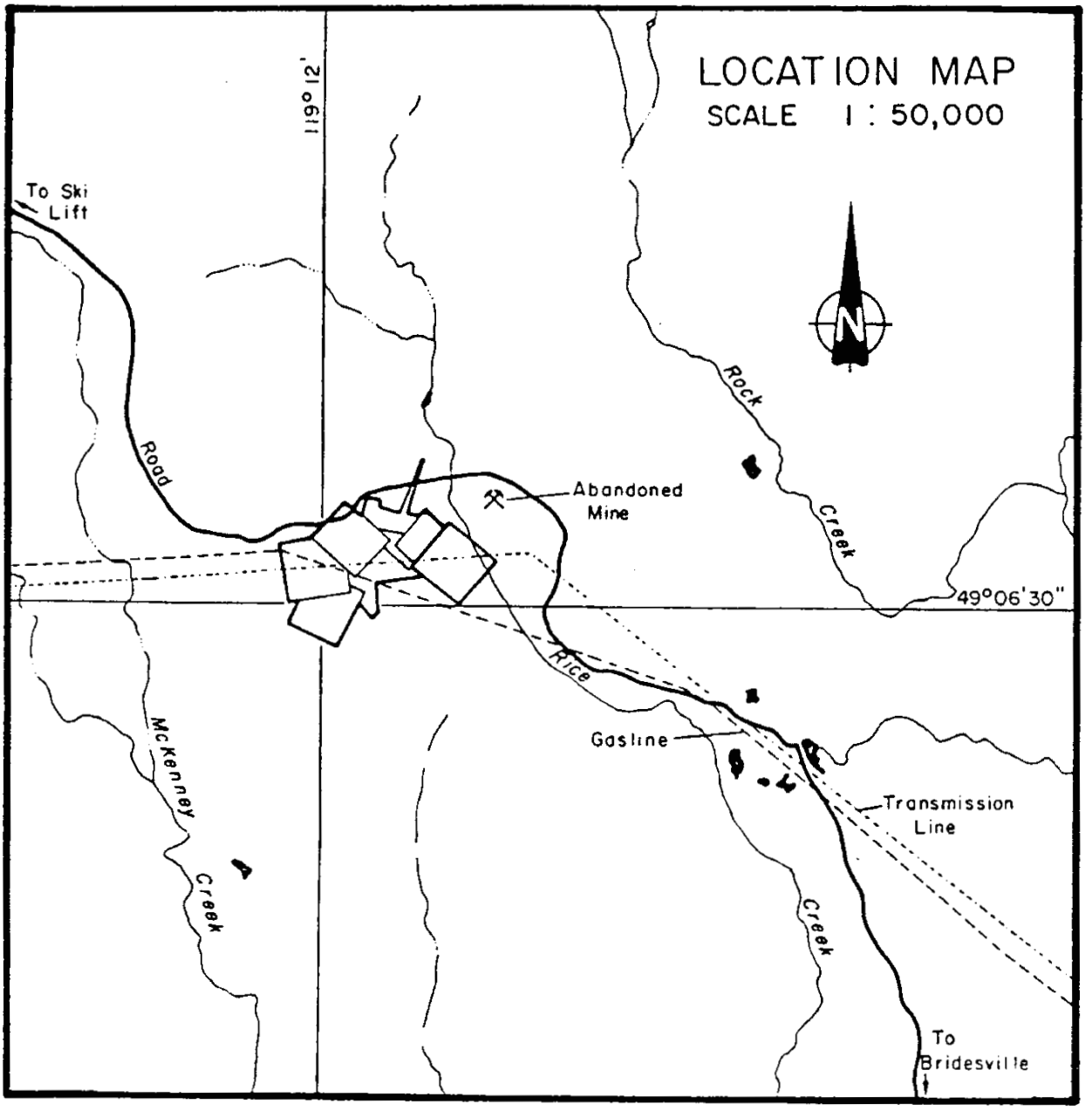
McQUILLAN GOLD LTD.
GEOPHYSICAL REPORT
MAGNETOMETER and ELECTROMAGNETOMETER SURVEYS

Camp McKinney claim group, Bridesville area,
Greenwood Mining Division, B. C.
Lat. 49°06'N Long. 119°12'W N.T.S. 82E/3E

AUTHOR: Glen E. White, B.Sc., P. Eng.
DATE OF WORK: May 20 - June 1, 1980

DATE OF REPORT: June 20, 1980

MINERAL RESOURCES BRANCH
ASSESSMENT REPORT
8153
NO.




# McQUILLAN GOLD LTD.

## CAMP McKENNEY

GREENWOOD MINING DIVISION - B.C.

LOCATION AND CLAIMS MAP

NTS 82-M-3 East

Glen E. Wist
geological consulting
services ltd.

FIG. I.

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## INTRODUCTION

From May 20 to June 1, 1980, Glen E. White Geophysical Consulting & Services Ltd. conducted a program of ground magnetometer and V.L.F. electromagnetometer surveying over an area of old gold workings in the Camp McKinney area, Greenwood M. D., B. C.

The geophysical surveys were undertaken to see if they could assist in locating any gold-bearing structures.

## PROPERTY

The McQuillan Gold Ltd. property consists of seven reverted crown grant mineral claims Sailor #766, Rover Fr. #769, Caribou Fr. #925, Snowshoe #1269, Toledo #1270 and Diamond #1455. A property report by Don Tully, P. Eng., gives a full description of the claims including their crown grant legal survey information.

## LOCATION AND ACCESS

The mineral claims are located six miles along the road to the Mt. Baldy Ski Resort from Bridesville, B. C. Latitude 49°06'N, Longitude 119°12'W, N.T.S. 82 E/3E.

Access is by regular motor vehicle.

## GENERAL GEOLOGY

The Camp McKinney auriferous ore is associated with quartz-veining along northwest trending structures which dip steeply to the north. The host rocks consist of micaceous meta-sediments and volcanics of Anarchist series of late Paleozoic age. Dykes and intrusive apophyses likely belong to a phase of the Nelson Batholith.

The veins reportedly consisted of quartz-bearing pyrite, with some galenaand zinc blende. The wall rock consists of greenstone heavily altered to ankeritic carbonates and chlorite.

## SURVEY GRID

The survey grid consists of north-south lines spaced 50 m apart, numbered at 25 m intervals. Some 32 km of survey grid was established.

## MAGNETOMETER SURVEY

The magnetometer survey was conducted using a Scintrex MF-1 Fluxgate magnetometer. This instrument measures the vertical component of the earth's magnetic field to an accuracy of 10 gammas. Corrections for diurnal variation were made by tying into previously established base stations at intervals not exceeding one and one half hours. Readings were taken at 25 m intervals along the traverse lines.

## ELECTROMAGNETOMETER SURVEY

This survey was conducted using a Ronka EM-16 V.L.F. electromagnetometer. This instrument acts as a receiver only. It utilizes the primary electromagnetic fields generated by VLF marine communication stations. These stations operate at a frequency between 15 - 25 KHZ, and have a vertical antenna-current resulting in a horizontal primary field. Thus, this VLF-EM measures the dip-angle of the secondary field induced in a conductor.

For maximum coupling, a transmitter station located in the same direction as the geological strike should be selected, since the direction of the horizontal electro-magnetic field is perpendicular to the direction of the transmitting station.

Readings were taken at 25 m intervals and the data filtered in the field by the operator as described by D. C. Fraser, Geophysics Vol. 34, No. 6 (December 1969). The advantage of this method is that it removes the dc and attenuates long spatial wave lengths to increase resolution of local anomalies, and phase shifts the dip-angle data by 90 degrees so that crossovers and inflections will be transformed into peaks to yield contourable quantities.

## DISCUSSION OF RESULTS

It is interesting to note how exploration of many of the old mining properties have been adversely affected by culture. This property is no exception as it is traversed by a gasline and a regional power transmission line. The VLF electromagnetometer survey, Figure 2, clearly shows these two features. Likewise the filtered dip angle highs from line 950W to 1200W which are along the road to Mt. Baldy may possibly be due to a culvert or telephone line. Experience with previous surveys has indicated that transmission lines will energize fault and shear zones in proximity to the line and thus create superficial anomalies. The recorded vein systems strike northeasterly. there are no northeasterly trends which can be attributed to a mineralized vein system.

The magnetometer survey was also beset with problems from the electromagnetic fluctuations of the powerline. A number of herringbone features were found in the data due to a noisy base station reading. These were corrected except for line 100W which is obviously in error. In general, no definite magnetic trends were obtained. This is typical of the greensones of the Anarchist series of rocks. A number of small magnetic lows were obtained which may possibly relate to zones of structural weakness or alteration.

## CONCLUSION AND RECOMMENDATIONS

During the month of May 1980, a program consisting of linecutting, electromagnetometer and magnetometer surveys was completed on behalf of McQuillan Gold Ltd. on their Camp McKinney property.

The geophysical surveys did not detect any magnetic or electromagnetic features that would assist future mineral exploration. It is considered that since this property is beset with culteral features that affect most geophysical surveys, further work should place an emphasis on soil geochemistry, rock geochemistry and detail geological mapping.

Respectfully submitted,
GLEN E. WHITE GEOPHYSICAL
CONSULTING & SERVICES LTD.

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

# A P P E N D I X

## Instrument Specifications

### MAGNETOMETER

A. Instrument

(a) Type - Fluxgate

(b) Make - Scintrex MF-1

B. Specifications

(a) Measurement - Vertical Magnetic Field

(b) Range - ± 100 K gammas in 5 ranges

(c) Sensitivity - Maximum 20 gammas per scale division

(d) Accuracy - ± 10 gammas

C. Survey Procedures

(a) Method - One and one half hour loops

(b) Corrections - (i) Base

(ii) Diurnal

(c) Station relationship - each station read for intensity of vertical magnetic field.

# A P P E N D I X

## Instrument Specifications

### ELECTROMAGNETOMETER

**A. Instrument**

(a) Type - Geonics VLF - EM
(b) Make - Ronka EM 16

**B. Specifications**

Measurement -
(i) Utilizes primary fields generated by VLF marine communication stations measures the vertical field components in terns of horizontal field present.

(ii) Frequency range 15-25 KHZ

(iii) Range of measurement - in phase $\pm$ 150% or $\pm$ 90°
- quadrature $\pm$ 40%

(iv) Method of reading - null detection by earphone, real and quadrature from mechanical dials.

(v) Accuracy - $\pm$ 1% resolution

**C. Survey Procedures**

Method (a) Select closest VLF station perpendicular to traverse lines.
(b) In-phase dial measures degree of tilt from vertical position.
(c) Quadrature dial calibrated in percent - null.
(d) Station plot - plot values read at station surveyed.
(e) Manually filter dip-angle data.

## STATEMENT OF QUALIFICATIONS

**NAME:** WHITE, Glen E., P. Eng.

**PROFESSION:** Geophysicist

**EDUCATION:** B.Sc. Geophysics - 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.

Nine years Consulting Geophysicist.

Active experience in all Geologic provinces of Canada.

## COST BREAKDOWN

| Personnel | Dates Worked | Wages | Total |
|---|---|---|---|
| Clive Ashworth | May 1-8/80 | $175/day | $1400.00 |
| Brent Schorn | " | $125/day | 1000.00 |
| Grant Schorn | May 20-June 1/80 | $110/day | 1430.00 |
| Braham Innes | " | $135/day | 1755.00 |

| | |
|---|---|
| Meals and accomodations - 42 man days @ $35 | 1470.00 |
| Vehicle lease all inclusive | 1260.00 |
| Instrument lease, mag. and EM | 650.00 |
| Materials | 90.00 |
| Drafting | 250.00 |
| Interpretation and reports | 800.00 |
| Total | $10,105.00 |

119°12'

1500W 1450W 1400W 1350W 1300W 1250W 1200W 1150W 1100W 1050W 1000W 950W 900W 850W 800W 750W 700W 650W 600W 550W 500W 450W 400W 350W 300W 250W 200W 150W 100W 50W 00

500 N 450N 400N 350N 300N 250N 200N 150 N 100N 50N 00 BASE LINE 50S 100 S 150 S 200S 250 S 300S 350S 400S 450S 500S 550S 600S

To Bridesville

To Ski Lift

OLD WORKINGS

Rover Fr L 769

Sailor L 766

Cariboo Fr L 925

Kamloops L 275

DDH

DDH

GASLINE

Snow Shoe L1269

Minnie-Ha-Ha (J) L680 N

TRANSMISSION LINE

Diamond L 1445

Toledo L1270

RICE CREEK

GASLINE

49° 06' 30"

True North

Mag North

-23°30'

FILTERED DIP ANGLE

%
300
200
100
50
25
0
-25
-50
-100

Dip angle % — 72° — 20° — Filtered dip angle %

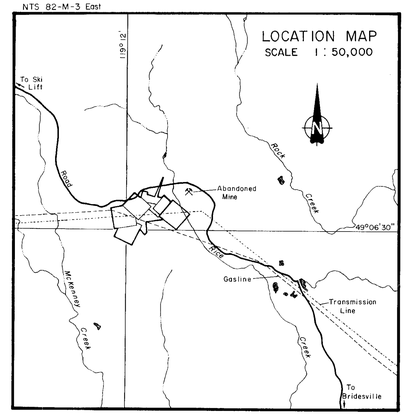
INSTRUMENT : Ronka EM-16 Electromagnetometer

Road

Trench

NTS 82-M-3 East

LOCATION MAP
SCALE 1 : 50,000




MINISTRY OF ENERGY, MINES & PETROLEUM RESOURCES
NO. 8153

100 0 100 200
SCALE 1:2500 (Metres)

# McQUILLAN GOLD LTD.
## CAMP McKENNEY
GREENWOOD MINING DIVISION - B.C.

## VLF - ELECTROMAGNETOMETER SURVEY - FILTERED DIP ANGLE %

Glen E. White geophysical consulting services ltd.

| | |
|---|---|
| INTERPRETED BY: | G.E.W. |
| DRAWN BY: | |
| CHECKED BY: | |
| DATE: | JUNE 16, 1980 |
| FIG. No: | 2 |

119°12'

1500W 1450W 1400W 1350W 1300W 1250W 1200W 1150W 1100W 1050W 1000W 950W 900W 850W 800W 750W 700W 650W 600W 550W 500W 450W 400W 350W 300W 250W 200W 150W 100W 50W 00

500 N
450N
400N
350N
300N
250N
200N
150N
100N
50N
00 BASE LINE
50S
100 S
150 S
200S
250 S
300S
350S
400S
450S
500S
550S
600S

To Bridesville

To Ski Lift

OLD WORKINGS

Rover Fr. L 769

Sailor L 766

Cariboo Fr L 925

Kamloops L 275

DDH

DDH

Minnie-Ha-Ha (J) L680

GASLINE

Snow Shoe L1269

TRANSMISSION LINE

Diamond L 1445

Toledo L 1270

GASLINE

49° 06' 30"

True North

Mag North

23°30'

VERTICAL MAGNETIC INTENSITY
GAMMAS

5000
2000
1500
1000
750
500

INSTRUMENT : Scintrex MF-1 Fluxgate Magnetometer

Road
Trench

NTS 82-M-3 East

LOCATION MAP
SCALE 1 : 50,000

119°12'

To Ski Lift

Abandoned Mine

49°06'30"

Gasline

Transmission Line

To Bridesville

Boss Creek

McKenney Creek

Rice Creek

MINING RECORDER'S BRANCH
ASSESSMENT REPORT

8153
NO.

100 0 100 200
SCALE 1:2500 (Metres)

# McQUILLAN GOLD LTD.
## CAMP McKENNEY
GREENWOOD MINING DIVISION - B.C.

## VERTICAL MAGNETIC INTENSITY
## (GAMMAS)

Glen E. White geophysical consulting services ltd.

| | |
|---|---|
| INTERPRETED BY: | G.E.W. |
| DRAWN BY: | [illegible] |
| CHECKED BY: | |
| DATE: | JUNE 16, 1980 |
| FIG. No.: | 3 |