83-#422-#11206

BRAEMAR RESOURCES CORP.

Geophysical Report
On An

Airborne VLF-Electromagnetometer and
Magnetometer Survey

Olga 1, Olga, Ruza, Au 3 Claims
Slocan Mining Division

Lat. 49°57'N Long. 117°43'W NTS 82F13/E, W.

Authors: E. Trent Pezzot,B.Sc.,Geophysicist
Glen E. White, B.Sc., P.Eng,
Consulting Geophysicist

Date of Work: November, 1982

Date of Report: June 21, 1983

WESTERN GEOPHYSICAL AERO DATA LTD.

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ILLUSTRATIONS

INTRODUCTION

In November, 1982 Western Geophysical Aero Data Ltd. conducted a regional airborne magnetometer and VLF-electromagnetometer survey in the Tillicum Mountain area of B.C. The data was recorded digitally on magnetic tape and has been processed to examine in detail the area of the Olga 1, Olga, Ruza and Au 3 claims on behalf of Braemar Resources Corporation.

The intent of the survey was to delineate any variations in magnetic intensity and ground conductivity that would assist in the search for gold or massive sulphide mineralization.

PROPERTY

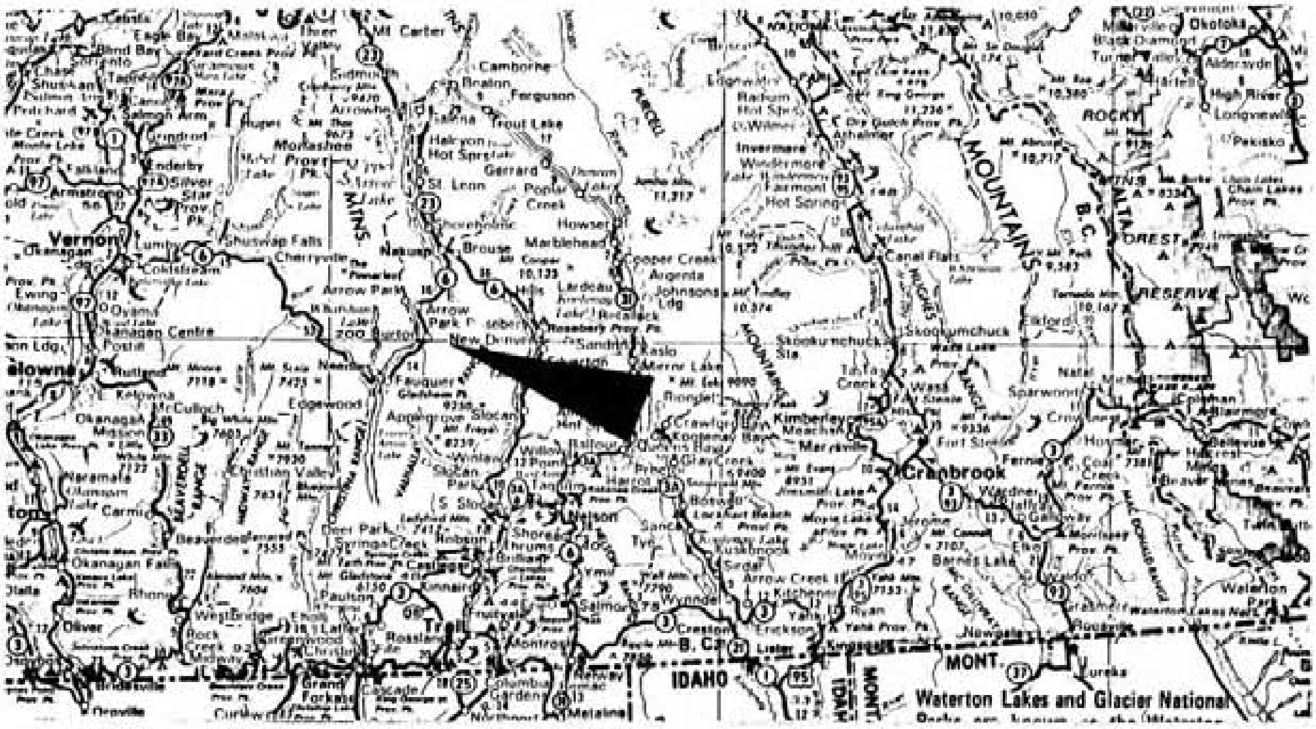
The property consists of the claims listed below and illustrated on Figure 1:

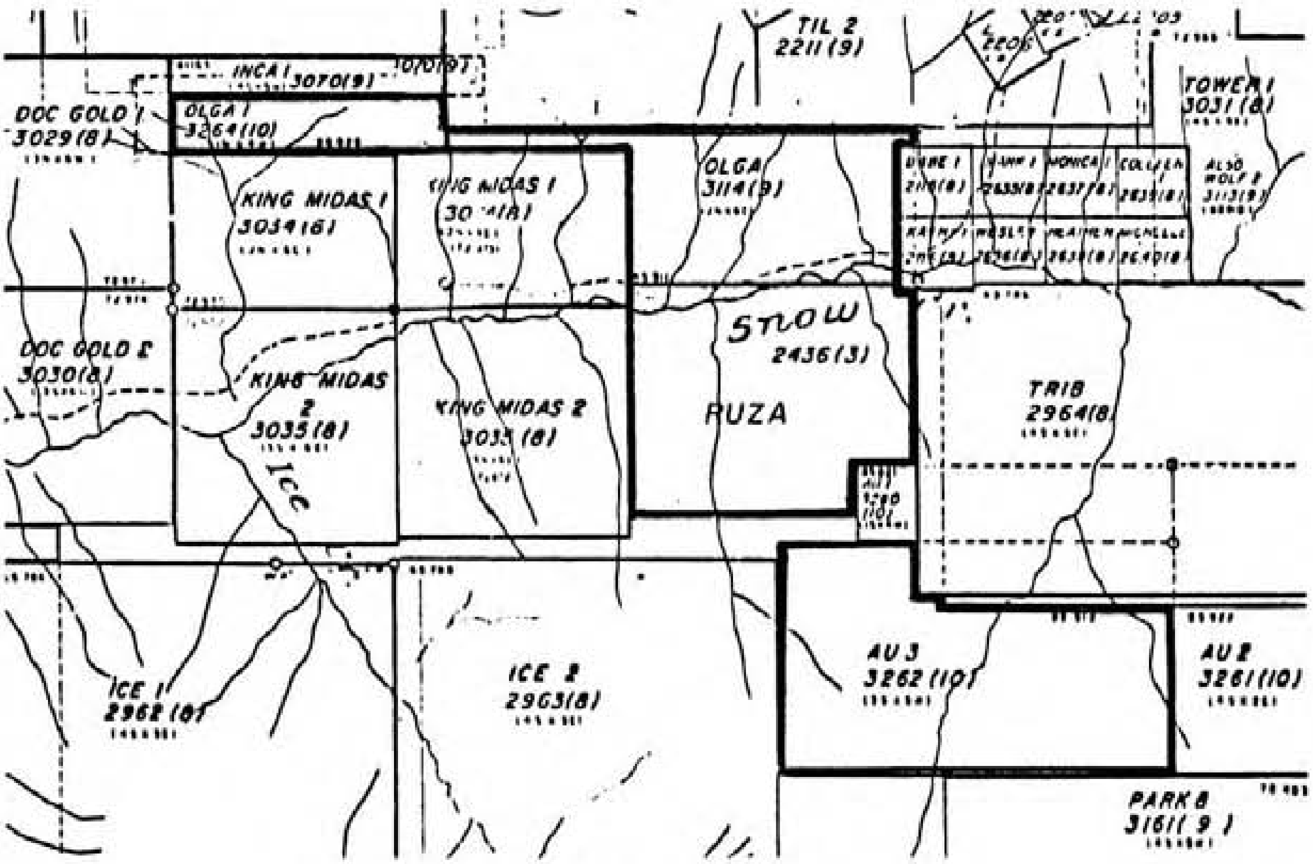
Claim Name	Record No.	Units.
Olga 1	3264	4
Olga	3114	12
Ruza	3300	9
Au 3	3262	15

LOCATION AND ACCESS

The claim area is located some 14 kilometres east-southeast of Burton, B.C. in the Slocan Mining Division and NTS 82F13/W and 82F13/E. Approximate geographical co-ordinates are latitude 49°57'N and longitude 117°43'W.

Direct vehicle access is available to the Ruza claim via a logging road which starts at Burton and follows Snow Creek.





BRAEMAR RESOURCES LTD.

TILLICUM GOLD AREA

LOCATION AND CLAIMS MAP

Western Geophysical Aero Data Ltd

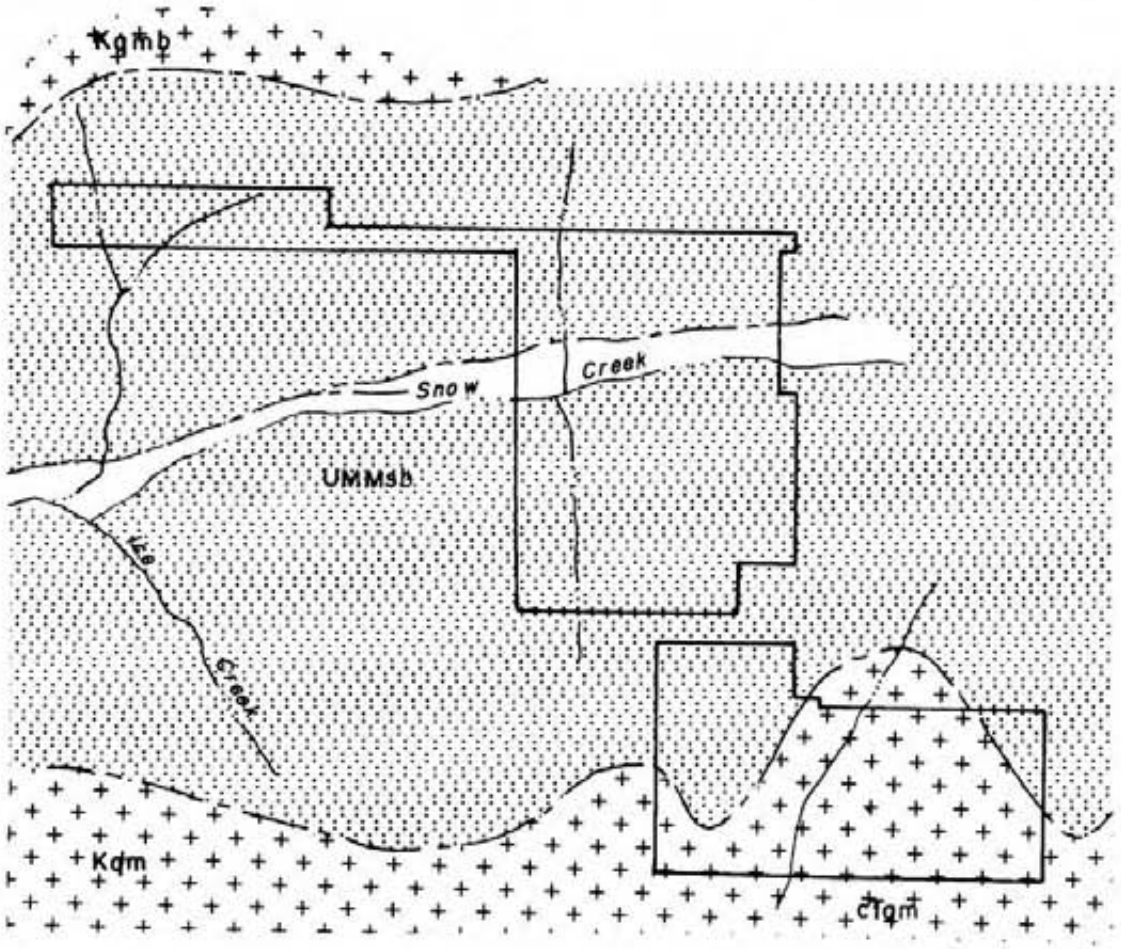
FIGURE 1

LOCAL GEOLOGY

The Geological Survey of Canada has published a map which illustrates the geology of the Arrow Lakes area. That portion which applies to the Braemar Resources Corporation holdings is presented as Plate 1 of this report.

The majority of the claims area is shown to be underlain by rocks of the Upper Mississippian to Pennsylvanian or Permian Milford Group. This group is comprised of pelitic schist, quartzite, metasandstone, paragneiss and calc-silicate metasedimentary rocks. The gold mineralization discovered on Tillicum Mountain occurs within this unit. This group is bordered to the north by the Goat Canyon Stock (Cretaceous and/or Jurassic) and to the south by the Nemo Lakes Stock (Tertiary).

A geological evaluation report on the property is known to have been written by H. Wahl. However, this report is not available to the authors at this time and has not been used in the following interpretation.



NEMO LAKES STOCKS

cTqm — *Leuco quartz monzonite*

GOATCANYON - HALIFAX CREEK AND WRAGGE CREEK STOCK

Kqmb — *Hornblende-biotite quartz monzonite, minor quartz diorite and granodiorite*

SNOWSLIDE - WRAGGE CREEK STOCKS

Kqm — *Epidote-biotite quartz monzonite, quartz diorite and granodiorite*

MILFORD GROUP

uMmsb | uMmsc — *Pelitic schist, quartzite, metasandstone, paragneiss, calc-silicate metasedimentary rocks*

GENERAL GEOLOGY

Western Geophysical Aero Data Ltd.

PLATE 1

AIRBORNE VLF-ELECTROMAGNETIC AND MAGNETIC SURVEY

This survey system simultaneously monitors and records the output signal from a proton precession magnetometer and two VLF-EM receivers installed in a bird designed to be towed 100 feet below a helicopter. A gimbal and shock mounted TV camera, fixed to the helicopter skid, provides input signal to a video cassette recorder allowing for accurate flight path recovery by correlation between the flight path cassette and air photographs of the survey area. A KING KRA-10A radar altimeter allows the pilot to continually monitor and control terrain clearance along any flight path.

Continuous measurements of the earth's total magnetic field intensity and of the total horizontal VLF-EM field strength of two transmission frequencies are stored in three independent modes: an analogue strip chart recorder, digital magnetic tapes and a digital video recovery system. A three-pen analogue power recorder provides direct, unfiltered recordings of the three geophysical instrument output signals. A Hewlett-Packard 9875 tape drive system digitally records all information as it is processed through an onboard micro-computer. The magnetic and electromagnetic data is also processed through the onboard micro-computer, incorporating an analogue to digital converter and a character generator, then superimposed along with the date, real time and terrain clearance upon the actual flight path video recording to allow exact correlation between geophysical data and ground location. The continuous input magnetic signal is processed at the maximum A/D converter rate, averaged and updated on the video display every second. Correlation between the strip chart, digital tape and the video flight path recovery tape is controlled via fiducial marks common to all systems. Line identification, flight direction and pertinent survey information are recorded on the audio track of the video recording tape.

DATA PROCESSING

Field data is digitally recorded on magnetic cassettes in a format compatible with the Hewlett-Packard 9845 computer. The flight path locations are digitized, thus the information can be processed as either time series or space point data.

Total field intensity magnetic information is routinely edited for noise spikes and corrected for any diurnal variations recorded on a base magnetometer located in the survey area.

Total field intensity VLF-EM signals are sensitive to topographic changes and receiver oscillation. Oscillation effects can be removed by filters tuned to the dominant period. Long period terrain effects can be removed by subtracting a polynomial fitted base level from the data. The degree of the polynomial can be selected to best represent terrain variations observed in the survey area.

Short period terrain effects often have similar response parameters to target conductive features. An interpretational technique often useful in distinguishing between terrain anomalies and conductor anomalies is to observe the difference between the responses from two transmitter stations. Terrain variations normally affect both data sets to a similar degree and are much reduced on a difference plot. The amplitude of the response due to a conductive body is dependent upon the relationship between the conductors' strike and direction to the transmitter station. In most instances the anomalous responses will vary between frequencies and therefore remain evident on the difference plot.

DISCUSSION OF RESULTS

Approximately 75 kilometres of flight line data was recovered to examine the Braemar Resources Corporation claims south of Tillicum Mountain. This magnetic data is presented in contour form as Figure 2 of this report. VLF-EM data is profiled on Figures 3-5.

The Olga, Olga 1 and Ruza claims are indicated by the Geological Survey of Canada (G.S.C.) to be underlain by meta sediments of the Milford Group. The southernmost claim , the Au 3, is illustrated as containing a contact between the Milford Group and a Tertiary Intrusive labelled the Nemo Lakes Stock. To the north of the claim group, a Cretaceous intrusive, the Goat Canyon Stock, is indicated.

Two east-west trending magnetic lineaments are noted on the northernmost survey lines. The first closely follows the Goat Canyon Stock- Milford Group contact as delineated by the G.S.C. in the vicinity of lines 85 and 86B. This contact shows up magnetically as a decrease of approximately 50 gammas from the Cretaceous rocks to the metasedimentary sequence. The second and more distinct lineament is a further decrease of 100 gammas in the total field intensity observed between lines 89 and 90. This lineament parallels the Goat Canyon Stock-Milford Group contact and lies approximately 1 km to the south. Located between these two lineaments is a well defined 200 gamma magnetic high centred on line 87. A number of weaker closed magnetic highs are also observed in this area. These results indicate that possibly the G.S.C. mapped Milford Group is a relatively thin sequence north of line 90 and the magnetic highs are outlining areas where underlying intrusives approach the surface. These features occur on a south facing mountain slope and topographic variations could easily combine with a

simple geological model to produce the magnetic responses observed.

An east-west trending magnetic low closely follows line 91B and the Snow Creek valley. This type of response is often observed along fault zones, however, because the lineament parallels the survey lines this interpretation should only be considered a possibility at this time.

Two other magnetic low trends are observed in the data. The first runs north-south along the western border of the Au 3 claim. This low is flanked by two relatively strong magnetic high trends, each of which contains closed anomalies. The second magnetic low trend strikes northeast-southwest across the centre of the Au 3 claim. The magnetic trends roughly correlate with the topography in this area, however, terrain clearance effects do not appear to be a major factor in the magnetic variations observed. It is just as possible that both the topography and the magnetic data are reflecting underlying geological structures. Both of these magnetic lows and the associated drainage valleys, can be interpreted as reflecting fault zones.

No high amplitude, isolated VLF-EM anomalies were observed which could be interpreted as near surface highly conductive bodies. The majority of the VLF-EM trends observed correlate directly with topographic ridge and valleys and are a direct result of changes in the primary field orientation. A few relatively weak anomalies are noted which cannot be explained on the basis of topography. A series of VLF-EM anomalies are observed along lines 85 and 86B. They most likely reflect minor conductivity increases along the intrusive-metasediment contact but since they parallel the survey lines they do not form distinct geophysical anomalies. A weak anomaly is noted near the middle of line 90 on the Seattle VLF-EM data. Both the Annapolis and Seattle frequency data delineate a weak trend on the west ends of lines 95A and 96A. Another anomaly is located on the west end of line 96B. This latter feature is part of a topographically induced trend but is anomalous in its' increased amplitude.

SUMMARY AND CONCLUSIONS

In November, 1982 Western Geophysical Aero DAta Ltd. flew a regional airborne magnetometer and VLF-electromagnetometer survey in the Tillicum Mountain area. That portion of the survey which pertains to the Braemar Resources Corporation holdings has been reviewed to assist the geological mapping and help direct future exploration.

The magnetic data delineates the east-west trending contact between the Goat Canyon Stock and Milford Group metasediments along the northern claim boundaries. Minor conductivity increases are also associated with this feature. The magnetic data suggests the metasedimentary sequence is relatively thin up to 1 kilometre south of this contact and that intrusive rocks approach very near to the surface in this area.

Faults can be interpreted in three possible locations on the basis of the magnetic data. One trends east-west and follows Snow Creek. The other two lie within the Au 3 claim and strike north-south and northeast-southwest, respectively. The north-south lineament is flanked by a number of closed magnetic highs and minor conductivity anomalies. The high and low magnetic trends in this area intersect each other at various angles and may be reflecting complex fault patterns. However, the G.S.C. indicates the Milford Group contacts the Nemo Lakes Stock in this area. Although the magnetic field intensity contours do not follow the contact delineated by the G.S.C., the magnetic highs observed may be reflections of higher magnetic susceptibility intrusive rocks.

RECOMMENDATIONS

The most interesting geophysical responses are observed on the Au 3 claim. Although the terrain is steep and may be affecting the magnetic and VLF-electromagnetic measurements, the responses are anomalous and warrant ground investigation. Initial followup should include geological examination of the high magnetic and high conductivity features to identify the geological setting. A few lines of ground reconnaissance geophysics may be necessary to precisely locate the targets.

The weak VLF-EM anomaly located on line 90 near Snow Creek should also be investigated by normal ground exploration techniques. These areas recommended for ground investigation are outlined on the interpretation map, Figure 2.

Respectfully submitted

E. Trent Pezzot, B.Sc., Geophysicist

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA GLEN E. WHITE

Glen E. White, B.Sc., P.Eng.
Consulting Geophysicist

INSTRUMENT SPECIFICATIONS

BARRINGER AIRBORNE MAGNETOMETER

MODEL:	Nimbin M-123
TYPE:	Proton Precession
RANGE:	20,000 to 100,000 gammas
ACCURACY:	± 1 gamma at 24 V d.c.
SENSITIVITY:	1 gamma throughout range
CYCLE RATES:	
Continuous	0.6, 0.8, 1.2 and 1.9 seconds
Automatic	2 seconds to 99 minutes in 1 second steps
Manual	Pushbutton single cycling at 1.9 seconds
External	Actuated by a 2.5 to 12 volt pulse longer than 1 millisecond.
OUTPUTS:	
Analogue	0 to 99 gammas or 0 to 990 gammas - automatic stepping
Visual	5 digit numeric display directly in gammas
EXTERNAL OUTPUTS:	
Analogue	2 channels, 0 to 99 gammas or 0 to 990 gammas at 1 m.a. or 1 volt full scale deflection.
Digital	BCD 1, 2, 4, 8 code, TTL compatible.
SIZE:	Instrument set in console 30 cm X 10 cm X 25 cm
WEIGHT:	3.5 Kg
POWER REQUIREMENTS:	12 to 30 volts dc, 60 to 200 milliamps maximum.
DETECTOR:	Noise cancelling torroidal coil installed in airfoil.

Instrument Specifications

SABRE AIRBORNE VLF SYSTEM

Source of Primary Field:	VLF radio stations in the frequency range of 14 KH_z to 30 KH_z.
Type of Measurement:	- Horizontal field strength
Number of Channels:	- Two; Seattle, Washington at 18.6 KH_z
	- Annapolis, Maryland at 21.4 KH_z
Type of Sensor:	- Two ferrite antennae arrays, one for each channel, mounted in magnetometer bird.
Output:	- 0 - 100 mV displayed on two analogue meters (one for each channel)
	- recorder output posts mounted on rear of instrument panel
Power Supply:	- Eight alkaline 'AA' cells in main instrument case (life 100 hours)
	- Two 9-volt alkaline transistor batteries in bird (life 300 hours)
Instrument Console:	- Dimensions - 30 cm x 10 cm x 25 cm
	- Weight - 3.5 Kg.

INSTRUMENT SPECIFICATIONS

FLIGHT PATH RECOVERY SYSTEM

i) T.V. Camera

Model: RCA TC2055 Vidicon
Power Supply: 12 volt dc
Lens: variable, selected on basis of expected terrain clearance
Mounting: Gimbal and shock mounted to housing - housing bolted to helicopter skid

ii) Video Recorder

Model: Sony SLO - 340
Power Supply: 12 volt dc / 120 volt AC (60Hz)
Tape: Betamex ½" video cassette - optional length
Dimensions: 30 cm X 13 cm X 35 cm
Weight: 8.8 Kg
Audio Input: Microphone in - 60 db low impedance microphone
Video Input: 1.0 volt P-P, 75Ω unbalanced, sync negative from camera

iii) Altimeter

Model: KING KRA-10A Radar Altimeter
Power Supply: 27.5 volts dc
Output: 0-25 volt (1 volt /1000 feet) dc signal to analogue meter, 0-10 v (4mv/ft) analogue signal to microprocessor
Mounting: fixed to T.V. camera housing, attached to helicopter skid

INSTRUMENT SPECIFICATIONS

DATA RECORDING SYSTEM

i) Chart Recorder

Type: Esterline Angus Miniservo III Bench AC Ammeter - Voltmeter Power Recorder
Model: MS 413 B
Specification: S-22719, 3-pen servo recorder
Amplifiers: Three independent isolated DC amplifiers (1 per channel) providing range of acceptable input signals
Chart: 10 cm calibrated width 2-fold chart
Chart Drive: Multispeed stepper motor chart drive, Type D850, with speeds of 2, 5, 10, 15, 30 and 60 cm/hr. and cm/min.
Controls: Separate front mounted slide switches for power on-off, chart drive on-off, chart speed cm/hr - cm/min. Six position chart speed selector. Individual front zero controls for each channel.
Power Requirements: 115/230 volts AC at 50/60 Hz (Approximately 30 VA)
Writing System: Disposable fibre tipped ink cartridge (variable colors)
Dimensions: 38.6 cm X 16.5 cm X 43.2 cm
Weight: 9.3 Kg

ii) Digital Video Recording System

Type: L.M. Microcontrols Ltd. Microprocessor Control Data Acquisition System
Model: DADG - 68
Power Requirements: 10-14 volts dc, Maximum 2 amps
Input Signal: 3, 0-100 mvolt dc signals
1, 0-25 volt dc signal
Microprocessor: Motorola MC-6800
CRT Controller: Motorola MC-6845
Character Generator: Motorola MCM-6670
Analogue/Digital Convertor: Intersil 7109
Multiplexer: Intersil IH 6208
Digital Clock: National MM 5318 chip
9 volt internal rechargeable nickle-cadmium battery
Fiducial Generator: Internally variable time set controls relay contact and audio output
Dimensions: 30 cm X 30 cm X 13 cm
Weight: 3 Kg

DATA RECORDING SYSTEM (CON'T)

iii) Digital Magnetic Tape

Type: Hewlett Packard cartridge tape unit
Model: 9875A
Power Requirements: 24 volt d.c.
Data Format: HP's Standard Interchange Format (SIF)
Tape Cartridge: HP 98200A 225K byte cartridge compatible with HP Series 9800 desktop computers.
Tape Drive: Dual tape drives providing up to 8 hours continual recording time.
Controller: Internal micro-computer provides 23 built in commands.
: External computer generated commands.

COST BREAKDOWN

1) Survey Date- November 1982

II) Personnel:

Survey: E.T.Pezzot, Geophysicist-operator
J. Behenna, operator-navigator
M. McDermott, navigator

Data Processing: E.T.Pezzot, Geophysicist
M. McDermott,
N. Porter

Report: E.T. Pezzot, Interpretation,
Glen E.White, Supervisor

III) Project Fee:

This survey was processed by agreement for an all inclusive fee of $3,800.00 which includes an overall proportion helicopter charges, computer processing, report and drafting for an effective fee of $50/line kilometre.

STATEMENT OF QUALIFICATIONS

NAME:	PEZZOT, E. Trent
PROFESSION:	Geophysicist - Geologist
EDUCATION:	University of British Columbia - B.Sc. - Honors Geophysics and Geology
PROFESSIONAL ASSOCIATIONS:	Society of Exploration Geophysicist
EXPERIENCE:	Three years undergraduate work in geology - Geological Survey of Canada, consultants.
	Three years Petroleum Geophysicist, Senior Grade, Amoco Canada Petroleum Co. Ltd.
	Two years consulting geophysicist, Consulting geologist - B.C., Alberta, Saskatchewan, N.W.T., Yukon, western U.S.A.
	Three years geophysicist with Glen E. White Geophysical Consulting & Services Ltd.

STATEMENT OF QUALIFICATIONS

NAME:	WHITE, Glen E., P.Eng.
PROFESSION:	Geophysicist
EDUCATION:	B.Sc. Geophysicist - Geology University of British Columbia.
PROFESSIONAL ASSOCIATIONS:	Registered Professional Engineer, Province of British Columbia.
	Associate member of Society of Exploration Geophysicists.
	Past President of B.C. Society of Mining Geophysicists.
EXPERIENCE:	Pre-Graduate experience in Geology - Geochemistry - Geophysics with Anaconda American Brass.
	Two years Mining Geophysicist with Sulmac Exploration Ltd. and Airborne Geophysics with Spartan Air Services Ltd.
	One year Mining Geophysicist and Technical Sales Manager in the Pacific north-west for W.P. McGill and Associates.
	Two years Mining Geophysicist and supervisor Airborne and Ground Geophysical Divisions with Geo-X Surveys Ltd.
	Two years Chief Geophysicist Tri-Con Exploration Surveys Ltd.
	Twelve years Consulting Geophysicist.
	Active experience in all Geologic provinces of Canada.

INCA 1, 2970 (9)

OLGA 1, 3264 (10)

OLGA, 3114 (9)

RUZA, 3300

AUG, 3262 (10)

AREA OF INTEREST

AREA OF INTEREST

GENERAL AREA OF INTEREST

LINE 85

LINE 86

LINE 86B

LINE 87

LINE 89

LINE 90

LINE 91B

LINE 92A

LINE 93A

LINE 94A

LINE 95A

LINE 96A

LINE 97A

LINE 97B

LINE 98A

LINE 98B

LINE 99A

LINE 99B

LINE 100A

LINE 100B

LINE 101

LINE 102

LINE 103

Increased conductivity on lines 85 & 86B

DIRECTION TO SEATTLE

DIRECTION TO ANAHOLIS

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,206

KEY

INSTRUMENT: Barringer M-123 Magnetometer

Data corrected for diurnal variations

Base value= 57000 gammas

Contour interval= 25 gammas

Roads

Claim boundary

Claim post

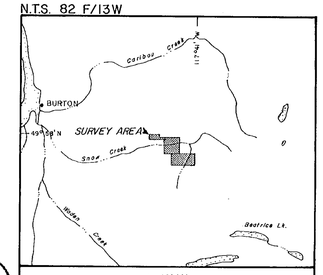
Magnetic High

Magnetic Low

Inferred Fault

VLF-EM Conductor

N.T.S. 82 F/13W



1:250,000
LOCATION MAP

METRES

0 100 200 300 400 500 600 700 800

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
GLEN E. WHITE

Western Geophysical Aero Data Ltd.

To accompany the Geophysical Report on the Tillicum Gold Area

BRAEMAR RESOURCES CORP.
TILLICUM GOLD AREA
MAGNETIC CONTOUR MAP
TOTAL FIELD INTENSITY (gammas)

DATE: NOV/82

FIG.: 2

INCA 1, 3070(9)

OLGA, 3264(10)

OLGA, 3114(9)

RUZA, 3300

AUG, 3262(10)

LINE 85
LINE 86
LINE 86A
LINE 87
LINE 89
LINE 90
LINE 91B
LINE 92A
LINE 93A
LINE 94A
LINE 95A
LINE 96A
LINE 97A
LINE 97B
LINE 98B
LINE 98A
LINE 99A
LINE 99B
LINE 100B
LINE 100A
LINE 101
LINE 102
LINE 103

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,206

KEY

INSTRUMENT: Sabre Total Field Intensity VLF-EM

Transmitter Station, Seattle (24.8 Khz)

Vertical Scale, 10%/cm.

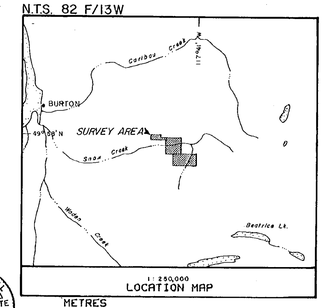
Data corrected for long period terrain effects

Roads

Claim boundary

Claim post

N.T.S. 82 F/13W



METRES
0 100 200 300 400 500 600 700 800

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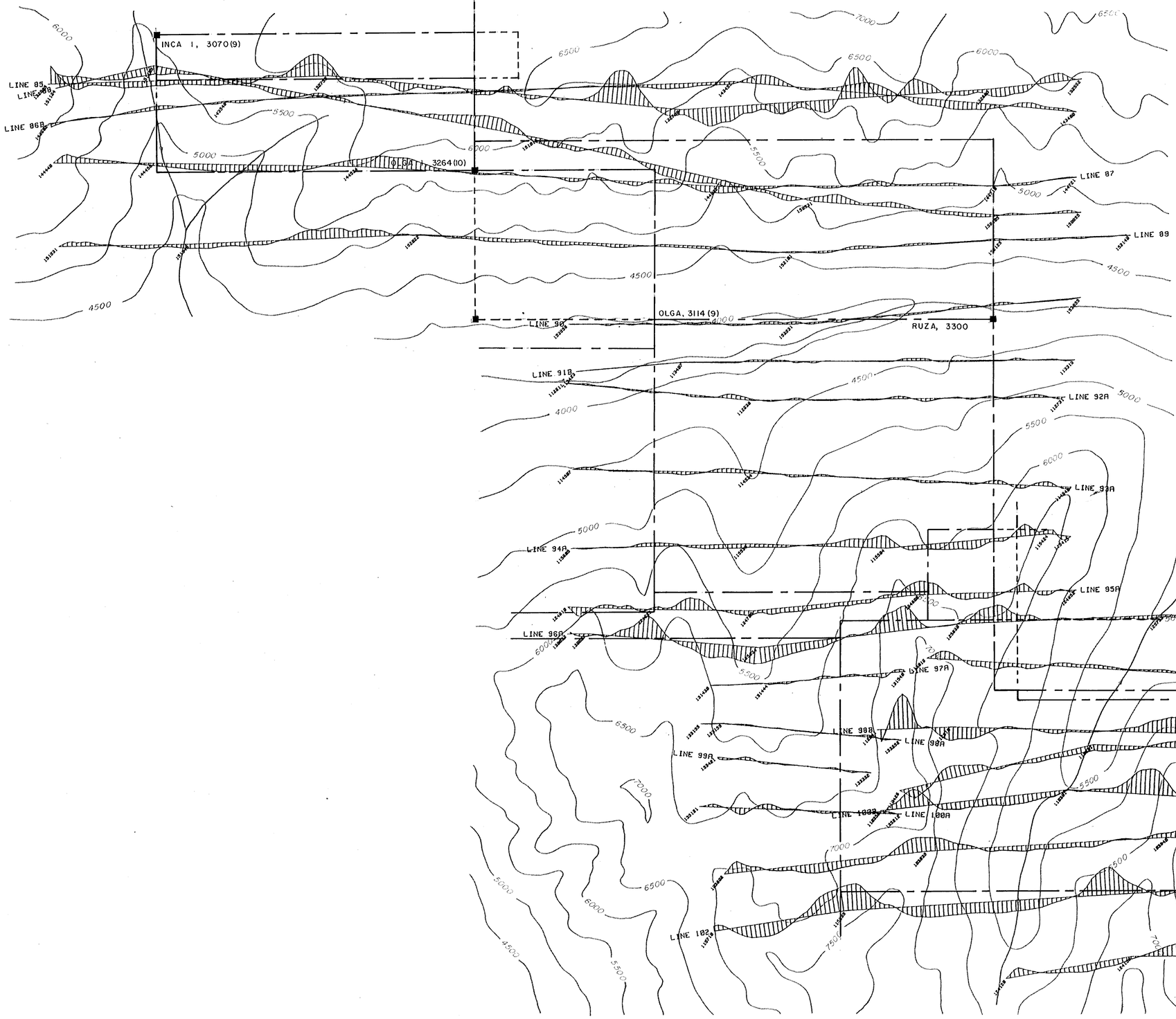
To accompany the Geophysical Report on the Tillicum Gold Area

BRAEMAR RESOURCES CORP.
TILLICUM GOLD AREA
VLF-EM PROFILES (SEATTLE)
TOTAL FIELD INTENSITY

DATE: NOV/82

FIG.: 3



KEY

INSTRUMENT: Sabre Total Field Intensity VLF-EM

Transmitter Station, Annapolis (21.4 Khz)

Vertical Scale, 10%/cm.

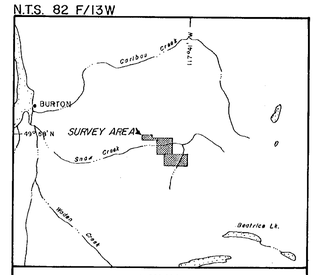
Data corrected for long period terrain effects

= = = Roads

— — — Claim boundary

■ Claim post

N.T.S. 82 F/13W



1:250,000
LOCATION MAP

METRES
0 100 200 300 400 500 600 700 800

PROFESSIONAL ENGINEER PROVINCE OF BRITISH COLUMBIA GLEN E. WHITE

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,206

Western Geophysical Aero Data Ltd.

To accompany the Geophysical Report on the Tillicum Gold Area

BRAEMAR RESOURCES CORP.
TILLICUM GOLD AREA
VLF-EM PROFILES (ANNAPOLIS)
TOTAL FIELD INTENSITY

DATE: NOV/82 | FIG.: 4

INCA 1, 3070(9)

OLGA 1, 3264(10)

OLGA, 3114 (9)

RUZA, 3300

AUG, 3262(10)

LINE 85

LINE 86

LINE 86B

LINE 87

LINE 89

LINE 90

LINE 91B

LINE 92A

LINE 93A

LINE 94A

LINE 95A

LINE 96A

LINE 97A

LINE 97B

LINE 98A

LINE 98B

LINE 99A

LINE 99B

LINE 100A

LINE 100B

LINE 101

LINE 102

LINE 103

6000 6500 7000 5500 5000 4500 4000

DIRECTION TO SEATTLE

DIRECTION TO ANNAPOLIS

GEOLOGICAL BRANCH
ASSESSMENT REPORT

11,206

KEY

INSTRUMENTS: Sabre Total Field Intensity VLF-EMS

Transmitter Station #1, Seattle (24.8 Khz)

Transmitter Station #2, Annapolis (21.4 Khz)

Vertical Scale, 5"/cm.

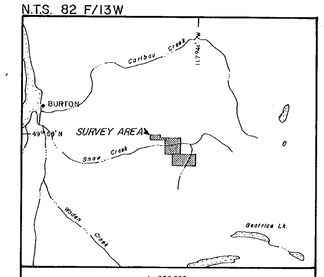
Data corrected for long period terrain effects

= = = Roads

— - — Claim boundary

■ Claim post

N.T.S. 82 F/13W



1: 250,000
LOCATION MAP

METRES
0 100 200 300 400 500 600 700 800

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
GLEN E. WHITE

Western Geophysical Aero Data Ltd.

To accompany the Geophysical Report on the Tillicum Gold Area

BRAEMAR RESOURCES CORP.
TILLICUM GOLD AREA
VLF-EM DIFFERENCE PROFILES
(SEATTLE - ANNAPOLIS)

DATE: NOV/82

FIG.: 5