

**CASSIAR ASBESTOS CORPORATION LIMITED**

PLEASE ADDRESS ALL CORRESPONDENCE  
TO THE COMPANY  
CASSIAR, B. C.

PHONE  
CASSIAR 7435

2168

**GEOPHYSICAL REPORT**

on

MINERAL CLAIMS CAC 1-14

CASSIAR, B. C. 59<sup>0</sup>, 129<sup>0</sup> SW

RECORD NOS. 34458-71

owned by

CASSIAR ASBESTOS CORPORATION LIMITED  
TENTH FLOOR, 85 RICHMOND STREET WEST  
TORONTO 110, ONTARIO

by

JAN KLEIN, M.Sc., P. ENG.  
SIEGEL ASSOCIATES LIMITED  
79 MARTIN ROSS AVENUE  
DOWNSVIEW, ONTARIO

NOVEMBER 1968 to MARCH 1969

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT

NO. 2168 MAP .....

REPORT ON  
AIRBORNE MAGNETIC SURVEYS  
CASSIAR AREA, BRITISH COLUMBIA  
ON BEHALF OF  
CASSIAR ASBESTOS CORPORATION LIMITED

by

Jan Klein, M.Sc., P. Eng.

Our Ref. 69-128-01

Toronto, Ontario.

January 20th, 1969.

Map #1 - Mag. Contour Plan (Nov. 1968 - Jan. 1969) - Rear.  
Map #2 - Mag. Contour Plan (March 1969) - Rear

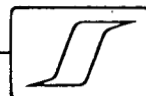
REPORT ON AIRBORNE MAGNETIC SURVEYS  
CASSIAR AREA, BRITISH COLUMBIA  
ON BEHALF OF  
CASSIAR ASBESTOS CORPORATION LIMITED

INTRODUCTION

During the latter part of November 1968 airborne magnetometer surveys were undertaken by Seigel Associates Limited over an area near Mount McDame, Cassiar, British Columbia, on behalf of Cassiar Asbestos Corporation Limited.

The area is centred approximately  $59^{\circ}10'N - 129^{\circ}50'W$  near the townsite of Cassiar. The area measures approximately two miles by four miles. The traverses were flown at approximately 1000 ft. intervals, oriented east-west in the southern and northern parts of the grid. In the centre of the grid, where the topography is extremely rough with over 2000 ft. of relief, the traverses were oriented northwest-southeast, parallel to the topography. Two test lines were flown over the mine site. The 29 traverses have a total length of approximately fifty miles. Due to loss of information, only the results of approximately 32 line miles could be contoured. Flight navigation and flight path recovery have been based upon photomosaics on the scale of  $1'' \approx 1320$  ft.

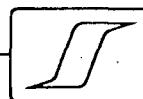
The magnetic data obtained during these surveys provide basic information regarding the lithology and structure of the underlying formations in the areas.



## SURVEY EQUIPMENT, PROCEDURES AND STATISTICS

A Scintrex NPM-1 nuclear resonance airborne magnetometer was used during the surveys. This magnetometer is based on a Newmont modification of a Varian Associates magnetometer and is produced under licence to both companies. It is a very light weight, solid-state unit, specially designed for use in a helicopter or light fixed-wing aircraft where weight is an important consideration. Its cycle period is 1.1 seconds. On 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 dual channel Texas Instruments recorder. The full scale sensitivity is 1,000 gammas and the recorder automatically steps each 500 gammas. 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 was on a cable approximately 100 ft. below the aircraft. The intrinsic noise level of each reading is about 5 gammas.

Photographs of the ground are taken with a Vinten Mark 3 16 mm positioning camera, with sufficient frequency to give a complete record of the flight path of the helicopter. The frequency of exposure is controlled by a Scintrex IA-2 intervalometer. This intervalometer provides regularly spaced timing pulses which drive the positioning camera exposure mechanism and produces synchronous "fiducial marks" on the side pen of the recorder. Because of the synchronization of the geophysical traces and the positioning camera it was possible to relate the geophysical events of



interest to their proper ground location.

The airborne magnetometer was installed together with the camera and altimeter (whose output was also recorded with the same recorder in analogue form) in a Bell 47 G3B1 helicopter. Navigation was by visual contact employing photomosaics.

Where it was intended to contour the NPM-1 information, a tie line was flown across the survey grids.

The survey was flown at an average airspeed of 50 - 60 mph. The terrain clearance did vary strongly due to the roughness of topography.

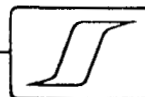
#### PRESENTATION OF DATA

The results available to date of the airborne magnetometer surveys have been plotted on Plate 1, on the scale of 1"  $\approx$  1000 ft. Individual traverses flown and their corresponding line numbers are indicated on this plate together with the main topographic features.

Magnetic data are shown as total magnetic intensity contours with a contour interval of 25 gammas or greater depending on the magnetic relief. The base intensity is 59,000 gammas. The absolute value of the earth's total magnetic field near Cassiar townsite is approximately 59,000 gammas. The inclination of this field is approximately 74°N.

#### DISCUSSION OF RESULTS

The magnetic results of the central part of the survey grid show moderate relief up to 700 gammas. While a comparison of the topographic



and magnetic contour maps suggests that a portion of the magnetic field is reflecting the topography, the magnetic anomalies also suggest a change in the rocks underlying the area of interest.

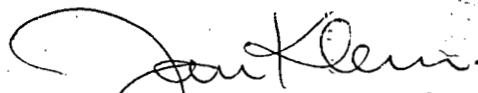
A magnetic low occurs in the valley between Cassiar townsite and the mine site. Directly to the west a series of crescent-shaped highs occur scattered within an area rising approximately 250 gammas above the magnetic level of the valley.

No geological information was available at the time of writing the present report to comment upon the geological significance of the magnetic results. The 200 gamma magnetic contour level (directly west of the valley) however, likely reflects the contact between two rock types or the western fault of a graben zone. A possible fault zone occurs near and parallel to line 29S.

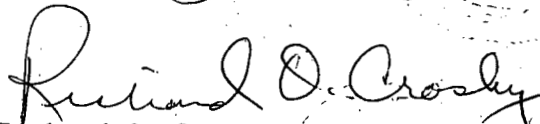
Prior to undertaking any further exploration work in the survey area, detailed geological information available to Cassiar Asbestos Corporation Limited should be used in the evaluation of the magnetic results.

Respectfully submitted,

SEIGEL ASSOCIATES LIMITED

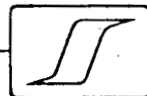


Jan Klein, M.Sc., P.Eng.



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

Toronto, Ontario.  
January 20th, 1969.



**SEIGEL ASSOCIATES LIMITED**  
GEOPHYSICAL CONSULTANTS & CONTRACTORS  
A DIVISION OF SCINTREX LIMITED

November 29, 1968

*Rec'd Dec 7, 1968  
WJP*

Cassiar Asbestos Corp. Ltd.  
Cassiar, British Columbia

Attention: Mr. W. Plumb

Dear Sirs:

Re: Airborne Magnetometer Survey  
Cassiar, British Columbia

This will confirm our understanding whereby we undertake to fly an airborne magnetometer survey on your behalf in the Cassiar area, British Columbia.

1. We will provide a nuclear precession total field magnetometer and auxiliary equipment necessary for the execution of an airborne survey.
2. We will supply an experienced geophysical operator.
3. Utilizing the above we will carry out an airborne magnetometer survey on such properties or on such lines as you will designate in the above area.
4. We will reduce, fairdraw and interpret the results arising from the survey and submit a report thereon in four copies.

Our charges for these services will be as follows:

- (a) For items 1, 2, 3 and 4 at the rate of \$40.00 per line mile of survey.
- (b) Mobilization and demobilization of personnel and equipment, at cost. In the event that the same personnel and equipment are employed on behalf of other clients in the Watson Lake area, these charges will be pro rated in accordance with the relative duration of transportation on the job.
- (c) Cost of transportation on the job.

Cassiar Asbestos Corp. Ltd.

Page 2

November 29, 1968

In addition, it is agreed that you:

1. Will provide a Bell 47G351 helicopter and pilot capable of flying traverse lines spaced at 500 feet intervals at an attitude of 200 feet mean terrain clearance.
2. Will be responsible for housing and subsistence of the geophysical operator.
3. Will provide two copies of a photomosaic, scale 1" = 1000 feet, suitable for flight maps and as a base for final compilation.

Billing will be made monthly, in arrears, for services rendered during that month. An initial payment of \$1,000.00 due at the signing of this agreement is required.

Would you kindly sign and return the attached copy of this proposal as an indication of your approval of the terms and conditions thereof, and return same with the specified down payment to this office. We will then proceed accordingly.

We look forward, with pleasure, to being of service to you in this regard.

Yours very truly,

SEIGEL ASSOCIATES LIMITED




Richard O. Crosby  
Western Manager

ROC/ef

APPROVED:

Cassiar Asbestos Corp. Ltd.



Date

Dec 5, 1968



CASSIAR ASBESTOS CORPORATION LIMITED  
CASSIAR, B. C.

DATE Dec. 5, 1968. 1968

TO CASHIER

Please issue cheque in the amount of \$ 1,000.00  
in favour of:

**SINGEL ASSOCIATES LIMITED**

Details: **Initial Payment, Airborne Magnetometer Survey, Cassiar, B.C.**

Charge Account No. **89-01-06**

Requested by

*Wm. Plumb*

Approved

Illustrations of Checks:

- Mail to Payee ( )
- Mail with Endorsement ( )
- Mail with Endorsement ( **X** )



**SEIGEL ASSOCIATES LIMITED**  
 GEOPHYSICAL CONSULTANTS & CONTRACTORS  
 A DIVISION OF SCINTREX LIMITED

January 21, 1959.

Invoice 68215

Cassiar Asbestos Corporation Ltd.,  
 Cassiar,  
 British Columbia.

Re: Airborne Magnetometer Survey  
Cassiar, British Columbia. Contract # 128

A)	31.7 line miles of magnetic survey @ \$70.00 per line mile.	\$1,268.00
	18.2 line miles are recovered, but no compilation due to lack of magnetic data and therefore, no charge.	
B)	Mobilization and demobilization of personnel and equipment.	405.80
C)	Transportation, 4.45 hours helicopter charges, @ \$140.00 per hour.	665.00
D)	Room and board, for geophysical operator.	<u>103.76</u>
		\$2,442.26
	Less down payment received Dec. 9th, 1958	<u>1,000.00</u>
		<u>\$1,442.26</u>

JANUARY 29, 1969

SEIGEL ASSOCIATES LIMITED  
79 MARTIN ROSS AVENUE  
DOWNSVIEW, ONTARIO

ATTENTION: MR. JAN KLEIN, M.Sc., P.Eng.

RE: AIRBORNE MAGNETOMETER SURVEY, CASSIAR  
AREA, BRITISH COLUMBIA, CONTRACT #128

DEAR SIR:

WE RECEIVED, WITH THANK, FOUR COPIES OF YOUR REPORT ON THE  
ABOVE MENTIONED SURVEY, WITH ANCILLARY DATA.

OUR CHEQUE IN FINAL PAYMENT IN THE AMOUNT OF \$1,442.26 IS  
ENCLOSED.

WE REGRET THE UNFORTUNATE LOSS OF MUCH OF THE COVERAGE, AS  
IT DIMINISHES THE USEFULNESS OF THE REPORT. IF IT IS AT ALL POSSIBLE  
TO RECOVER THE MISSING DATA, WE WOULD APPRECIATE THE COMPLETION OF THE  
REPORT. HOWEVER, WE DO NOT CONSIDER RE-FLYING THE AREA WARRANTED.  
PLEASE ADVISE US IMMEDIATELY IF YOU DO RECOVER THE LOST DATA AND ARE  
PREPARED TO COMPLETE THE REPORT.

YOURS VERY TRULY,

CASSIAR ASBESTOS CORPORATION LIMITED

W. N. PLUMB  
CHIEF GEOLOGIST

WNP/k  
ENCL.

**SEIGEL ASSOCIATES LIMITED**

GEOPHYSICAL CONSULTANTS &amp; CONTRACTORS

A DIVISION OF SCINTREX LIMITED

March 11, 1969

Cassiar Asbestos Corporation Limited  
Cassiar, British Columbia

Attention: Mr. W. N. Plumb

Dear Sirs:

Re: Airborne Magnetometer Survey  
Cassiar area, British Columbia

This will confirm our understanding whereby we undertake to fly an airborne magnetometer survey on your behalf in the Cassiar area, British Columbia.

1. We will provide a nuclear precession total field magnetometer and auxiliary equipment necessary for the execution of an airborne survey.
2. We will supply an experienced geophysical operator and data compiler.
3. Utilizing the above we will carry out an airborne magnetometer survey on such properties or on such lines as you will designate in the above area.
4. We will reduce, fairdraw and interpret the results arising from the survey and submit a report thereon in four copies.

Our charges for these services will be as follows:

- (a) For items 1, 2, and 3 at the rate of \$25.00 per line mile of survey for a minimum of 200 line miles.
- (b) Mobilization and demobilization of personnel and equipment, at cost plus 10%. In the event that the same personnel and equipment are employed on behalf of other clients in the Cassiar area, these charges will be pro rated in accordance with the relative duration of transportation on the job.
- (c) Compilation at the rate of \$5.00 per mile for item 4.
- (d) Cost of transportation on the job.

Cassiar Asbestos Corporation Limited

Page 2

March 11, 1969

In addition, it is agreed that Cassiar Asbestos Corporation Limited:

1. Will provide a helicopter and pilot capable of flying traverse lines spaced at 500 feet intervals at an altitude of 300 feet mean terrain clearance.
2. Will be responsible for housing and subsistence of the geophysical personnel.
3. Will provide 2 copies of a photomosaic, scale 1" = 1000 feet, suitable for flight maps and as a base for final compilation.

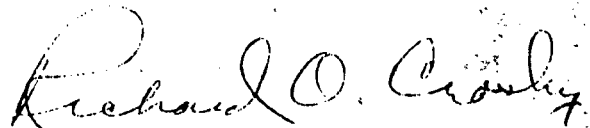
An initial payment of \$500.00 due at the signing of this agreement is required. The remainder will be payable on delivery of our report at the completion of the survey.

Would you kindly sign and return the attached copy of this proposal as an indication of your approval of the terms and conditions thereof, and return same with the specified down payment to this office. We will then proceed accordingly.

We look forward, with pleasure, to being of service to you in this matter.

Yours truly,

SEIGEL ASSOCIATES LIMITED



Richard O. Crosby, P.Eng.  
Western Manager

ROC/ef

APPROVED:

Cassiar Asbestos Corporation Limited



Date

March 17, 1969

CASSIAR ASBESTOS CORPORATION LIMITED

CASSIAR, B.C.

DATE MAR 28 1969

TO CASHIER:

Please issue a cheque in the amount of \$ 500.00

In favour of:

SEIBEL ASSOCIATES LTD

Detail: INITIAL PAYMENT, AEROMAGNETIC SURVEY, CASSIAR AREA.  
CONTRACT DATED MAR 17, 1969.

Charge Account No. 79-01-06

Requested by: *W.A. Plummer*

Approved \_\_\_\_\_

Disposition of Cheque:

- Mail to Payee ( )
- Mail with Enclosure ( )
- Return to Requestor (  )

CHEQUE NUMBER \_\_\_\_\_

**SEIGEL ASSOCIATES LIMITED**  
GEOPHYSICAL CONSULTANTS & CONTRACTORS  
A DIVISION OF SCINTREX LIMITED

April 10, 1969

Mr. W. N. Plumb,  
Chief Geologist,  
Cassiar Asbestos Corporation Ltd.,  
Cassiar, British Columbia.

Dear Sir:

We are sending you the final aeromagnetic contour map showing the results of the area re-surveyed March 17, 1969 due to the loss of data in shipping.

Also enclosed are the magnetic charts, film, your company's topographic maps and two mosaics.

We will soon be sending you an invoice for the survey which will show our charges for executing the additional lines. This charge will amount to \$888.00 less the \$500.00 down payment for a total charge of \$388.00. This figure represents 29.6 line miles at \$30.00 per line mile. The only extra charges should be 1.5 hours helicopter time plus approximately 45 gallons of fuel billed to you by Coast Silver Mines Ltd.

We apologize once again for the delay in this survey but we are very happy with the final results.

Hoping to be of further service to you we remain,

Yours truly,

SEIGEL ASSOCIATES LIMITED



P. Nielsen  
Geophysicist

PN/pd

MAP

NOTE: FINAL ~~REPORT~~ INCLUDED IN THE ORIGINAL ~~MAP~~ REPORT HEREWITH.

Encl.





**RECEIVED**  
MAY 13 / 69

Cassiar Asbestos Corp. Ltd.  
*WNT*

**SEIGEL ASSOCIATES LIMITED**  
GEOPHYSICAL CONSULTANTS & CONTRACTORS  
A DIVISION OF SCINTREX LIMITED

April 30, 1969

Invoice No. BC 9050

**Cassiar Asbestos Corporation**  
**Cassiar, B.C.**

Attention: Mr. W. N. Plumb

FOR PROFESSIONAL SERVICES RENDERED

To: Execute aeromagnetic surveying on your behalf in the  
Cassiar Area, B.C. on March 17, 1969.

29.6 line miles of flying @ \$25 / mile      \$ 740.00

29.6 line miles of compilation @ \$5/mile      148.00

Mobilization charge      Nil

-----  
\$ 888.00

Less down payment      500.00

-----  
Due      \$ 388.00

E. & O. E.

*89-01-06*  
*WNT*

AFFIDAVIT

OF EXPENDITURE INCURRED FOR ASSESSMENT WORK

I, George B. Blair, Accountant OF Cassiar, B. C.

IN THE DISTRICT OF Liard

DO SOLEMNLY SWEAR AND SAY,

THAT ALL EXPENDITURES ON GEOLOGICAL AND/OR GEOPHYSICAL WORK WERE MADE AS REPRESENTED AND THAT PREVAILING RATES OF FEES, SALARIES AND WAGES WERE PAID, AS RECORDED IN THE BOOKS OF THE CASSIAR ASBESTOS CORPORATION LIMITED, WHICH BOOKS ARE OPEN TO INSPECTION BY AUTHORIZED PERSONNEL AT ANY TIME.

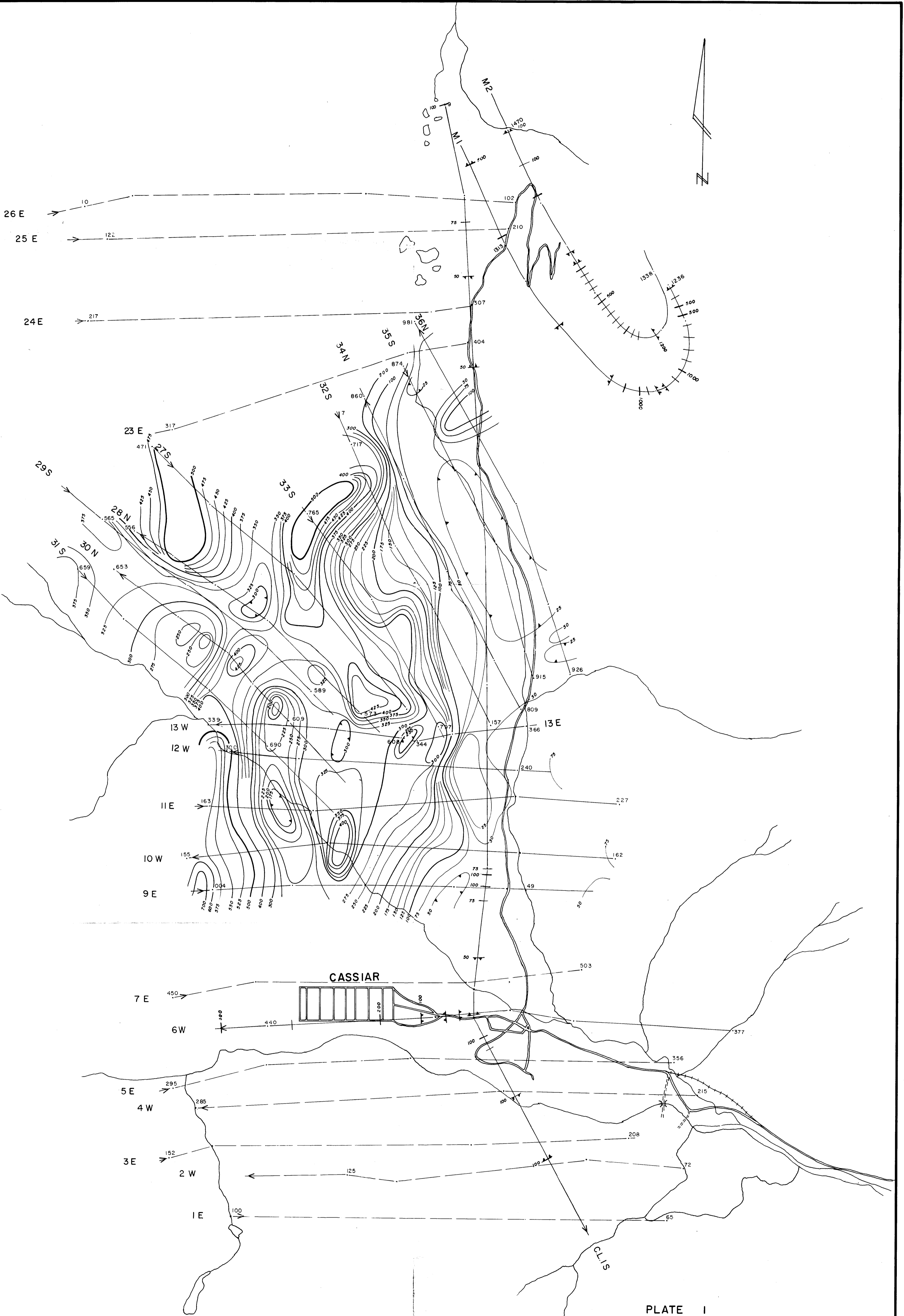
SIGNED AND SUBSCRIBED TO AT  
Cassiar, British Columbia

THIS 16th DAY OF December  
1969

)  
)  
)  
)  
)  
)  
George B. Blair

C. H. GANDER, A NOTARY PUBLIC IN AND FOR THE PROVINCE OF BRITISH COLUMBIA





Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 2168 MAP #1

LEGEND:  
 17W ← 100 FLIGHT LINE NUMBER, DIRECTION AND NUMBERED CONTROL POINT.  
 — 500 GAMMA ISOMAGNETIC CONTOUR INTERVAL.  
 — 100 ———— " ————  
 — 25 ———— " ————  
 ○ MAGNETIC LOW  
 BASE VALUE 59,000 GAMMAS.

PLATE I  
 CASSIAR ASBESTOS CORPORATION LIMITED  
 CASSIAR AREA, BRITISH COLUMBIA  
 AIRBORNE GEOPHYSICAL SURVEY  
 MAGNETOMETER CONTOUR PLAN

SCALE: 1" = 1000' APPROX.

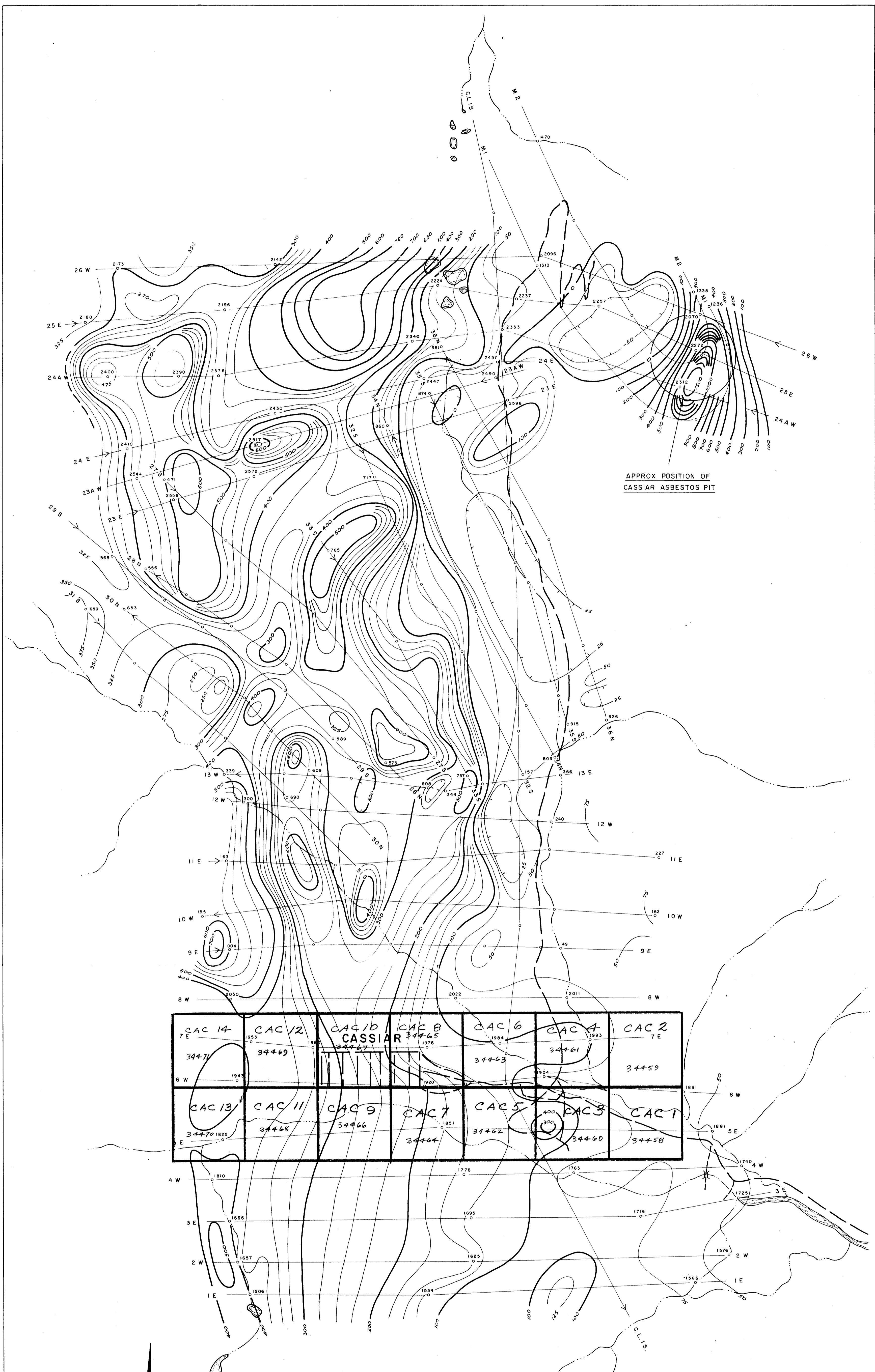
2168

To accompany a geophysical report  
 by Jan Klein, P. Eng., on Mineral  
 Claims CAC 1-14, Cassiar, B.C.  
 Liard Mining Division, dated  
 January 20, 1969.

SURVEY BY SEIGEL ASSOCIATES LIMITED  
 FLOWN & COMPILED, NOV. 1968-JAN. 1969

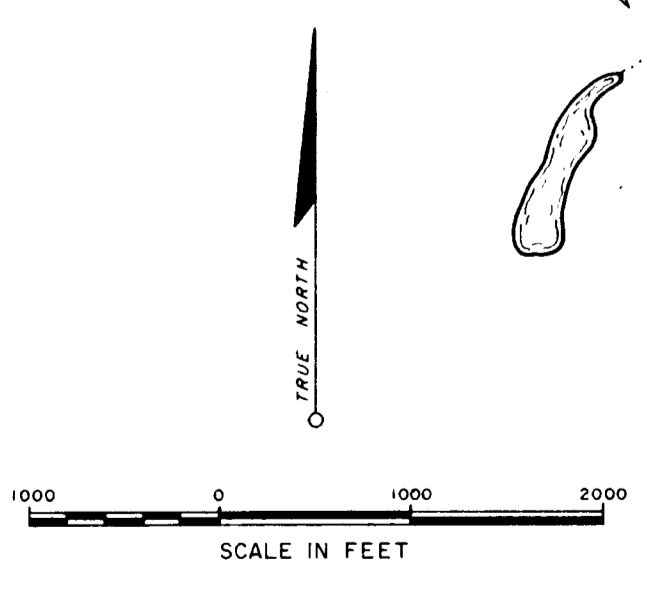
FLIGHT LINE SPACING ≈ 1000'

*Richard O. Brady*



APPROX POSITION OF  
CASSIAR ASBESTOS PIT

CAC 14 34471	CAC 12 34469	CAC 10 34467 <b>CASSIAR</b>	CAC 8 34465	CAC 6 34463	CAC 4 34461	CAC 2 34459
CAC 13 34470 1825	CAC 11 34468	CAC 9 34466	CAC 7 34464	CAC 5 34462	CAC 3 34460	CAC 1 34458



Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. **2168** MAP **#2**

**2168**

PLATE I  
**CASSIAR ASBESTOS CORPORATION LIMITED**  
CASSIAR AREA, BRITISH COLUMBIA  
**AIRBORNE GEOPHYSICAL SURVEY**  
MAGNETOMETER CONTOUR PLAN  
CONTOUR INTERVAL - 25 GAMMAS

**LEGEND**  
FLIGHT LINES, PHOTO IDENTITY  
POINTS AND DIRECTION  
ISOMAGNETIC CONTOURS: 100 GAMMAS  
25 GAMMAS  
MAG. DEP.  
BASE VALUE 59,000 GAMMAS

To accompany a geophysical report  
by Jan Klein, P. Eng., on Mineral  
Claims CAC 1 - 14, Cassiar, B.C.  
Liard Mining Division, dated  
January 20, 1969.

FLOWN AND COMPILED BY  
**SEIGEL ASSOCIATES LIMITED**  
MARCH 1969

*Richard Cook*