

1990

REPORT ON
AEROMAGNETIC SURVEY
CASSIAR AREA, BRITISH COLUMBIA
ON BEHALF OF
COAST SILVER MINES LTD.

104P05W

by

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

May 12, 1969

DATES: March 12 - 19, 1969

CLAIMS:	<u>Name</u>	<u>Record No.</u>
	GOLDEN 1 - 4	6629 - 6632
	NORTHERN QUEEN 1-8	3440 - 3447
	SALVAGE 1-5	6673 - 6677
	SALVAGE 8	6678
	SILVER QUEEN 1-8	2963 - 2970
	FONDA 1 - 10	23204 - 23213
	VINES 1 - 18	23214 - 23231
	SPRING 1 - 5	24685 - 24689
	DELRIO 1 - 4	16923 - 16926
	EAGLE 1 - 8	6915 - 6922
	DIKE 1 - 8	24700 - 24707
	BASS 1 - 12	24708 - 24719
	PATRICIA 1 - 6	24128 - 24133
	COPPER 1 - 6	24134 - 24139
	CROWN 1 - 14	24140 - 24153
	GIPSY QUEEN 1-8	24154 - 24161
	NES 6 - 9	24681 - 24684
	SIL 1 - 8	24762 - 24769
	PATRICIA II 1-24	28597 - 28620
	BAR 1	25907
	B-2	25906
	CLAY 1 - 8	15240 - 15247
	MAGNA 1 - 4	15800 - 15803

LOCATION:

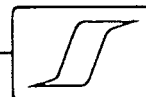
About three miles south of the Town of Cassiar, B.C.
Liard Mining Division 129° 59° SW

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Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. **1990** MAP



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

REPORT ON
AEROMAGNETIC SURVEY
CASSIAR AREA, BRITISH COLUMBIA
ON BEHALF OF
COAST SILVER MINES LTD.

INTRODUCTION

During the period March 12 through March 18, 1969 an aeromagnetic survey was flown over an area centred 3 miles south of Cassiar, British Columbia.

The area measures approximately 50 square miles. Survey traverses were flown east-west at an interval of one-eighth mile and at a mean terrain clearance of about 300 feet. Magnetic control lines were flown north-south at the eastern and western limits of the survey area to level the magnetic data. A total of 302 line miles of survey were flown.

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 Bell 47G3B1 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 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 a producing asbestos mine 3 miles to the north and numerous showings of silver, lead, zinc and copper on the property. New Jersey Zinc is presently conducting a drilling program on a molybdenum property in the western part of the survey area.

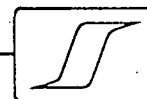
The aeromagnetic survey was under the direction of Mr. Philip Nielsen with assistance from Mr. Ronald Sheldrake.

PRESENTATION OF DATA

The magnetic data are shown on one map sheet at a scale of 1:15,840. The planimetry on this sheet has been traced from the uncontrolled photomosaic employed for navigation purposes. Magnetic data are contoured at an interval of 25 gammas. No corrections have been made for regional magnetic variation. The total magnetic field in the survey area is approximately 58,800 gammas and the inclination of the earth's total magnetic field is approximately 77 degrees.

DISCUSSION OF RESULTS

The observed magnetic relief is a total of about 800 gammas and occurs almost entirely in the western and southwestern portions of the survey area. The magnetic relief over the remainder of the area except for a section in the extreme northeast corner is of the order of about 50 gammas. The most prominent feature of the aeromagnetic survey is the north trending magnetic depression extending from Line 16 West to Line 48 West along the western edge of the survey area. New Jersey Zinc is currently drilling a molybdenum prospect located in this magnetic depression on Line 36 East.



Dislocations of magnetic gradients and northeasterly trending anomalies suggest that the area is probably faulted by a series of north-east trending faults. Granite Creek, about one-half mile north of the New Jersey Zinc camp, appears to be controlled by this structural direction. Additional parallel faults have been interpreted southeastwards from the creek. A major fault striking northwest is interpreted about one-quarter mile north of the New Jersey camp.

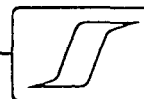
A group of anomalies in the centre of the survey area extending from Lines 18 West to 36 West suggest the presence of important north-south structure. This northward trending series of anomalies is interpreted as arising from intermediate type rocks. Five north-south faults have been interpreted in the extreme southern end of the survey area.

The intense magnetic anomalies along the western edge of the area are obviously not of sedimentary origin and are due to magnetite, either in igneous rocks or in skarn alteration zones. Since drill results to date on the Coast Silver property have indicated a correlation between magnetite and silver, lead and zinc, the importance of the anomalies cannot be overemphasized.

CONCLUSIONS AND RECOMMENDATIONS

The airborne magnetometer survey has revealed extensive areas warranting further ground work.

Important among these areas is the magnetic depression associated with the New Jersey Zinc molybdenum prospect. It is recommended that a program of geochemistry be initiated to locate areas with



anomalous molybdenum content. Particular attention should be observed in the vicinity of interpreted structure.

Drill information, from holes completed to date, should be correlated with the magnetic map and future drill sites should be predicated on detailed ground magnetic surveys of the airborne anomalies in conjunction with geological information.

The magnetometer survey also suggests the absence of any ultra basic rocks which could be associated with asbestos.

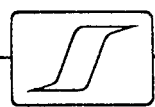
Respectfully submitted,

SEIGEL ASSOCIATES LIMITED

Richard O. Crosby

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

Vancouver, B.C.
May 12, 1969



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.

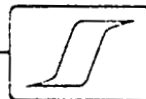
Its cycle period is 1.1 seconds. Each cycle it measures the total intensity of the earth's magnetic field and this quantity, in gammas, is recorded, in analogue form, on a suitable graphic recorder. The full scale sensitivity is usually 1000 gammas and the recorder automatically steps each 500 gammas. 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.

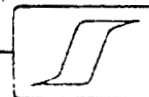
The output of the Bonzer may be expressed in analogue form on a suitable graphic recorder, or may be, for convenience, converted to a semi-digital form on a recorder side pen. In the latter event the altimeter record is a series of spaced pulses whose separation is proportional to the mean terrain clearance.

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
Coast Silver Mines Ltd.

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 mineral claims in the Cassiar area, British Columbia, between
March 12 to 19, 1969. The following expenses were incurred:

(1) Wages:			
	R. Sheldrake	8 days @ \$50/day	\$400.00
	P. Nielsen	8 days @ \$50/day	400.00
	J. Mabley	8 days @ \$50/day	400.00
	K. Jones	4 days @ \$50/day	<u>200.00</u>
			\$1,400.00
(2)	Transportation & shipping to the job		1,034.00
(3)	Transportation on the job		94.60
(4)	Food & Living Expenses		177.10
(5)	Use of Geophysical Equipment	8 days @ \$150/day	1,200.00
(6)	Consulting Fees	10 days @ \$646/day	<u>6,460.00</u>
			\$10,365.70

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 15th
day of May, 1969, A.D.

E M Flett

Joan Turner SUB-MINING RECORDER
A Commissioner for taking Affidavits for British Columbia or
A Notary Public in and for the Province of British Columbia.

In the Matter of

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Statutory Declaration

(CANADA EVIDENCE ACT)

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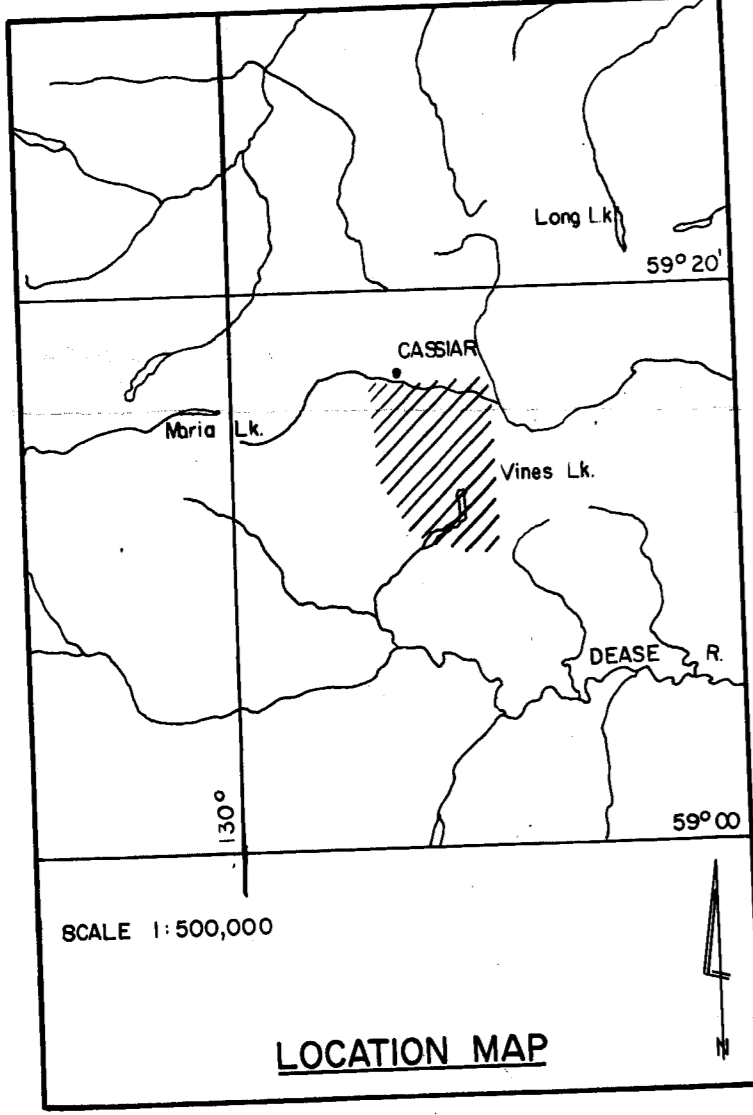
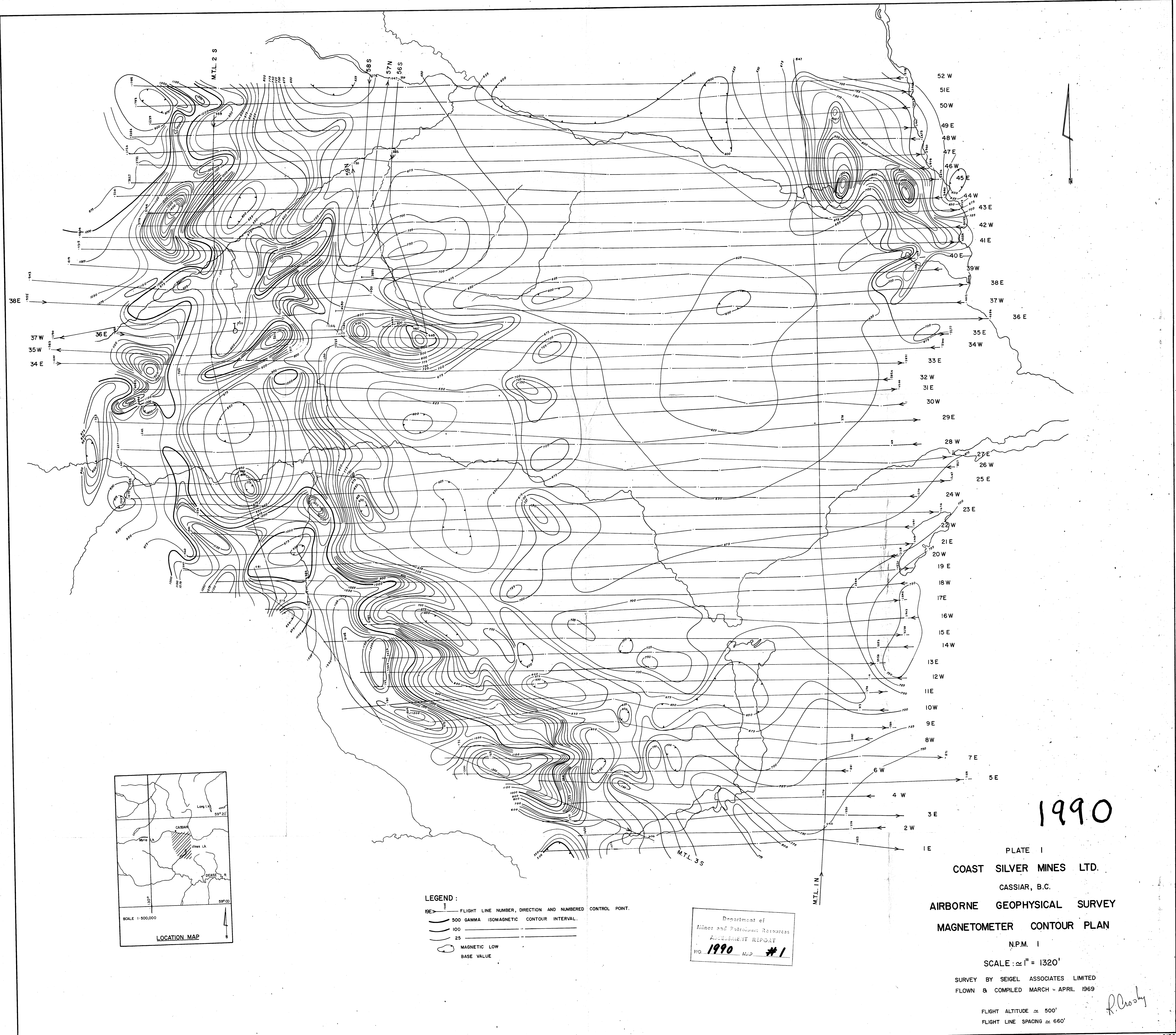
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- LEGEND:**
- FLIGHT LINE NUMBER, DIRECTION AND NUMBERED CONTROL POINT.
 - 500 GAMMA ISOMAGNETIC CONTOUR INTERVAL.
 - 100 "
 - 25 "
 - MAGNETIC LOW
 - BASE VALUE

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. **1990** M.P. #1

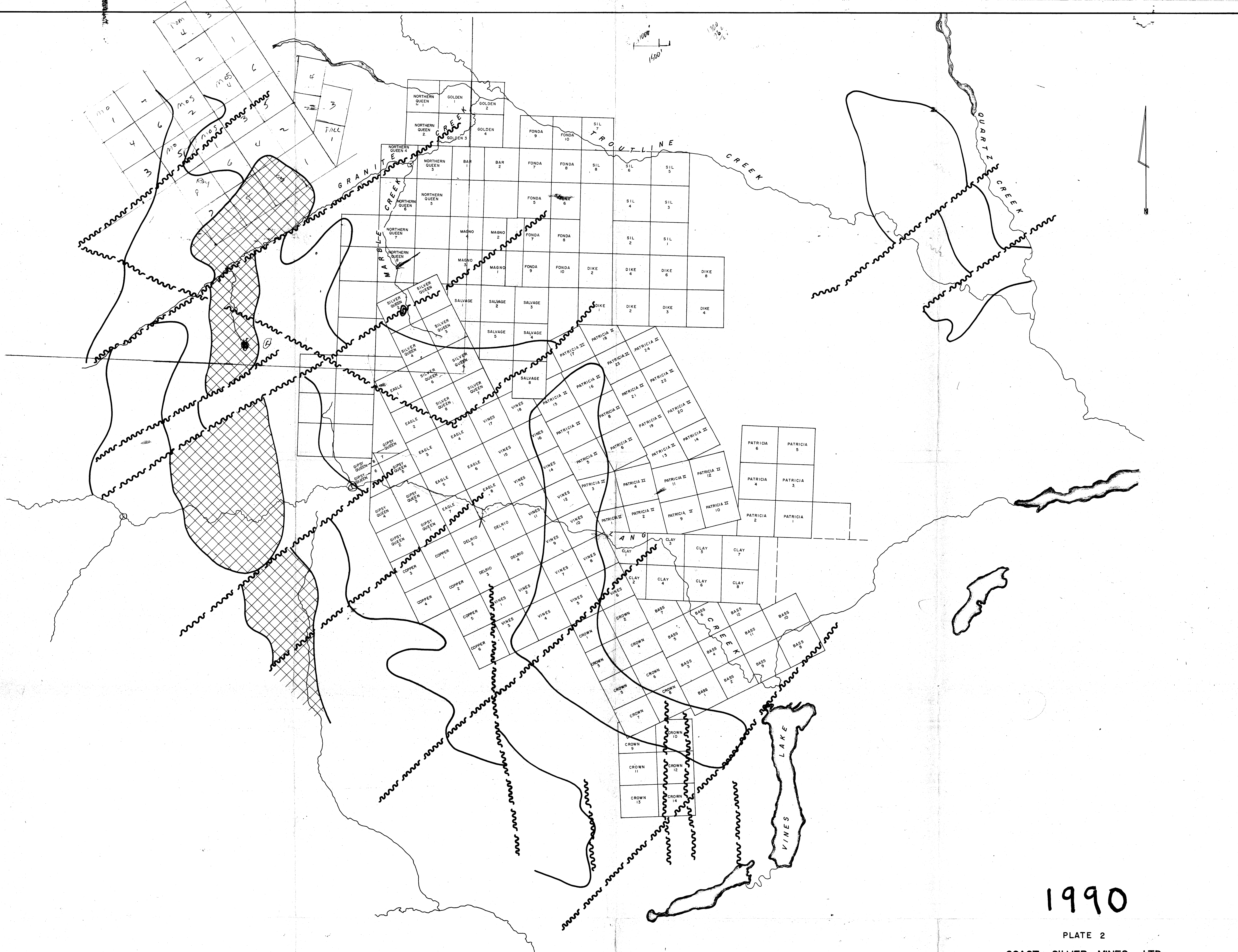
52 W
51 E
50 W
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48 W
47 E
46 W
45 E
44 W
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39 W
38 E
37 W
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15 E
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9 E
8 W
7 E
6 W
5 E
4 W
3 E
2 W
1 E

1990




PLATE 1
COAST SILVER MINES LTD.
CASSIAR, B.C.
AIRBORNE GEOPHYSICAL SURVEY
MAGNETOMETER CONTOUR PLAN
N.P.M. 1

SCALE: 1" = 1320'
SURVEY BY SEIGEL ASSOCIATES LIMITED
FLOWN & COMPILED MARCH - APRIL 1969
FLIGHT ALTITUDE ≈ 500'
FLIGHT LINE SPACING ≈ 660'

P. Crosby



LEGEND :

 ANOMALOUS AREA OR CONTACT.
 PROB. FAULT.
 POSSIBLE ALTERED INTRUSIVE.

Department of
 Miner and Petroleum Resources
 ASSESSMENT REPORT
 NO. 1990 MAP #2

1990

PLATE 2
 COAST SILVER MINES LTD.
 CASSIAR, B.C.
 AIRBORNE GEOPHYSICAL SURVEY
 GEOPHYSICAL INTERPRETATION
 N.P.M. 1

SCALE : $\approx 1" = 1320'$
 SURVEY BY SEIGEL ASSOCIATES LIMITED
 FLOWN & COMPILED MARCH - APRIL 1969
 FLIGHT ALTITUDE $\approx 500'$
 FLIGHT LINE SPACING $\approx 660'$