

1770

GEOLOGICAL AND GEOPHYSICAL REPORT

ON THE

HOL 2, 4, 6, 8, 10, 13-20, 25, 27, 29, 31 & 33

MINERAL CLAIMS

RECORD NUMBERS 23035, 23037, 23039, 23041, 23043
23046-23053, 23054, 23056, 23058, 23060 & 23062

IN THE NANAIMO MINING DIVISION

20 MILES WEST OF PORT HARDY

50° 40' NORTH LATITUDE
128° 00' WEST LONGITUDE

VANCOUVER, B.C.

FEBRUARY 19, 1969

W.G. STEVENSON

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INTRODUCTION

During 1968 a block of 42 mineral claims was staked over an area two miles north of Holberg and 22 miles west of Port Hardy. In 1969 monies in lieu of work was paid to satisfy the assessment requirements to validate 24 of these mineral claims for a period of one year. Waterton Airex Ltd. was engaged to conduct an airborne geophysical survey over these claims and assemble geophysical map showing the result of this survey.

This report is based on examinations that I have made in this area during 1968 and from experience that I gained when working in this area during 1963 and 1964, from a review of the literature and the geological map that has been published. The geophysical data that has been collected by Waterton Airex Ltd. has been studied and correlated with existing geological and geophysical maps to formulate plans for an exploration program during the 1969 field season.

This report is presented to satisfy the assessment requirements on 18 mineral claims for a period of one year. The affidavit on application for certificate of work form B was submitted to the Gold Commissioner in Vancouver on February 5, 1969.

PROPERTY AND TITLE

Mr. Darrell Reinke, Box 245, Vanderhoof, B.C. has staked a block of 42 mineral claims north and east of Holberg. These mineral claims are the HOL 1 - 20; 25-34 and 37-48, record numbers 23034 - 23075. The A forms and executed bills of sale are in the hands of Estey Agencies Ltd., 510 W. Hastings, Vancouver B.C.

You will find attached, marked appendix "C", a list of the HOL mineral claims and pertinent data extracted from the records in the gold commis-

sioner's office. I have also attached a photocopy of part of the B.C. Department of Mines mineral map of this area. This is marked appendix D.

LOCATION AND ACCESS

The Hol claims are positioned 22 miles westerly from the village of Port Hardy, centered 1 and a half miles north of Holberg. The property adjoins claims held by Utah Construction and Mining Company and also adjoins claims held by Holberg Mines Ltd.

The Holberg - Port Hardy road crosses the property and subsidiary logging roads provide access into the claim block.

HISTORY

Prospecting and exploration commenced on Vancouver Island about 1900. A number of gold, silver, lead, zinc and copper occurrences were discovered, some of which have been developed and brought into production. In 1957 the Japanese contracted with British Columbia companies to purchase iron and copper concentrates and as a result of these contracts, the ore deposits of Coast Copper, Yreka and Empire Development at the north end of Vancouver Island commenced production.

During 1963 the Geological Survey of Canada conducted an airborne geophysical survey and released a set of magnetic maps which covered the northern part of Vancouver Island. These maps caused a renewed interest in the area and a number of companies and individuals acquired mineral claims and initiated exploration programs. One of these companies, Utah Construction & Mining Company, launched a major exploration program and staked 1,000 mineral claims in the Port Hardy area.

Holberg Mines Ltd. have accomplished exploration on their property near Holberg and have reportedly put down one diamond drill hole within

the Hol claim group.

West Coast Mining has held claims for several years and during 1968 initiated a drilling program two miles northeast of the HOL claim group.

GEOLOGY

The north end of Vancouver Island has not been geologically mapped in detail by personnel from the B.C. Department of Mines or the Geological Survey of Canada. The coast line of northern Vancouver Island and the area from Rupert Inlet southerly for 20 miles has been geologically mapped by personnel from these Government agencies.

An airborne magnetic survey was completed and geophysical maps were published by the Geological Survey of Canada during 1963. This survey extended over the northern end of Vancouver Island and included the area now covered by the HOL claim block. The geophysical maps are drawn to a scale of 1" = 1 mile and they have provided information which has been used to assist in interpreting the geology of this area.

The oldest rocks in the Port Hardy area are a sequence of volcanic basalts and interlayered limestone. These rocks are part of the Vancouver group of Triassic Age. The Vancouver Group is subdivided into the Karm^utsen formation, a thick volcanic flow the oldest member. This is overlain by the Quatsino, a limestone horizon which is, overlain by the Bonanza formation, the youngest member of the Vancouver Group. The rocks in the Bonanza formation are a series of thin-bedded argillites and limestone measures interbedded with volcanic tuffs and agglomerates.

The volcanic and sedimentary rocks of the Vancouver group have been subjected to deformation and faulting and to at least two ages of igneous intrusion. The oldest during Cretaceous time and the youngest during

Tertiary time.

Unpublished maps in the G.S.C. offices show two intrusive bodies near the Hol claim boundary. One intrusive mass is exposed approximately four miles northwest of the HOL claim group. The second intrusive mass two miles north of the HOL group.

I have examined the intrusive located two miles northerly which is on the property held by West Coast Mining Company. This intrusive is strongly altered and mineralized with iron sulfides and minor amounts of copper. The G.S.C. Maps show a southwesterly trending fault which may be related to the mineralization on the West Coast Mining property and which may project into the HOL claim block.

I have compiled and attached as Appendix a map of this area based on the information presently available which will show the geology and the property outline.

MINERALIZATION

Claims which are now expired were previously held over the HOL claim block and a diamond drill hole put down to a depth of 90 feet. The drilling that was accomplished was submitted to the Mining Recorder in the Nanaimo Mining Division to satisfy the assessment requirements on these old claims for a period of one year.

There is no published information on the mineralization within Utah's property or within the property of West Coast Mining Company. Mineralization on the Holberg property which is located immediately south of the HOL claim is described in the B.C. Minister of Mines Reports as scattered occurrences of hornite in greenstone and basalt and as bornite in fracture fillings and as a replacement of orthoclase and quartz.

Approximately 5000 feet of diamond drilling has been accomplished on the Holberg property.

GEOPHYSICAL SURVEY

Waterton Airex Limited was engaged to conduct an airborne geophysical survey over the HOL claim block. The instruments used to record data from this survey were a magnetometer, a scintillometer and an electromagnetic device.

The plane used to accomplish this survey was a Piper PA 28 - 235 B equipped with a sharpe PMF3 Flux gate magnetometer adapted for airborne survey; a Detectron Co. DR-229 nucleometer and a 1000 cycle per second pulse transmission electromagnetic detector.

An 8 mm movie camera is mounted in the plane to photograph the instrument dials on a film strip. The camera has a timing device which provides for photographs of the instruments in flight to obtain periodic pictures at constant time intervals. This time interval represents a specific distance on the ground depending on weather conditions and performance of plane. This airborne geophysical system is held by Mr. Claude Waterton under Canada Patent Number 758308-1967.

The time interval set for this survey obtained photographs at intervals of 250 feet on the ground. Flight lines were spaced 250 feet apart. The instrument responses are recorded on a Base map which is drawn to a scale of 1" = 500 feet.

A series of high magnetic readings are outlined on the airborne maps. These have been segregated into four bands trending North westerly across the claim block. These are in turn separated by three bands of Lower magnetic intensity. These variations are undoubtedly reflection rock types of unequal magnetite content.

One zone of highs shown on the map marked Appendix E - 3 crosses diagonally through the map sheet from southeast to northwest, this coincides with a zone of high electromagnetic response shown on the map marked Appendix E - 4.

A subsidiary zone of high electromagnetic response is shown on this map in the Northwest quarter immediately north of the main zone.

All of the radiometric responses are in the south and west parts of the map. I do not recognize any particular association between high radiometric values and either magnetic or electromagnetic responses of this survey.

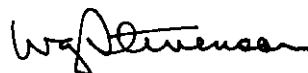
CONCLUSIONS

1. The geology over the northern part of Vancouver Island has not been mapped in detail by the Federal or Provincial Governmental agencies.
2. The airborne magnetic and electromagnetic data collected by Waterton Airex Limited suggest a northwesterly formational trend across the HOL claim block.
3. This is supported by a regional map compiled from various sources and which is attached marked Appendix B.
4. Utah Construction and Mining Company holds a large number of mineral claims which extend northwesterly from Rupert Inlet for a distance of 20 miles, and which adjoins the HOL claim group.
5. Little information is available regarding structure and lithology, grade, or type of mineralization on Utah's property.
6. A significant iron sulfide gossan has been discovered on the property held by West Coast Mining Syndicate which is located two miles north of the HOL Claim Group. Little information regarding geology or mineralization is available.

7. The maps that I have studied indicate that this gossan zone trends northeasterly-southwesterly and projects toward the property of Holberg Mines.
8. The HOL Claim Group has not been prospected, geologically mapped or geophysically or geochemically surveyed. Exploration is warranted.
9. In areas on the northern end of Vancouver Island where bed rock is concealed, geochemical prospecting has proven a valuable aid in outlining targets for diamond drilling.

Respectfully submitted,

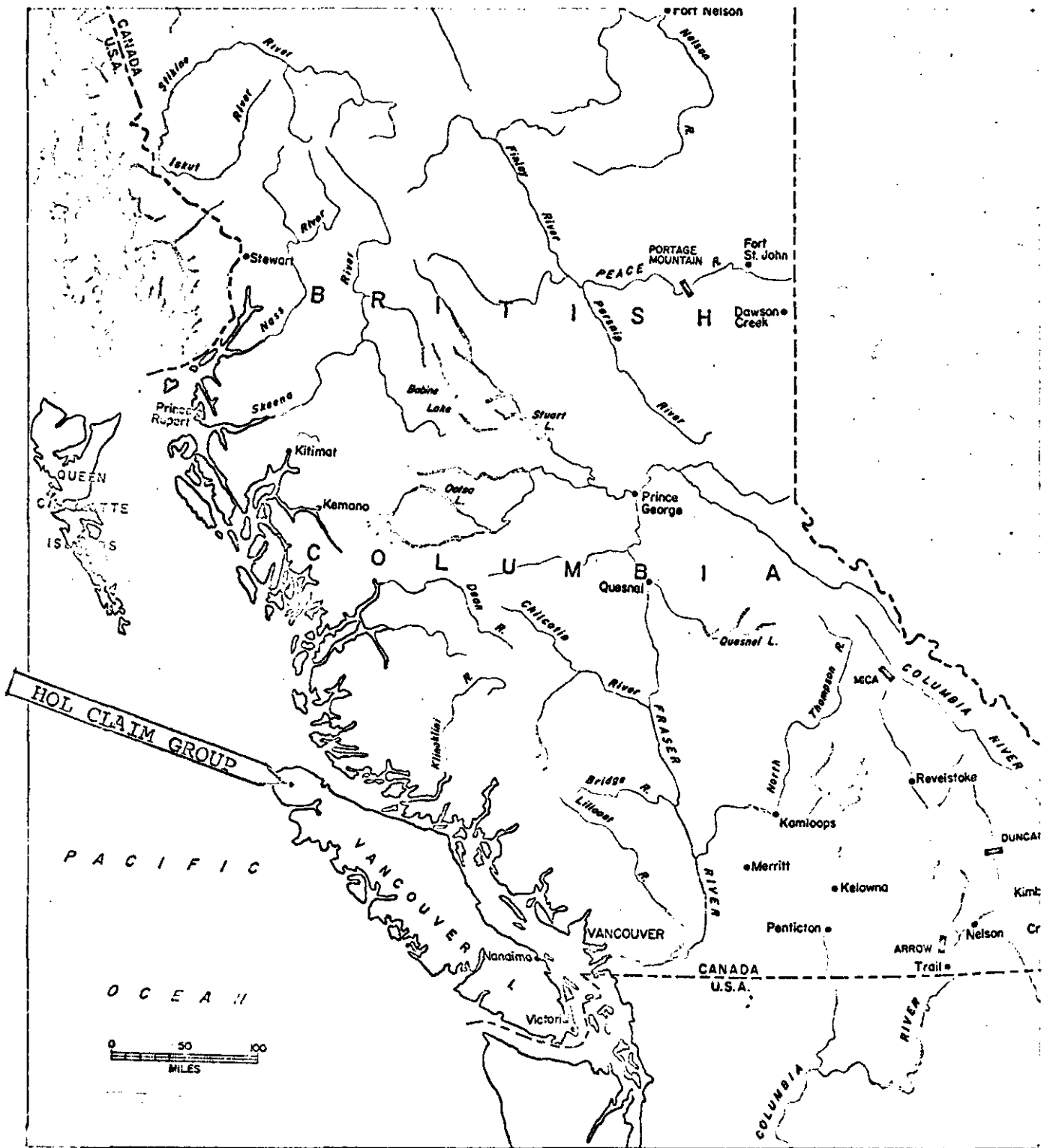
W.G. STEVENSON & ASSOCIATES LTD.,



W.G. Stevenson, P.Eng.

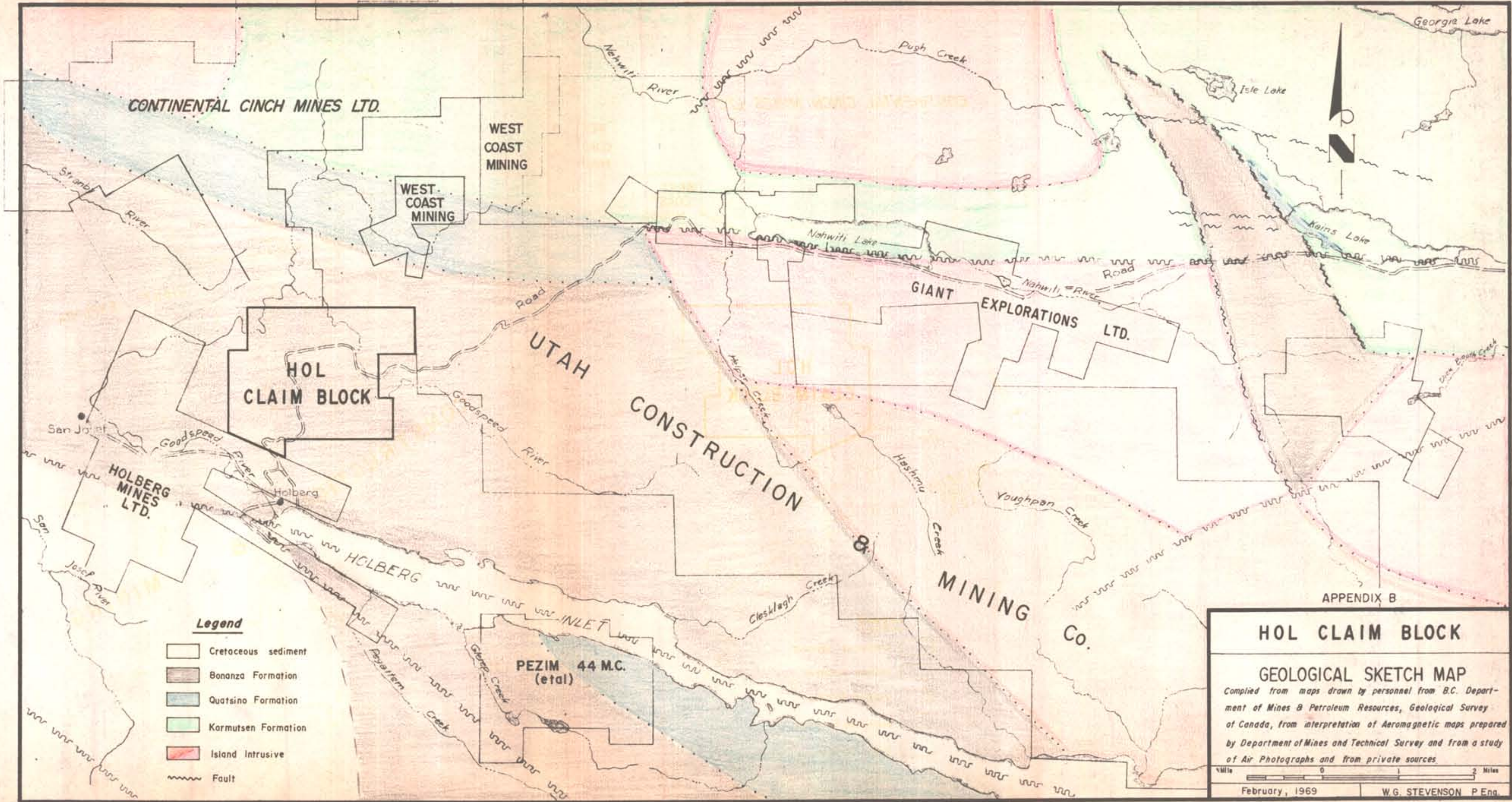
Vancouver, B.C.

February 18, 1969.



INDEX MAP
 Showing Location of
 HOL CLAIM GROUP
 Nanaimo Mining Division
 British Columbia

Scale 1" = 100 Miles



CONTINENTAL CINCH MINES LTD.

WEST COAST MINING

WEST COAST MINING

HOL CLAIM BLOCK

UTAH

CONSTRUCTION

GIANT EXPLORATIONS LTD.

HOLBERG MINES LTD.

HOLBERG

MINING Co.

PEZIM 44 M.C. (etal)

Legend

- Cretaceous sediment
- Bonanza Formation
- Quatsino Formation
- Karmutsen Formation
- Island Intrusive
- Fault

APPENDIX B

HOL CLAIM BLOCK

GEOLOGICAL SKETCH MAP

Compiled from maps drawn by personnel from B.C. Department of Mines & Petroleum Resources, Geological Survey of Canada, from interpretation of Aeromagnetic maps prepared by Department of Mines and Technical Survey and from a study of Air Photographs and from private sources.



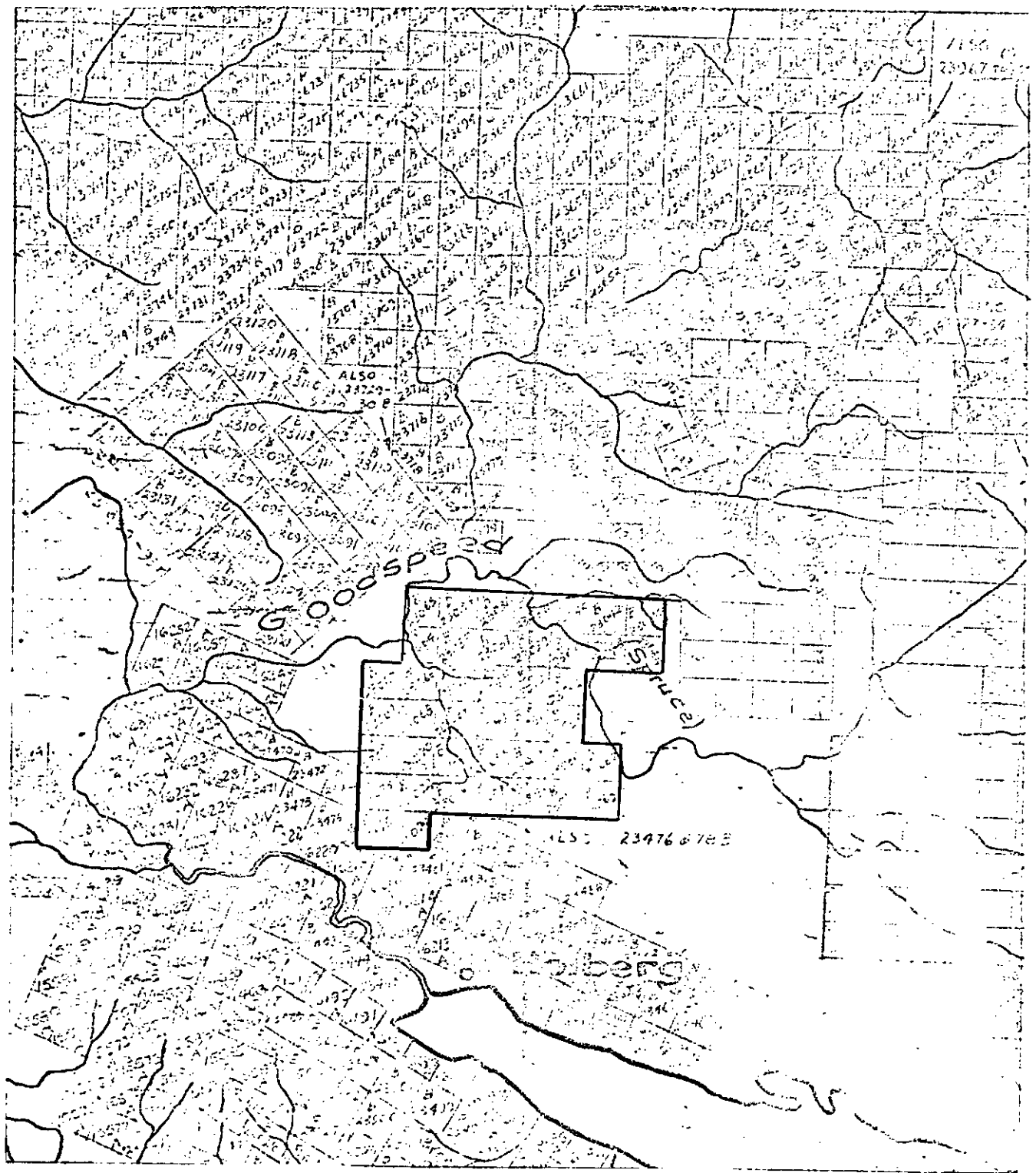
February, 1969

W.G. STEVENSON P.Eng.

DATA ON HOL GROUP OF MINERAL CLAIMS IN THE
NANAIMO MINING DIVISION TO ACCOMPANY REPORT
BY W.G. STEVENSON DATED
FEBRUARY 18, 1969

<u>CLAIM NAME</u>	<u>RECORD NUMBER</u>	<u>DATE STAKED</u>	<u>STAKER</u>	<u>RECORD DATE</u>
HOL #1-20	23034-23053	January 21, 1968	D. Reinke	February 6, 1968
HOL #25-34	23054-23063	January 21, 1968	D. Reinke	February 6, 1968
HOL #37-48	23064-23075	January 21, 1968	D. Reinke	February 6, 1968

APPENDIX C.



Photocopy of Part of
B.C. MINERAL MAP
3-A
Nanaimo Mining Division
British Columbia

Scale 1" = 1 Mile



TOPOGRAPHIC MAP
 Showing Flight Lines
 for Geophysical Survey
 OVER HOL CLAIM GROUP
 WATERTON AIREX LTD.

Scale 1.25" = 1 Mile

An exploration program conducted over the Hol claim group in the Nanaimo Mining Division to satisfy the assessment requirements on eighteen of these mineral claims.

DOMINION OF CANADA:
PROVINCE OF BRITISH COLUMBIA.
To WIT:

In the Matter of

I, W.G. STEVENSON, P.ENG.

of 509 - 475 Howe Street, Vancouver 1, B.C.

in the Province of British Columbia, do solemnly declare that During 1969 an airborne geophysical survey was accomplished over the Hol claim group, under contract with Waterton Airex Limited. The results have been compiled for study, and guidance in the forthcoming exploration program. The costs of this airborne survey, the compilation and study have been \$1,885. This is distributed as follows:

Airborne Geophysical Survey	\$ 1,240
Drafting, reproduction supplies and secretarial assistance	\$ 145
Geological and geophysical inter- pretation and report preparation	\$ 500
	<hr/>
	\$ 1,885

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 *18*
day of *February* 1969, A.D. *W.G. Stevenson*

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

★o

SUB-MINING RECORDER

APPENDIX F

C E R T I F I C A T E

I, William G. Stevenson, do hereby certify:

1. That I am a Consulting Geological Engineer with offices at Suite 509, Stock Exchange Building, 475 Howe Street, Vancouver, B.C.
2. That I am a graduate of the University of Utah, 1946, with a Bachelor of Science degree.
3. That I am a registered Professional Engineer in the Association in British Columbia.
4. That I have practised my profession for twenty-two years.
5. That this report, dated February 18, 1969 is based on work that has been accomplished under my direction.

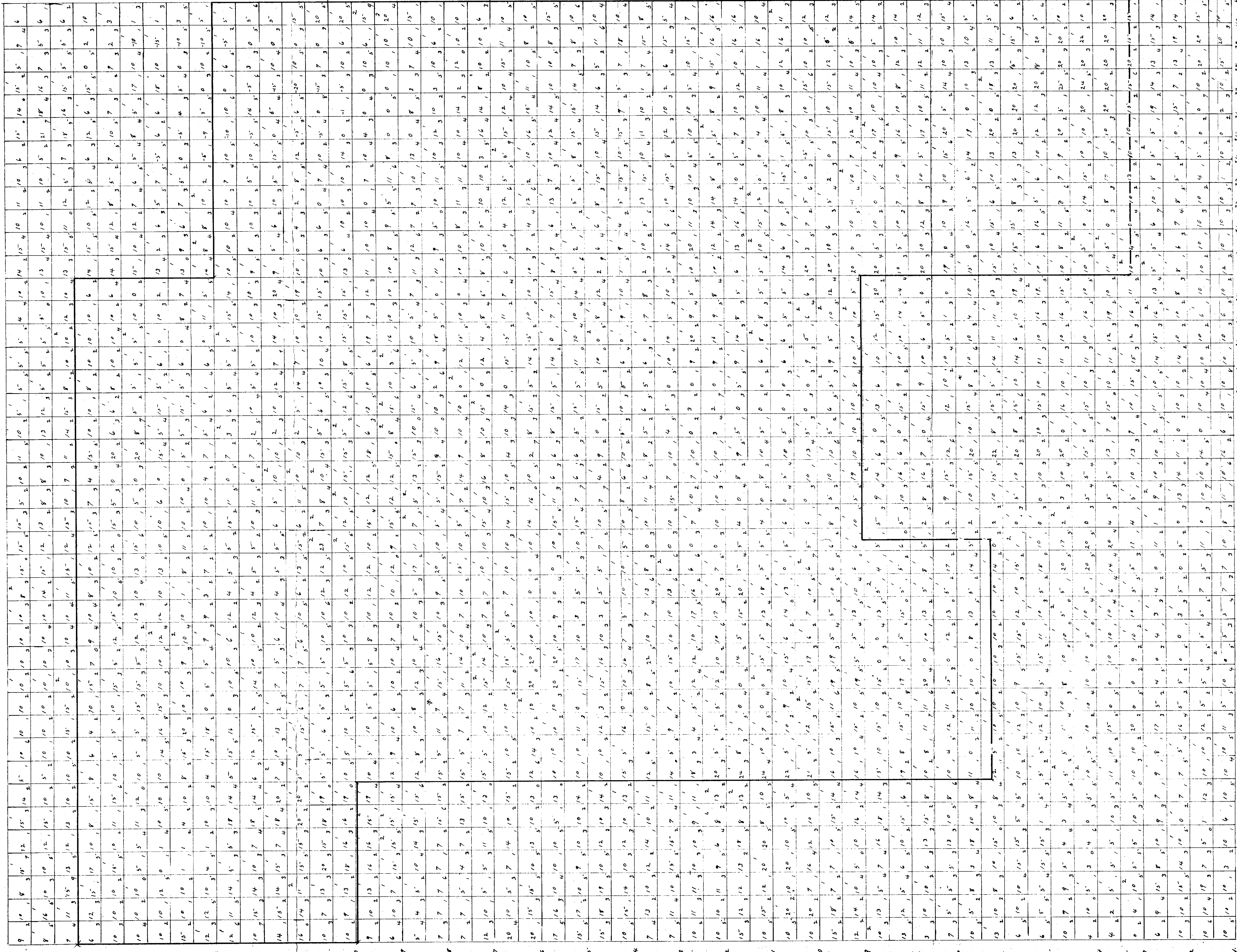
Dated at Vancouver, British Columbia, this 18th day of February, 1969.

W.G. STEVENSON & ASSOCIATES LTD.
Consulting Geologists.



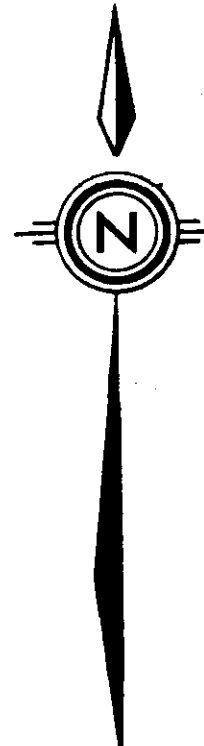
W.G. STEVENSON, P.ENG.

HOL CLAIM OUTLINE



AIRBORNE GEOPHYSICAL RECONNAISSANCE FEB 4 1969
"HOLBERG" AREA OF BC
RUNS 250' APART RECORDED READINGS EACH 250'
GRID SCALE 500' TO ONE INCH. ALT. 500 ABOVE GROUND
MAGNETOMETER SET AT 1000 GAMMAS AS NORMAL
"WATERTON AIREX LTD."

□ ELECTROMAGNETIC .1 MILLIAMPS
○ RADIOACTIVITY .001 MR/HR
△ MAGNETOMETER 100 GAMMAS



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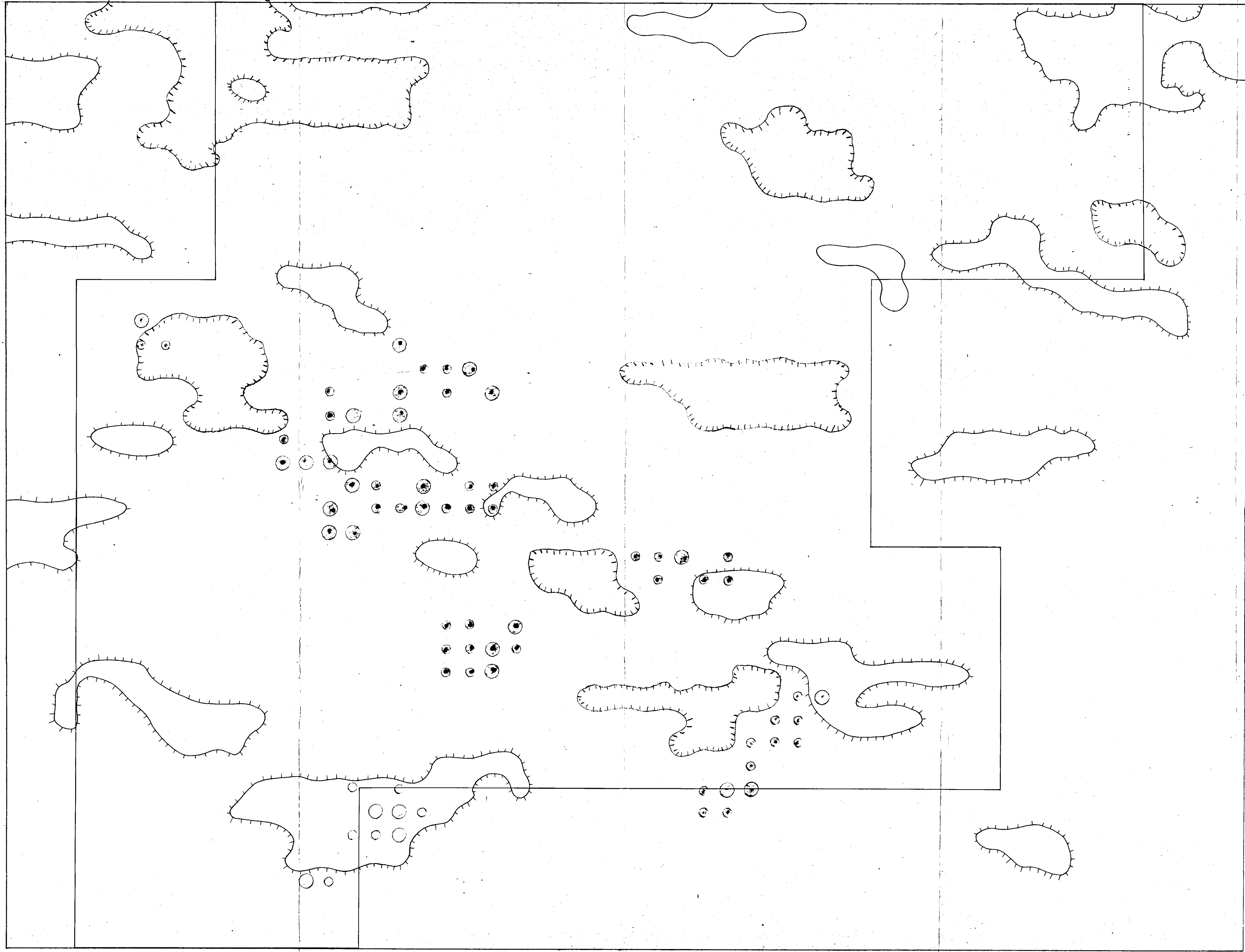
APPENDIX E-
AIRBORNE GEOPHYSICAL SURVEY

HOL CLAIM GROUP
NANAIMO MINING DIVISION

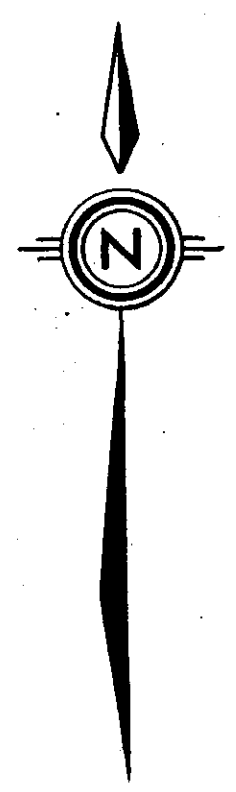
BASE MAP
WITH CLAIM OUTLINE

SCALE
0 500 1000 1500 FT.

WATERTON AIREX LTD.



LEGEND
 ○ 001 Mr/Hr Radioactivity
 - - - Magnetic Depression
 ——— Magnetic High



1770

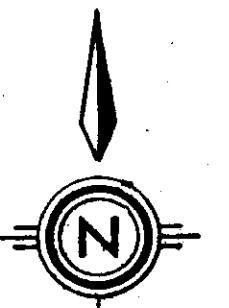
APPENDIX E-3
 AIRBORNE GEOPHYSICAL SURVEY

HOL CLAIM GROUP
 NANAIMO MINING DIVISION

MAGNETOMETER SURVEY
RADIOMETRIC SURVEY ②

SCALE
 0 500 1000 1500 FT

WATERTON AIREX LTD. Feb. 1968



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Area of Electromagnetic Action

APPENDIX E-4
AIRBORNE GEOPHYSICAL SURVEY

HOL CLAIM GROUP
NANAIMO MINING DIVISION

ELECTROMAGNETIC SURVEY ③

SCALE
0 500 1000 1500 Ft.

WATERTON AIREX LTD. Feb. 1988