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| TYPE OF WORK: | Road Building; Linecutting; Geophysical Surveys |

| REPORT FILED UNDER: | Cominco Ltd |

| DATE PERFORMED: | August 9 - September 4, 1987 |
| DATE FILED: | February 16, 1988 |

| LOCATION: | AREA: Mt. Bronson |

| LAT.: | 64°00'N |
| LONG.: | 139°30'W |

| VALUE $: | 29,000.00 |

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EXPLORATION

NTS: 115-0/14

REPORT ON ROADBUILDING, LINECUTTING AND GEOPHYSICAL SURVEYS ON THE BRONSON PROPERTY DAWSON M.D., Y.T.
- ASSESSMENT REPORT -

Latitude : 64°00'N
Longitude : 139°30'W

Claims Covered: BRONSON 1-10 and BRO 20, 27, 28, 29, 31 and 33

Owner and Operator : COMINCO LTD.

Dates of Work : August 4 - September 4, 1987

JANUARY 1988

J. KLEIN
I.A. PATERTON

092093
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EXHIBIT A  STATEMENT OF EXPENDITURES
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FIGURE 1 Location Map, Scale 1" = 80 miles
FIGURE 2 Location Map Showing Claim Block, Scale 1:50,000

PLATE 329-87-1 Base and Claim Map
  -2 Magnetometer Results
  -3 VLF-EM Fraser Filter Results
  -4 Induced Polarization, Chargeability of n=3
  -6 to 11 Pseudosections for Lines 22N to 2N
INTRODUCTION

Roadbuilding, linecutting and geophysical surveys were carried out over parts of the Bronson property between August 4th, 1987 and September 4th, 1987.

The geophysical surveys included 10.3 kms. of Induced Polarization/Resistivity/Magnetics (I.P./res./Mag.) and Very Low Frequency-Electromagnetic (VLF-EM) techniques and were carried out by Peter E. Walcott and Associates Ltd. Roadbuilding and road improvement (7.9 kms) was carried out by Gillespie Equipment Rentals Ltd. of Dawson City, Y.T. Linecutting (13.8 kms) was carried out under contract by Gordon Clark and Associates of Whitehorse, Y.T.

The roadbuilding was carried out to enable 4-wheel drive access to the claim group. The linecutting and geophysical surveys were a follow-up on geological mapping, geochemical surveys and trenching. The purpose of the surveys was to delineate Ag-Au bearing sulphide targets.

This report describes the geophysical field procedures, presents the data collected and discusses the results. Locations of new roads and the linecutting are given in the included maps.

LOCATION AND ACCESS

The Bronson Property is located 11 km south of the city of Dawson on the northern flank of Mt. Bronson. A bush road provides access from Dawson.

GEOLGY

The property is underlain by deformed Klondike Schists. The summit of Mt. Bronson is composed of quartz-muscovite-feldspar schist. This unit is, in turn, underlain by quartz-muscovite schist and gneiss and an alternating sequence of quartz-eye and muscovite-feldspar-pyrite schists, muscovite pyritic quartzites and muscovite-chlorite-quartz-pyrite schists.
Pyrite is common in the schists and can constitute 7 or 8% of the rocks. Fresh pyrite is visible in the bed of Bryant Creek.

**ROADBUILDING**

A 4 x 4 access road was built to connect the Boulder Creek road with the Bronson Claim Group (Figure 2). This entailed 4.2 kms of roadbuilding outside the Bronson claims. Within the claims, 1.3 kms of road were built to access the area in the valley of Bryant Creek. This road switchbacked into the Creek valley via the slope to the northeast of the Creek (Plate 1). The road to the trenches on the southwest flank of Bryant Creek was improved (Plate 1). This road is 2.4 kms long. Problems were encountered with permafrost on the north facing slope beneath the summit of Mount Bronson.

The bulldozer work was carried out by Gillespie Equipment Rentals Ltd. of Dawson City. The work involved 80 hours of D8 bulldozer operation.

**LINECUTTING**

The linecutting was carried out by Gordon Clark and Associates from Whitehorse. A 2.5 km baseline was cut at 328° azimuth. Total length of cross lines was 11.3 kms (Plate 1). Pickets were erected at 25 m intervals on cross lines and 50 m along baseline. Slope corrections were carried out.

**GEOPHYSICAL SURVEYS**

*Induced Polarization/Resistivity*

A Huntex Mark IV receiver (set for 200 msecs. delay and 1,000 msecs. integrating time) was used in combination with a Phoenix IPT-1 motor generator/transmitter system. Readings were taken in the time domain mode using a 2 seconds ON/OFF alternating square wave signal. Chargeability values are given in units of milliseconds (msecs.).

A dipole-dipole array was used with an "a" spacing of 25 metres and "n" separations of 1 to 4.

The apparent resistivity values are given in units of ohmmeters and are calculated from the equation:

$$\rho_a = \frac{V \cdot K_i}{I}$$

where V is the voltage across the potential dipoles during the current ON period (I), and Ki is a geometrical factor depending on the "a" spacing and "n" separation.
\[ K_i = \sum_{n=1}^{N} a (n+1)(n+2) \quad i=1,2, \text{ etc.} \]

**Magnetics**

A GEM-GSM8 total field proton precession magnetometer was used for the magnetic surveying together with a matched self-recording base station. A base level of 57,000 nT was used. The results are presented in contour form using 25 nT intervals.

**VLF-EM**

A Geonics EM16 receiver reading from the Seattle transmitter (NLK at 24.8 kHz) was used for the VLF-EM surveying. The operator faced west while taking the dip angle measurements. The station spacing was 25 metres. The dip angle readings have been Fraser filtered and are presented in that format.

**PRESENTATION OF DATA**

The results of the geophysical surveys are shown as follows on plans using a scale of 1:5,000 and on pseudosections with a scale of 1:1,250:

- **Fig. 1** Location Map, Scale 1"=80 miles
- **Fig. 2** Location Map showing claim block, Scale 1:50,000
- **Plate 329-87-01** Base and Claim Map
  - 02 Magnetometer Results
  - 03 VLF-EM Fraser Filter Results
  - 04 Induced Polarization, Chargeability of n=3
  - 06 to 11 Pseudosections for Lines 22N to 2N

**DESCRIPTION OF RESULTS**

Resistivities (res.) vary over a wide range: from less than 500 ohmm to over 10,000 ohmm. This wide range is most likely attributable to several factors: variations in lithologies; permafrost, mainly on north facing slopes; weathering; alteration and local near-surface (= electrode contact) conditions.
The change in values, e.g., along Line 22N near 250E from 3,000 to 700 ohmm levels, is most likely reflecting variations in permafrost. Apparent layering in the resistivities, e.g., Line 14N, west portion, could also reflect near-surface and permafrost conditions suggesting the latter to be only a few tens of metres thick.

Only a few, rather well-defined res. lows are seen, e.g., Line 14N, Station 175-225E correlates with creeks. This could reflect, in turn, a local fault zone, even though no VLF-EM response was detected. (Lack of a VLF-EM response here could be due to minimal coupling with the transmitting station.) A low along Line 8N-350E, on the other hand, correlates with a weak VLF-EM response. This could reflect a fault oriented in a different direction.

Locally, there is a cross correlation between I.P. and res. values, e.g., Line 18N-285E indicating an I.P. high/res. low (some 50 m west of a well defined VLF-EM feature). (This I.P./res. feature is also seen along Line 16N-285E.)

In general, however, not much can be deduced from the resistivity values.

The VLF-EM shows a strong topographic effect. Moderate strong, positive, dip angles are measured near the west end of Lines 2N to 14N. These dips gradually drop going east but rather strongly reverse their sign near Bryant Creek. 70% peak to peak values (reversed crossovers) are measured along several lines. These reversed crossovers are filtered out using the Fraser filter. The Fraser filter conductors near the west end of Lines 2N to 14N are as the reversed crossovers near Bryant Creek caused by topography related current flows and do not reflect targets of interest.

The broad VLF-EM zone located towards the east end of Lines 10N to 16N has, no doubt, a similar source.

A few strong VLF-EM conductors were detected. Conductors on Lines 18N-325E and 22N-285E flank an I.P. zone, while the conductor at Line 14N-200E correlates directly with a strong I.P. zone.

The magnetic values range from a low of 780 nT to a high of 976 nT. Some mag. lows correlate with I.P. highs, e.g., at Lines 2N-150W, 4N-25E and 6N-200W. In other situations, mag. highs are closely associated with I.P. highs, e.g., Lines 20N-325E and 22N-250E (this mag. high is closely parallel to a VLF-EM conductor).

Pseudo layering is clearly shown in the I.P. sections. This, no doubt, reflects local weathering with fresh sulphides present at depth, e.g., 25-40 metres. For this reason the n=3 results are emphasized rather than the n=1 or 2 data.

The I.P. values, in general, show a good line to line correlation. Low values were detected east of Bryant Creek as is clearly shown on Plate 4. An I.P. high runs from Line 22N (open in that direction) to Line 14N with an additional lobe towards the west along Lines 12N and 14N. This zone has
locally flanking mag. and a VLF-EM response. The lobe correlates with a res. low and weak VLF-EM (Line 14N-225E). These anomalies could be underlain by metasediments.

Further to the south, two broad, parallel I.P. highs are detected (B and C).

CONCLUSIONS AND RECOMMENDATIONS

A combined I.P./res., mag. and VLF-EM survey was successful in delineating several I.P. anomalies. Portions of these show res. and mag. lows or are parallel to mag. highs or VLF-EM conductors.

The I.P. responses could reflect pyrite and possibly minor base metals. The res., mag. and VLF results do not show any specific anomalies on their own.

It is recommended to correlate the geophysical results with the geology and other data before trenching or drill testing.

Report by: J. Klein
Chief Geophysicist
Cominco Ltd.

Report by: I. A. Paterson
Project Geologist
Cominco Ltd.

Approved for Release by: W. J. Wolfe
Manager, Exploration
Western Canada
Cominco Ltd.

Distribution:
Minning Recorder (2)
Western District (1)
Administration (1)
Geophysics Files (1)
EXHIBIT "A"

STATEMENT OF EXPENDITURES
ON THE BRONSON PROPERTY

DAWSON M.D., Y.T.

For the period 4th August - 4th September, 1987

Contract Work:

Linecutting: 13.8 kms at $400/km. $ 5,520.00
performed by Gordon Clark and Assocs.

Roadbuilding: D8 - 80 hrs. at $160/hr. 12,800.00

Geophysics: 10.3 kms. of I.P., mag., VLF 23,747.35

Cominco Costs:

Salaries: I.A. Paterson 8 days at $300/day 2,400.00
J. Klein 4 days at $375/day 1,500.00
Covers supervision on property and reports

Drafting Costs 1,500.00

Domicile: 9 days at $80/day 720.00

Truck: 12 days at $50/day 600.00

Total $ 48,787.35

I. A. Paterson
Project Geologist

STATEMENT

I, IAN A. PATERSON of the City of Vancouver in the Province of British Columbia, make oath and say:

1. THAT I am employed as a project geologist by Cominco Ltd. and as such, have personal knowledge of the facts to which I hereinafter depose;

2. THAT included in this report and marked as Exhibit "A" is a true copy of expenditures incurred on a linecutting, roadbuilding and geophysical programme on the Bronson and Bro mineral claims;

3. THAT the said expenditures were incurred between the 4th of August and the 4th of September 1987 for the purpose of mineral exploration on the Bronson and Bro mineral claims.

I.A. Paterson
Project Geologist

Dated this ________ day of January, 1988
at Vancouver, British Columbia
EXHIBIT "C"

STATEMENT OF QUALIFICATIONS

I, IAN A. PATERSON, with business address at 700 - 409 Granville Street, Vancouver, British Columbia, do hereby certify that I have supervised the field work and have assessed and interpreted the data resulting from this linecutting, roadbuilding and geophysical programme on the Bronson and Bro mineral claims.

I ALSO CERTIFY THAT:

1. I graduated from the University of Aberdeen, Scotland with B.Sc. (Hons.) degree in 1967.

2. I graduated from the University of British Columbia with a Ph.D. degree in 1973.

3. I am a registered Professional Engineer of the Province of British Columbia, a Fellow of the Geological Association of Canada and a Member of the Canadian Institute of Mining and Metallurgy.

4. I have been engaged in my profession since my graduation in 1973.

5. I have been employed by Cominco Ltd. since 1974.

Respectfully Submitted:

[Signature]

I. A. Paterson
Project Geologist
EXHIBIT "C"

STATEMENT OF QUALIFICATIONS

I, JAN KLEIN, of 4371 Coventry Drive, in the Corporation of Richmond, in the Province of British Columbia, do hereby certify: -

1) THAT I graduated from the Technological University of Delft Netherlands in 1965 with a M.Sc. in Geophysics;

2) THAT I am a member of the Association of Professional Engineers of the Province of British Columbia, the Society of Exploration Geophysicists of America, and the British Columbia Geophysical Society;

3) THAT I have been practising my profession for the past twenty-three years.

4) THAT I have been employed by Cominco Ltd. since 1974.

Respectfully Submitted:

J. Klein, P.Eng.
Chief Geophysicist