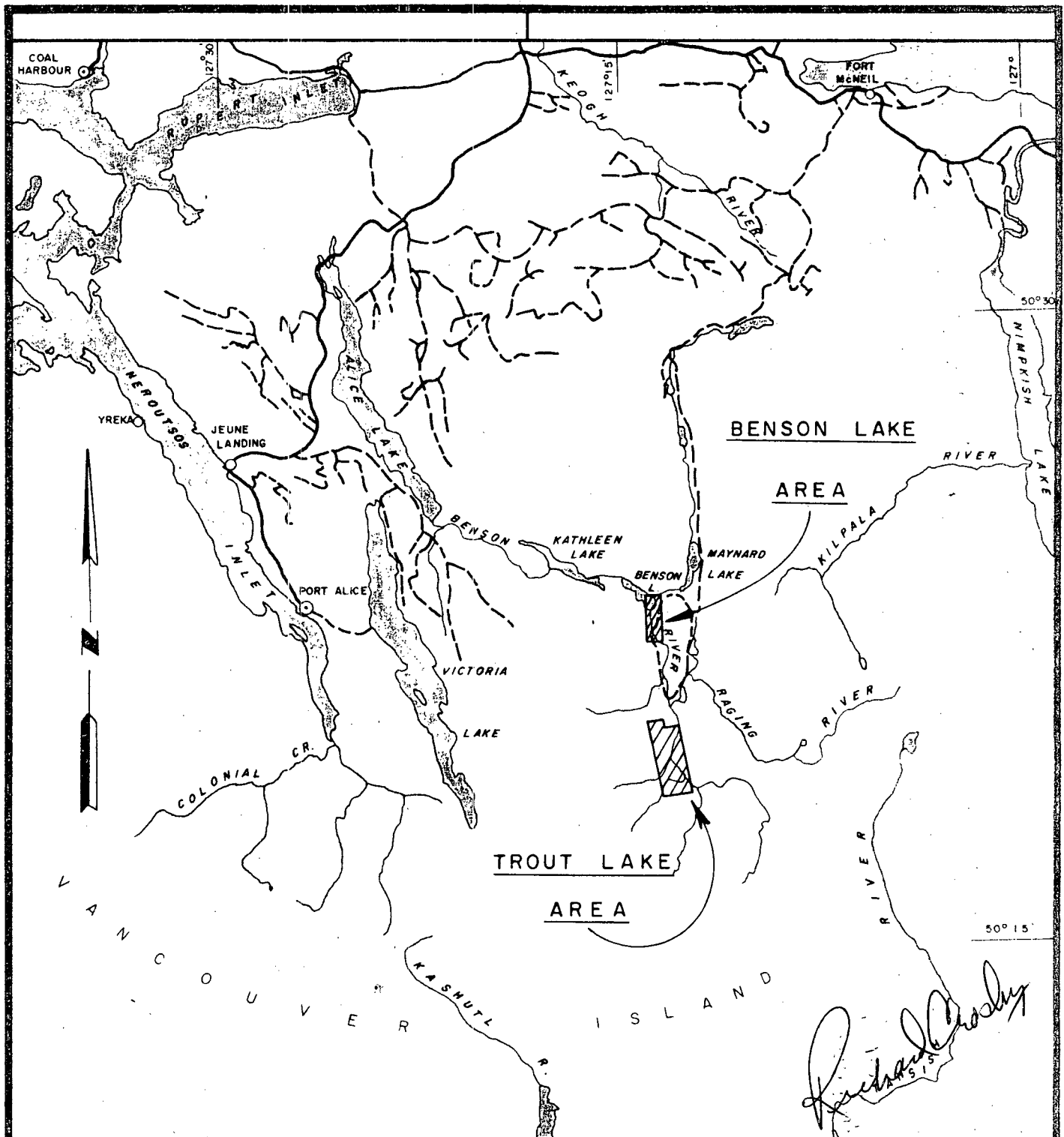
Sub-Mining Recorder

In the Matter of

Statutory Declaration

(CANADA EVIDENCE ACT)

LLC



ALICE LAKE MINES

LOCATION MAP

AIRBORNE GEOPHYSICAL SURVEY

ALICE LAKE AREA, VANCOUVER ISLAND B.C.

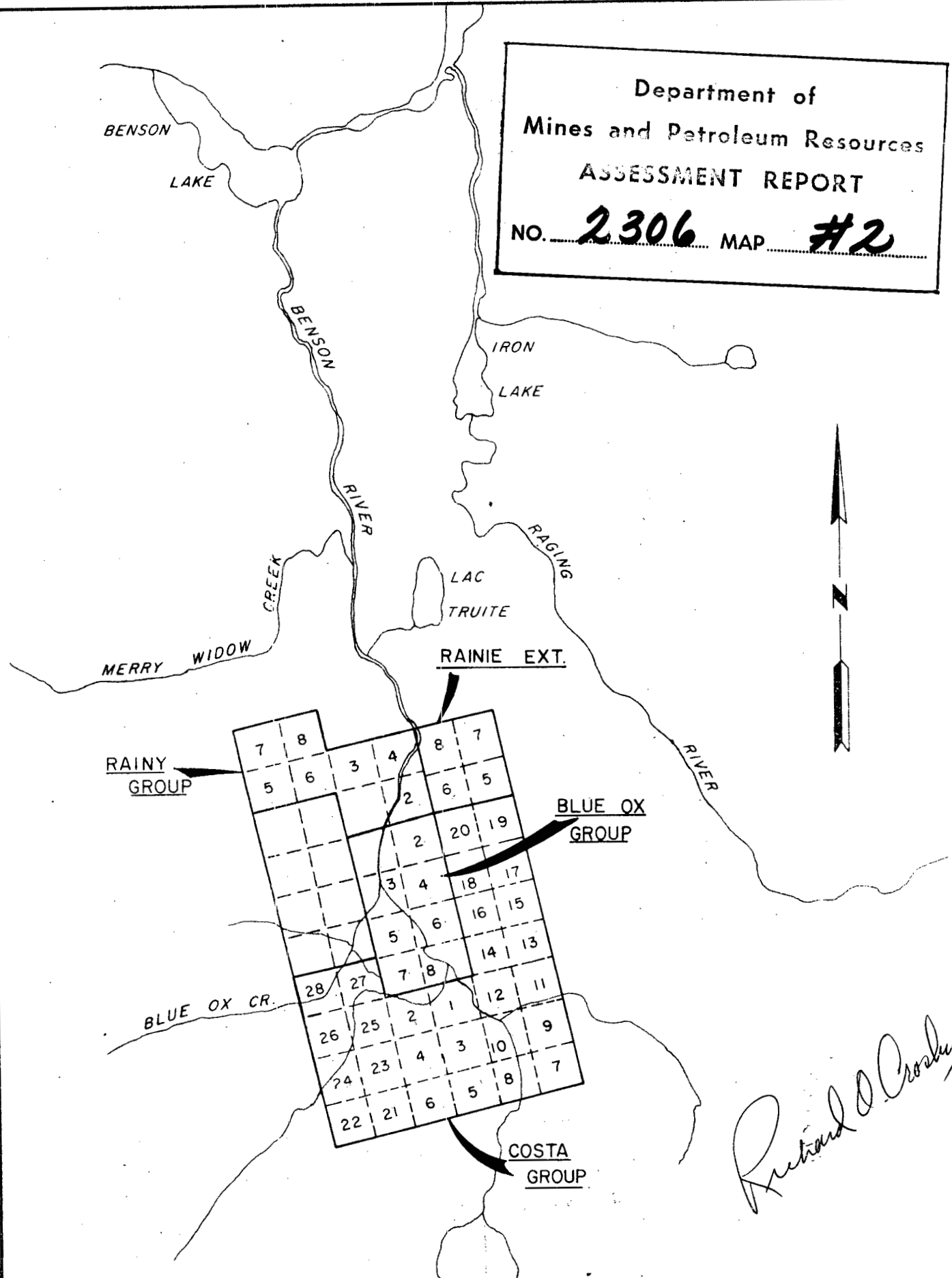
SCALE IN MILES

SURVEY BY SEIGEL ASSOCIATES LIMITED FEBRUARY 1970	PLATE I
--	----------------

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

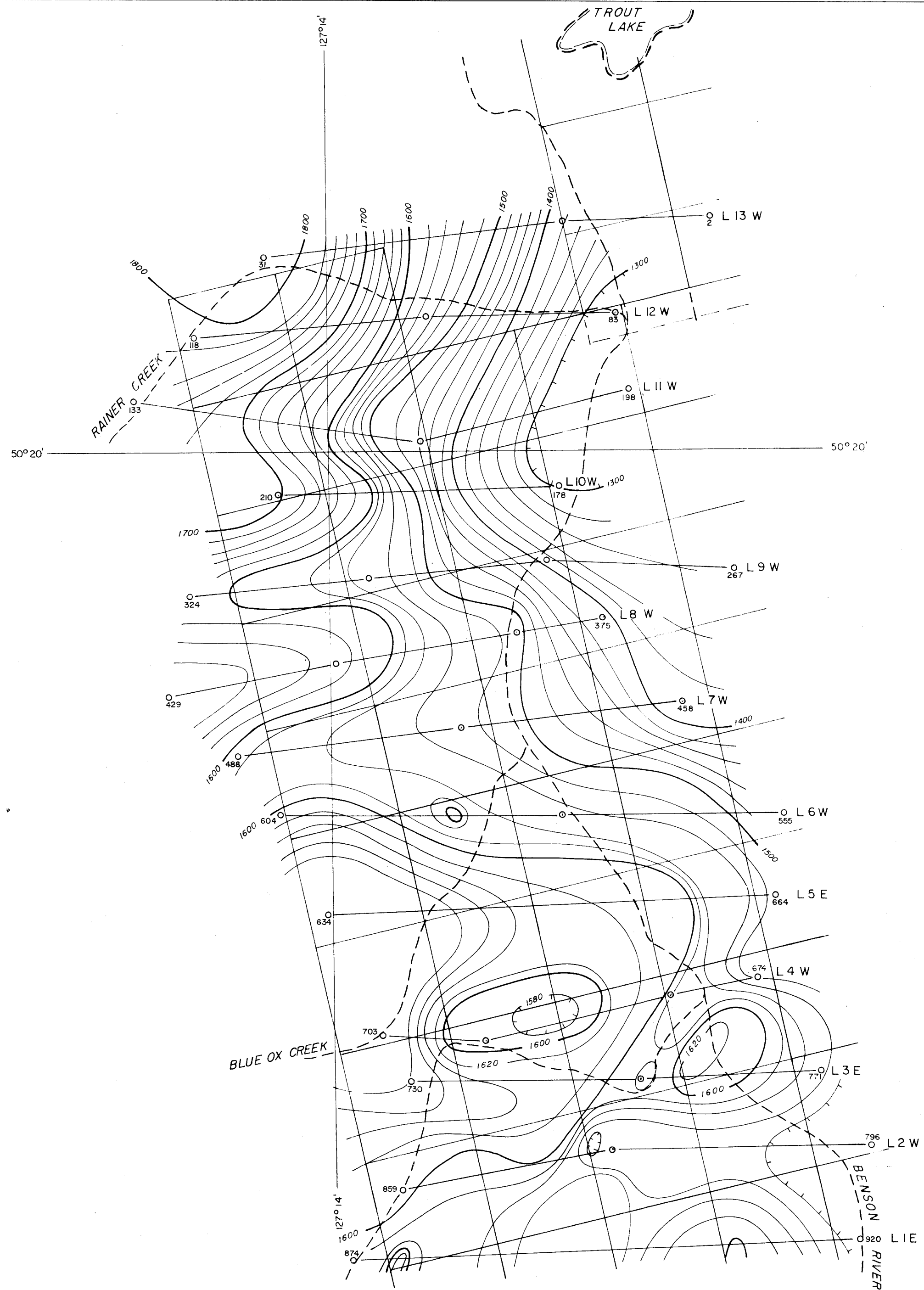
NO. **2306** MAP **#1**

Department of
 Mines and Petroleum Resources
 ASSESSMENT REPORT
 NO. **2306** MAP **#2**

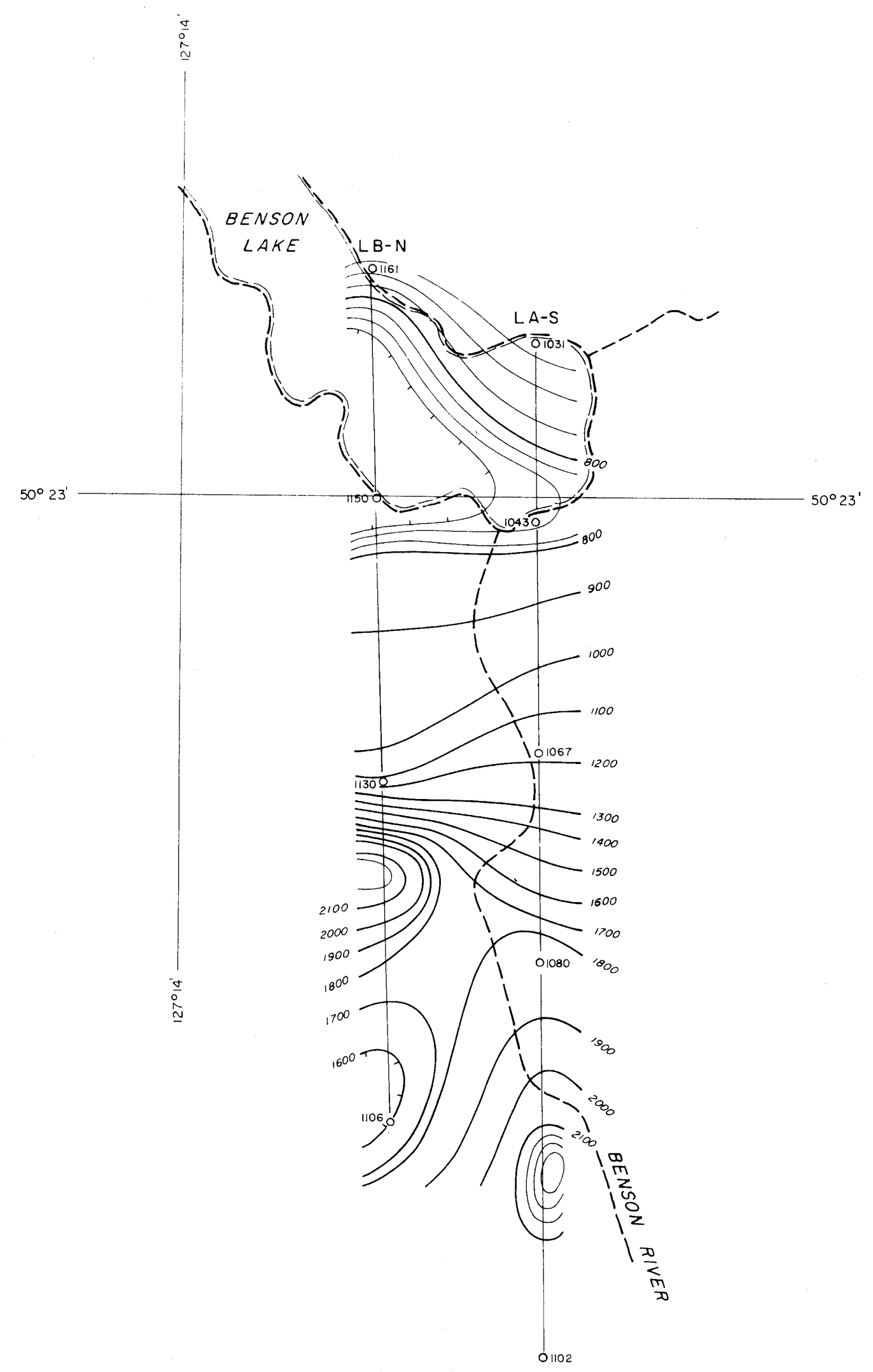


Richard O. Crosby

CLAIM LOCATION MAP	ALICE LAKE MINES	TROUT LAKE AREA
1" = 1 MILE, APPROX.	FEBRUARY 1970	PLATE 2

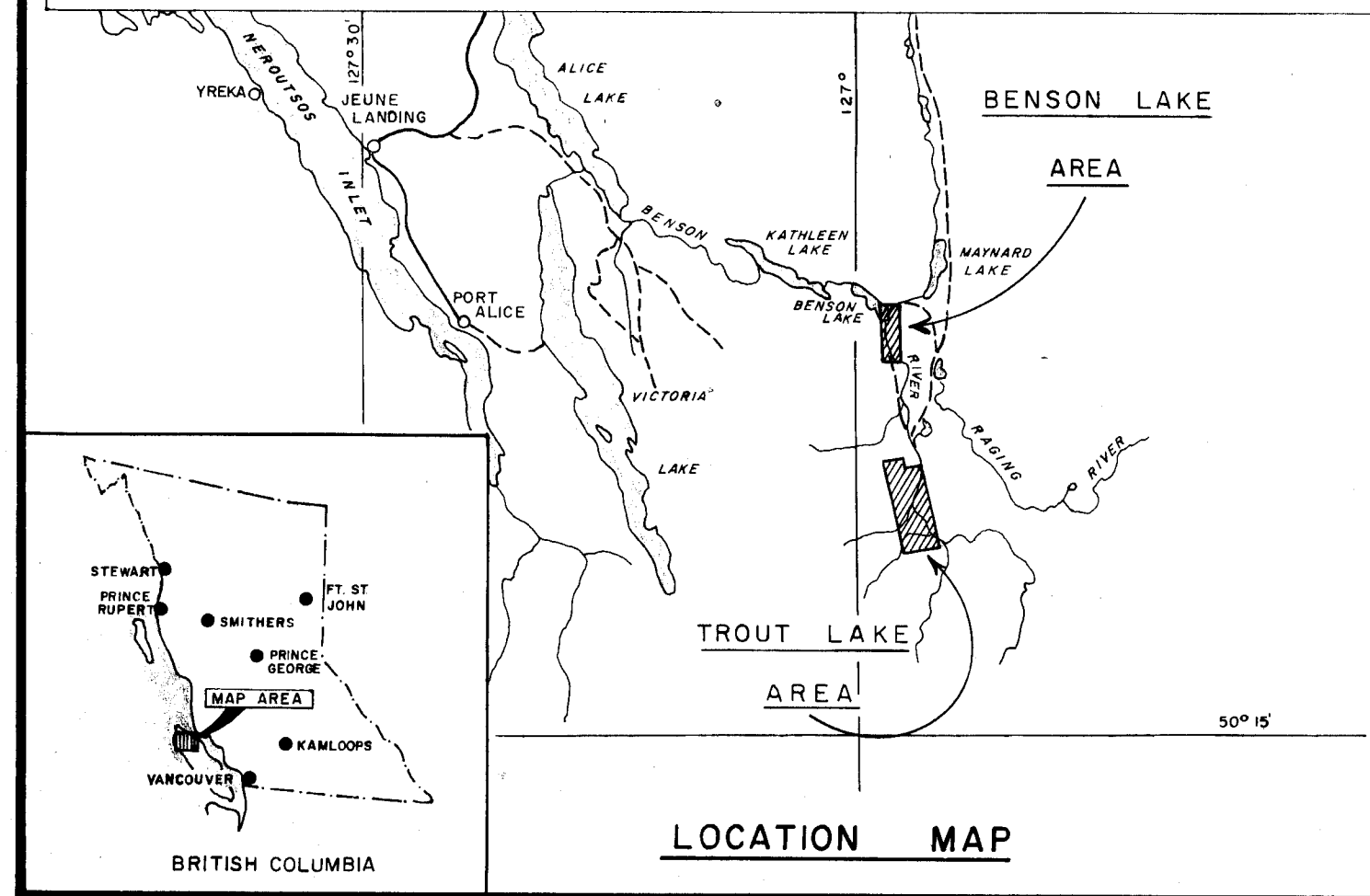


TROUT LAKE



BENSON LAKE

2306



LOCATION MAP

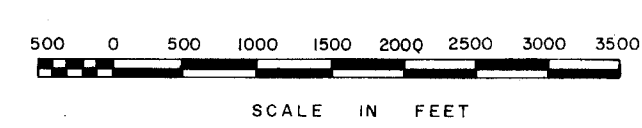
LEGEND

- L7 1307 ——— FLIGHT LINE, FLIGHT LINE NUMBER AND NUMBERED FIDUCIAL POINT
- 100— 100 GAMMA ISOMAGNETIC CONTOUR INTERVAL
- 20— 20 GAMMA ISOMAGNETIC CONTOUR INTERVAL
- — — MAGNETIC LOW
- — — BASE VALUE ARBITRARY

Department of
Mines and Petroleum Resources
 ASSESSMENT REPORT
 NO. **2306** MAP **#3**

PLATE 3
ALICE LAKE MINES
 ALICE LAKE AREA, VANCOUVER ISLAND, B.C.
AIRBORNE GEOPHYSICAL SURVEY
 MAGNETOMETER CONTOUR PLAN

SCALE: 1" = 1320'
 SURVEY BY SEIGEL ASSOCIATES LIMITED
 FLOWN AND COMPILED
 FEBRUARY, 1970



Richard O. Crook