3528

# REPORT ON GEOPHYSICAL SURVEYS OF THE AXEL CLAIM GROUPS

McLeese Lake Area, B.C.
Cariboo Mining Division
for
AXEL MINES LTD. (N.P.L.)

93B/9W

by

A. I. Betmanis, BASc. P.Eng.

REPORT ON

GEOPHYSICAL SURVEYS

of the

AXEL CLAIM GROUPS

McLeese Lake Area, B.C.
Cariboo Mining Division

for

AXEL MINES LTD. (N.P.L.)

by

A. I. Betmanis, BASc., P.Eng.

Claims : Axel #1 Group and Axel #2 Group.

Location : Surrounding Teakettle Lake
5 miles NW of Granite Mountain; 4 miles NE of Marguerite. Latitude 52°32'N, Longitude 122°20.5'W.

Dates : November 10, 1971 - January 28, 1972.

January 28, 1972
Vancouver, B.C.

GEOPHYSICAL ENGINEERING AND SURVEYS LIMITED

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## INTRODUCTION

The following report is based on work carried out by Geophysical Engineering and Surveys Limited on the Axel #1 and Axel #2 groups of claims held by Axel Mines Ltd. (N.P.L.) in the McLeese Lake area of British Columbia. The claims cover an area of indicated copper mineralization, based on previous prospecting and exploration work done since 1968. The current work consists of line cutting and geophysical surveys undertaken in November 1971 and January 1972.

A line grid had been cut over a part of the property in 1969 for the purpose of an induced polarization survey. The initial part of the program consisted of extending the grid to cover most of the property where accessible prior to freeze-up. After Teakettle and Bauchi Lakes, which occupy approximately a third of the area, were frozen, the line grid was completed.

The second part of the program consisted of a magnetometer survey over the lines to locate an intrusive-volcanic contact which is known to underlie the property, and to pick up any magnetite mineralized zones which may occur. It was also hoped that areas of alteration where magnetite has been broken down could also be distinguished.

The third part of the program consisted of a "Radem" electromagnetic survey. The object of the Radem survey was to pick up conductors and structural features which may influence or control mineralization.

The program was directed by W. R. Bergey and supervised by A. I. Betmanis of Geophysical Engineering and Surveys Limited for Axel Mines Ltd. (N.P.L.).

## LOCATION AND ACCESS

The claim groups cover and surround Teakettle and Bauchi Lakes, located in the Cariboo Mining Division of British Columbia. They lie 5 miles north west of Granite Mountain, approximately 8 miles north of McLeese Lake, and 4 miles north-east of Marguerite. They are centred around latitude 52°32'N and longitude 122°20.5' W.

The claims are accessible from Vancouver by major highways

6X

AXEL MINES LTD. (N.P.L.)

# LOCATION MAP

## AXEL MINERAL CLAIM GROUPS

CARIBOO MINING DIVISION — B.C.

LAT. 52° 32' LONG. 122° 20'.5

SCALE 1 IN. = 60 MI.

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. BABINE LAKE 3528 MAP #1

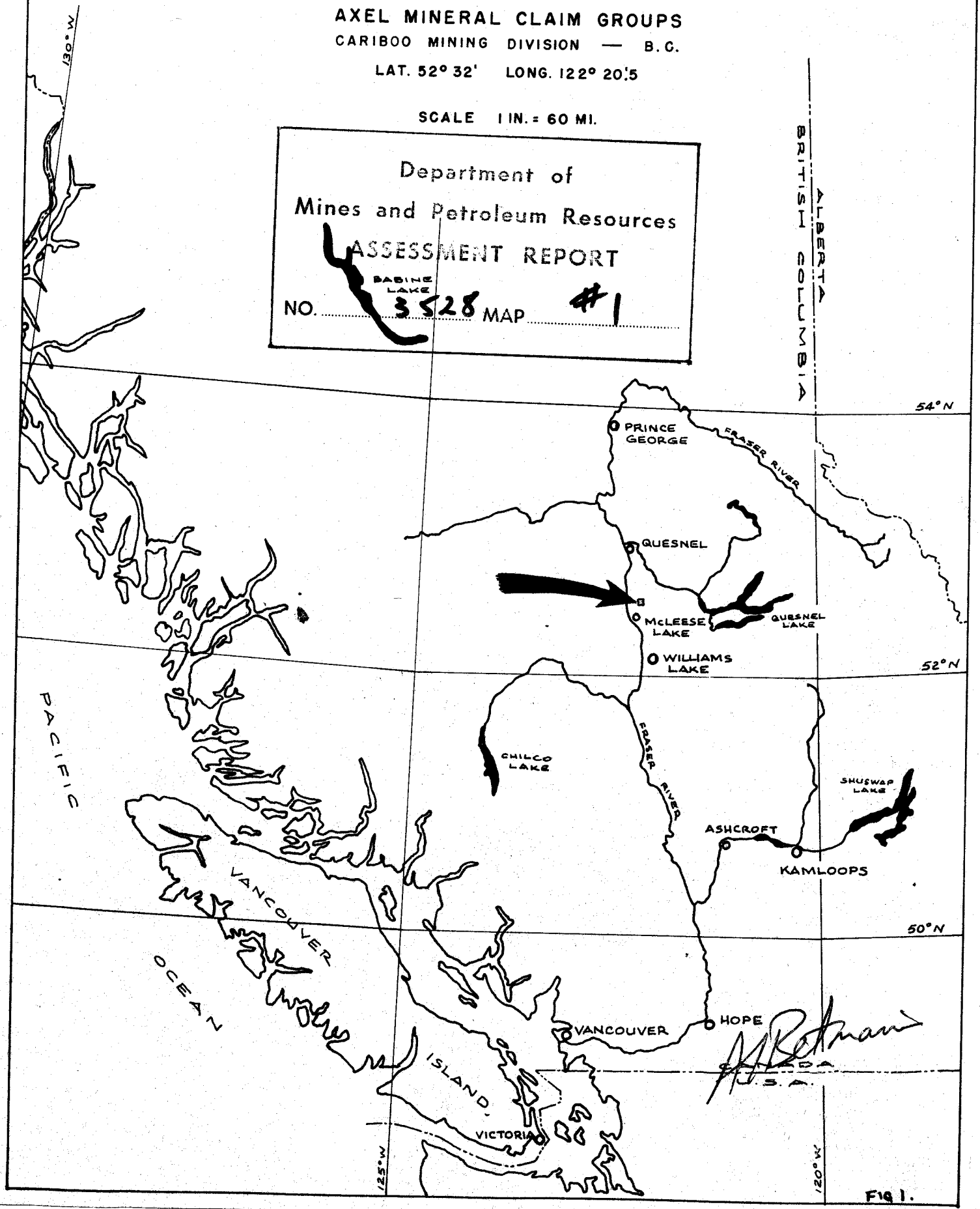


Fig 1.

to McLeese Lake via Williams Lake, and by good gravel and dirt roads from McLeese Lake. From McLeese Lake the Likely road is taken for 2 miles to the Gibraltar-Cuisson Lake road turn-off. The Gibraltar road is then followed for 5 miles to the A-2 turn-off. The property is then reached by following the A-2 road for two miles.

## CLAIMS

The property consists of 59 claims and fractions grouped into the AXEL #1 group of 40 claims and fractions, and the AXEL #2 group of 19 claims and fractions. The total area covered between the two groups is approximately 2.4 square miles. A complete list of the claims and groupings is given in Appendix I at the end of this report.

All claims other than Max 20 Fr., Moose 1 and 2 were held by Plateau Metals Limited (N.P.L.). Max 20 Fr., Moose 1 and 2 were held by the Estate of Christopher Riley. On December 18, 1969 Plateau Metals transferred all of their claims in the property to Axel Mines Ltd. (N.P.L.) by Bill of Sale; and on May 13, 1972 the Estate of Christopher Riley transferred its claims to Axel Mines also by Bill of Sale.

From the Axel #1 grouping, no work was applied to the Max 16 claim because it is an overstake of other valid claims. This claim will expire on March 3, 1974. From the Axel #2 grouping, no work was filed on the Axel 17 claim because the valid portion of that claim does not adjoin other claims of the Axel groups; and the claim expires as of January 29, 1972.

## PREVIOUS WORK

The property area was prospected in 1968 and 1969, and malachite stained intrusive float was found around Teakettle Lake. Due to the area being virtually absent of rock outcrops, the float was believed to have been brought up during the last glaciation from the area now being occupied by Teakettle Lake.

During the winter of 1968-1969 an electromagnetic survey was made over a section of Teakettle Lake, and six short diamond drill

holes were drilled through the ice. Several narrow sericite-chlorite schistose zones with minor pyrite and trace of chalcopyrite mineralization were encountered.

In July 1969 McPhar were contracted to carry out an induced polarization survey to the east and south of Teakettle Lake. The results were not encouraging, but four diamond drill holes were drilled on weak anomalies during November and December of 1969. Results of the drilling were as unimpressive as the results of the induced polarization survey. No further work was done until 1971.

## GENERAL GEOLOGY AND POTENTIAL MINERALIZATION

The property area is extensively overburden covered except for one volcanic rock outcrop in the south-west corner of the property. Other than this outcrop and the drill cores, no detailed evidence is available of the underlying geology.

One inch to four mile mapping has been done of the region (G.S.C. Map 12 - 1959), and shows Jurassic granitic rocks (locally a quartz diorite) intruding Permian Cache Creek volcanics, and later covered by Tertiary lavas.

The quartz diorite was encountered below overburden in the drilling of the Axel groups, and can be assumed to extend to the outcropping quartz diorite of Granite Mountain to the east. The quartz diorite does not outcrop again to the west for twelve miles. Just to the west of the property, and in the south-west corner of the Axel #2 group, several vesicular, moderately magnetic Tertiary lava outcrops were located. Five miles to the south of the property Cache Creek volcanics outcrop, and suggest that pre-intrusion lavas could extend under overburden to the property area.

Based on the geology described above, and knowledge of the copper occurrences on adjoining properties to the east, two types of potential mineralization were to be considered when interpreting the geophysical surveys.

The first and most likely is copper with minor associated molybdenum mineralization in schistose zones within the quartz

diorite. The second type is skarn mineralization at a possible quartz diorite/Cache Creek volcanic contact. Both potential types of mineralization are locally obscured by moderate to thick overburden cover, and possible Tertiary lava flows.

MAGNETOMETER SURVEY

The magnetometer survey of the property was made using a Scintrex MF-2 fluxgate magnetometer to measure vertical intensity in gammas. At the start of the survey, absolute values were obtained along the base line by setting up another identical MF-2 magnetometer on a base station and correcting the line magnetometer for diurnal variation. Once the absolute values were obtained, the base station magnetometer was discarded, and further diurnal variation was corrected for by a process of looping back to a station where an absolute value was known at least every half hour.

Readings were taken along all grid lines at 100 foot stations, with a constant magnetometer height of approximately two feet above ground at each station. The survey was carried out by C. C. Lee.

The purpose of the survey was threefold:- definition of rock types, delineation of magnetite mineralized structures, and indication of hydrothermally altered zones. The Tertiary volcanics are known from outcrops close to the property to be weakly to moderately magnetic, whereas the quartz diorite is relatively non-magnetic. Not much is known about the magnetic properties of the Cache Creek volcanics in the area. A skarn zone may or may not be magnetic, and relief in the indicated contact area would have to be interpreted for the existence of a skarn. The schistose zones carrying copper mineralization on adjoining properties do not have significant relief from the host quartz diorite. Areas of hydrothermal alteration are often associated with magnetic lows due to the breakdown of magnetite, and would best show up magnetically where the host rock is reasonably magnetic.

The magnetometer survey was very informative as far as the initial purpose of it was concerned:- the definition of rock types. Although additional work would be required before the magnetics

can be associated definitely with lithology, three broad zones of different magnetic intensity can be distinguished, and are assumed to correspond to the geology. They are separated on the accompanying map 1024-1 by lines A-A and B-B.

Area east of line A-A. This section is presumed to be all underlain by Jurassic quartz diorite except for a small area south of Teakettle Lake. The vertical magnetic intensity is mainly confined to the 900 - 1000 gamma range, and there is very little relief. The ten diamond drill holes were drilled in this area, and only granitic to dioritic intrusive rocks were encountered.

Area between line A-A and B-B. This section could be underlain by the Permian Cache Creek volcanic rocks. The magnetic relief is low to moderate, and intensity varies between 1000 and 1300 gammas. This is higher than definitely known areas of quartz diorite, but too low to compare with some of the magnetic Tertiary volcanic outcrops to the west. No geological information is known in this section, but it will tentatively be assumed to be underlain by Cache Creek rocks.

Area west of line B-B. This section is presumed to be underlain by Tertiary volcanics. The magnetic relief is high, and the vertical intensity varies anywhere from minus 650 to plus 2900 gammas, but generally stays in the 500 to 1500 gamma range. Outcrops immediately to the west of the survey area are Tertiary volcanics, and an outcrop at approximately 40W on lines 56 and 60S is a vesicular Tertiary volcanic that is sufficiently magnetic to attract a small suspended hand magnet. The narrow high zone immediately west of line B-B is assumed to be a magnetic basal bed of the later volcanics.

The area of over 1000 gammas south of Teakettle Lake and north-west of Bauchi Lake is assumed to be underlain by volcanic rocks which are overlying the quartz diorite, and which have not been removed by glaciation. It is presumed that they are Tertiary volcanics rather than Cache Creek volcanics.

The magnetometer survey was not as successful in delineating structures or in indicating hydrothermally altered zones, as in defining rock types. In the area presumably underlain by Jurassic or Permian rocks, relief is insufficient to indicate extensive hydrothermally altered zones. The alteration in narrow schistose zones would be insufficient to markedly affect the magnetics. The

narrow magnetic high just west of line B-B is not directly accompanied by a Radem cross-over, and is not indicated by Radem to be a conductor for most of its length. It should therefore not be assumed to be a magnetite mineralized structure.

## ELECTROMAGNETIC SURVEY

The electromagnetic survey of the property was done using a VLF-EM Radem unit manufactured by Crone Geophysics. It uses very low frequency (12 - 24 kilocycles) radio waves broadcast by the U.S. Navy. Since this frequency is very much higher than the normal frequency range employed in electromagnetic prospecting, the effect of relatively poor conductors such as water-filled shears and deep swamps may be comparable to that over more conductive sulphide zones. Since the signal derives from an essentially infinite source, faults of great horizontal and vertical extent give a particularly strong anomalous response.

The data are recorded as inclinations of the electromagnetic field. A conductor is indicated by a "cross-over" in the angle of inclination. This can be observed in profile form; however, presentation of the data is awkward when only profiles are plotted, and misleading cross-overs can be obtained due to topographical effects. A filter operator was designed by Dr. D. C. Fraser, Chief Geophysicist of Geophysical Engineering and Surveys Ltd., to phase shift the dip angle data by 90 degrees. It is a variation of the first derivative method for partially correcting for topography, and thus shows actual cross-overs as positive values. Negative values are meaningless, and are now shown on the accompanying maps.

For efficient use of the VLF-EM method a transmitting station should be chosen which is in a direction on strike with the expected conductors, and the lines of traverse should be parallel to the primary field; that is, perpendicular to the direction to the transmitting station. Due to the narrow range about a conductor in which the primary field will be affected, readings at an interval of 50 feet should be taken.

For purposes of the electromagnetic survey, two transmitting stations were used:- Seattle, Washington (NPG) to pick up conductors

striking approximately north-south; and Cutler, Maine (NAA) for conductors striking approximately east-west. Readings were taken along picket lines at fifty foot stations. The survey was carried out by K. W. Davies.

The Cutler, Maine survey was picking up conductors, but due to the low angle between the strike of the conductors and the lines of traverse in the survey, correlation between cross-overs was virtually impossible, and the survey was discontinued. The results of the survey are shown on map 1024-2B.

The Seattle, Washington survey picked up several structures or conductors which could be correlated and these are shown on map 1024-2A. There are several meandering but generally north-south striking possible conductors or structures east of Teakettle Lake and north of Bauchi Lake. Lack of outcrop in the area makes it impossible to determine readily the cause of them, but they should be considered as targets for further exploration. The ridge of magnetic high just west of line B-B is not directly accompanied by a Radem indicated conductor, but there is an indicated conductor or structure near the southern end of it. It is an area of minor outcrop where an abrupt change of topography occurs, so that ground examination may reveal its cause.

The VLF-EM method is not considered to be useful over lakes or deep swamps. However, the Seattle survey was carried over the two lakes, with the hope that if a strong conductor does exist under one of them, then it may show through the masking effect of the lake. Cross-overs which apparently can be correlated were obtained near the western edge of Bauchi Lake. They may be due to an abrupt deepening of the lake, or to the start of a clay bed at the bottom of the lake. However, the cross-over on line 60S is similar to what could be expected from a conductor or structure, rather than the edge of a lake, swamp, or clay bed.

## CONCLUSIONS AND RECOMMENDATIONS

The magnetometer survey differentiated areas of different lithology, and thus eliminated the portion of the property underlain by Tertiary lavas from further prospecting by indirect methods.

The survey did not outline zones of alteration, and it is unlikely that it picked up magnetite mineralized structures.

The Radem survey outlined several possible conductors. The area north of Bauchi Lake and east of Teakettle Lake has the greatest number of these conductors, and thus should be considered more favourable for additional exploration.

Further work is warranted to explore the area north of Bauchi Lake. Several tests for thickness of overburden should be made using a hammer seismograph; and if feasible, a geochemical soil survey should be made of the area. Geochemical anomalies that appear related to Radem indicated conductors should be further tested by drilling.

Respectfully submitted,

A. E. Betmanis, BASc., P. Eng.

Vancouver, B.C.
January 28, 1972.

# APPENDIX I

## CLAIMS

AXEL #1 GROUP

| Claim | Record No. | Expiry Date |
|---|---|---|
| Axel 2 Fr. | 51831 | June 10, 1975 |
| Axel 3-5 | 44419-421 | January 29, 1975 |
| Axel 6 | 44422 | January 29, 1976 |
| Axel 7 | 44597 | February 13, 1975 |
| Axel 8 | 44598 | February 13, 1976 |
| Axel 16 | 44424 | January 29, 1975 |
| Axel 18 | 44426 | January 29, 1975 |
| Axel 23-26 | 44603-606 | February 13, 1976 |
| Max 1-2 | 48916-917 | March 3, 1975 |
| Max 5-8 | 48918-921 | March 3, 1975 |
| Max 13-15 | 48926-928 | March 3, 1975 |
| Max 16 | 48929 | March 3, 1974 |
| Moose 1-2 | 48114-115 | October 29, 1975 |
| Jib 1 Fr. | 51830 | June 10, 1975 |
| Jib 35-38 | 44415-418 | January 29, 1975 |
| Hem 37-38 | 44525-526 | February 7, 1976 |
| Pet 1-4 | 50903-906 | May 2, 1976 |
| Deer 1-4 | 52734-737 | June 27, 1975 |

AXEL #2 GROUP

| Claim | Record No. | Expiry Date |
|---|---|---|
| Axel 1 Fr. | 51828 | June 10, 1973 |
| Axel 9-10 | 44599-600 | February 13, 1973 |
| Axel 11 | 44601 | February 13, 1974 |
| Axel 12 | 44602 | February 13, 1973 |
| Axel 17 | 44425 | January 29, 1972 |
| Axel 19-21 | 44427-429 | January 29, 1973 |
| Axel 22 | 44430 | January 29, 1974 |
| Max 9-12 | 48922-925 | March 3, 1974 |
| Max 20 Fr. | 50222 | April 1, 1973 |
| Max 21 Fr. | 51419 | May 22, 1973 |
| Max 25 Fr. - 26 Fr. | 51732-733 | May 27, 1974 |
| Max 27 Fr. | 51829 | June 10, 1973 |

# APPENDIX II

## AUTHOR'S CERTIFICATE

CERTIFICATE

I, Andris I. Betmanis, do hereby certify that:

1. I am a geologist with residence at Suite 512, 1550 Duchess Avenue, West Vancouver, British Columbia.

2. I am a graduate of the University of Toronto with the degree of B.A.Sc. in Applied Geology in 1965.

3. I am a Professional Engineer registered in the Provinces of British Columbia and Ontario.

4. From graduation to present I have been employed as a geologist with Geophysical Engineering and Surveys Limited.

5. During the period November 1971 - January 1972, I supervised the geophysical surveys described in this report.

A.I. Betmanis

January 28, 1972.

# APPENDIX III

## PERSONNEL AND DATES

## PERSONNEL AND DATES

| Name and Address | Position | Employed From-To | Days Worked |
|---|---|---|---|
| W.R. Bergey<br>700-1177 W. Hastings St.<br>Vancouver 1, B.C. | Geologist | Nov.11/71 - Jan.28/72 | 1½ |
| A.I. Betmanis<br>512-1550 Duchess Ave.<br>W. Vancouver, B.C. | Geologist | Nov.11/71 - Jan.28/72 | 23 |
| C.C. Lee<br>141½ Riverside Drive<br>N. Vancouver, B.C. | Magnetometer Operator | Nov.11/71 - Jan.12/72 | 22 |
| K.W. Davies<br>3537 East 24th St.<br>Vancouver, B.C. | Radem Operator | Nov.11/71 - Jan.12/72 | 22 |
| G. Lovang<br>141½ Riverside Drive<br>N. Vancouver, B.C. | Line-cutter | Nov.11/71 - Jan.12/72 | 29 |
| A. Raven<br>885 Dunsmuir St.<br>Vancouver 1, B.C. | Line-cutter | Nov.11/71 - Dec.4/71 | 23 |

# APPENDIX IV

## COST OF SURVEY

## COST OF SURVEY

| | | Total | Axel #1 Gp. | Axel #2 Gp. |
|---|---|---|---|---|
| Consulting Services | | $ 162.50 | $ 106.34 | $ 56.16 |
| W.R. Bergey | 11 hrs. | | | |
| Supervision | | 903.24 | 591.08 | 312.16 |
| A.I. Betmanis | 6 days | | | |
| Line Cutting | | | | |
| G. Lovang | 29 days | 733.29 | 479.91 | 253.38 |
| A. Raven | 23 days | 575.00 | 376.32 | 198.68 |
| C.C. Lee | 5 days | 108.48 | 71.05 | 37.43 |
| Magnetometer Survey | | 703.85 | 460.64 | 243.21 |
| C.C. Lee | 14 days | | | |
| Calculation and Plotting Magnetometer Survey | | 843.48 | 551.99 | 291.49 |
| A.I. Betmanis | 6 days | | | |
| K.W. Davies | 2 days | | | |
| C.C. Lee | 3 days | | | |
| Radem Survey | | 1,258.14 | 823.35 | 434.79 |
| K.W. Davies | 20 days | | | |
| Calculation and Plotting Radem Survey | | 613.01 | 401.20 | 211.81 |
| A.I. Betmanis | 7 days | | | |
| Accommodation and Meals | | 1,344.00 | 879.53 | 464.47 |
| 96 man days at $14/day | | | | |
| Vehicle Rentals and Transportation | | 681.25 | 445.85 | 235.40 |
| | | $ 7,926.24 | $ 5,187.26 | $ 2,738.98 |

The above costs are property related costs only and do not include preliminary compilation of previous data, administration costs, transportation to and from Vancouver and other costs not normally applicable for assessment credits.

N

12 N
10 N
8 N
6 N
4 N
2 N
00
2 S
4 S
8 S
12 S
16 S
18 S
20 S
22 S
24 S
26 S
28 S
32 S
36 S
40 S
44 S
48 S
52 S
56 S
60 S
64 S
68 S

Mordantie

MAIN CAMP AREA
CORE SHACK

BASE LINE 00

Tedastile Lake

OLD CORE SHACK

CAMP SITE

CLAIM BOUNDARY

TIE LINE 52 W

Bauchi Lake

Milkers Lake

10 5 0 5 10
SOUTH NORTH
DEGREES DIP ANGLE

NOTE: DIP ANGLES OF IN PHASE COMPONENT PLOTTED AS DOTTED LINES
POSITIVE FILTERED DIP ANGLE VALUES SHOWN NUMERICALLY

NAA
P.M.F.



TO ACCOMPANY "REPORT ON GEOPHYSICAL SURVEYS OF THE AXEL CLAIM GROUPS"
McLEESE LAKE AREA, CARIBOO MINING DIVISION, DATED JAN. 28, 1972
BY A.F. BETMANIS, BASc.

figure 1024-2B

GEOPHYSICAL ENGINEERING & SURVEYS LTD.
FOR
AXEL MINES LTD. (NPL)

# AXEL CLAIM GROUP

McLEESE LAKE AREA, B.C.

## ELECTROMAGNETIC (RADEM) SURVEY

USING CUTLER, MAINE

400' 0 400 800 1200 FEET

| | | |
|---|---|---|
| DRAWN: A.I.B. / O.C. | REVISED: | MAP No: |
| DATE: JAN. 28, 1972 | DATE: | N.T.S. 93 B |

A.I. Betmanis

N

MAIN CAMP AREA
CORE SHACK

OLD CORE SHACK

BASE LINE 00

Marguerite

Tookettle Lake

Bauchi Lake

McLEESE LAKE

CLAIM BOUNDARY

TIE LINE 52 W

12 N
10 N
8 N
6 N
4 N
2 N
00
2 S
4 S
8 S
12 S
16 S
18 S
20 S
22 S
24 S
26 S
28 S
32 S
36 S
40 S
44 S
48 S
52 S
56 S
60 S
64 S
68 S

LEGEND

PROBABLE CONDUCTOR OR STRUCTURE

10 5 0 5 10 DEGREES DIP ANGLE

NOTE: DIP ANGLES OF IN PHASE COMPONENT PLOTTED AS DOTTED LINES
POSITIVE FILTERED DIP ANGLE VALUES SHOWN NUMERICALLY

PMF
MPG



TO ACCOMPANY "REPORT ON GEOPHYSICAL SURVEYS OF THE AXEL CLAIM GROUP"
McLEESE LAKE AREA, CARIBOO MINING DIVISION, DATED JAN. 28, 1972
BY A.I. BETMANIS, BASc. P.ENG.

figure 1024-2A

GEOPHYSICAL ENGINEERING & SURVEYS LTD.
FOR
AXEL MINES LTD. (NPL)

# AXEL CLAIM GROUP

McLEESE LAKE AREA, B.C.

## ELECTROMAGNETIC (RADEM) SURVEY

USING SEATTLE, WASH.

400 0 400 800 1200 FEET

| | | |
|---|---|---|
| DRAWN: A.I.B. / D.C. | REVISED: | MAP No: |
| DATE: JAN. 28, 1972 | DATE: | N.T.S. |

A.I. Betmanis

DEER 3

DEER 4

DEER 1

DEER 2

AXEL No. 1 GROUP

MOOSE 2

MOOSE 1

MAX 1

JIB 35

JIB 37

JIB 1 Fr.

MAX 5

MAX 6

BASE LINE 00

JIB 38

JIB 36

MAX 2

AXEL 3

MAIN CAMP AREA

AXEL 16

AXEL 18

AXEL 17
(TO BE DROPPED)

AXEL 23

AXEL 4

AXEL 2 Fr.

MAX 14

AXEL 5

MAX 13

Teakettle Lake

AXEL 24

AXEL 25

AXEL 6

AXEL 19

MAX 9

MAX 25 Fr.

MAX 26 Fr.

MAX 10

AXEL 20

AXEL 21

MAX 11

AXEL 22

MAX 2

AXEL 7

AXEL 26

HEM 37

MAX 15

OLD CORE SHACK

AXEL 8

AXEL No. 2 GROUP

AXEL 9

PET 2

HEM 38

AXEL 10

CAMP SITE

AXEL 11

POWER LINE

PET 4

PET 1

AXEL 1 Fr.

AXEL 12

McLEESE LAKE

Bauchi Lake

MAX 21 Fr.

PET 3

TIE LINE 92 W

N

12 N
10 N
8 N
6 N
4 N
2 N
00
2 S
4 S
8 S
12 S
16 S
18 S
20 S
22 S
24 S
26 S
28 S
32 S
36 S
40 S
44 S
48 S
52 S
56 S
60 S
64 S
68 S

## LEGEND

- CLAIM BOUNDARY
- PROPERTY BOUNDARY
- PICKET LINE SURVEYED IN 1971
- PICKET LINE SURVEYED PRIOR TO 1971
- ROAD
- POWER LINE
- LAKE



TO ACCOMPANY "REPORT ON GEOPHYSICAL SURVEYS OF THE AXEL CLAIM GROUP"
McLEESE LAKE AREA, CARIBOO MINING DIVISION, DATED JAN. 28, 1972
BY A.I. BETMANIS, BASc., P.ENG.

figure 1024-3

GEOPHYSICAL ENGINEERING & SURVEYS LTD.
FOR
AXEL MINES LTD. (N.P.L.)

# AXEL CLAIM GROUP

McLEESE LAKE AREA, B.C.

## PROPERTY MAP

SHOWING CLAIMS & GROUPING, SURVEYED LINES, ROADS

400 0 400 800 1200 FEET

| DRAWN: A.I.B./O.C. | REVISED: | MAP No: |
|---|---|---|
| DATE: JAN. 28, 1972 | DATE: | N.T.S. |

PROFESSIONAL ENGINEER
A. I. BETMANIS

A.I. Betmanis

N

A

B

MAIN CAMP AREA
CORE SHACK

OLD CORE SHACK

BASE LINE 00

Marguerite Lake

Teakettle Lake

Bouchi Lake

McLeese Lake

TIE LINE 52 W

12 N
10 N
8 N
6 N
4 N
2 N
00
2 S
4 S
8 S
12 S
16 S
18 S
20 S
22 S
24 S
26 S
28 S
32 S
36 S
40 S
44 S
48 S
52 S
56 S
60 S
64 S
68 S

ABOVE 1500 GAMMAS
1000 – 1500 "
500 – 1000 "
BELOW 500 "

CONTOUR INTERVAL: 100 GAMMAS BETWEEN 500 AND 1500 GAMMAS
500 GAMMAS BELOW 500 AND ABOVE 1500 GAMMAS



TO ACCOMPANY "REPORT ON GEOPHYSICAL SURVEYS OF THE AXEL CLAIM GROUPS"
McLEESE LAKE AREA, CARIBOO MINING DIVISION, DATED JAN. 28, 1972
BY A.I. BETMANIS, BASc., P.ENG.

figure 1024-1

GEOPHYSICAL ENGINEERING & SURVEYS LTD.
FOR
AXEL MINES LTD. (NPL)

# AXEL CLAIM GROUP

McLEESE LAKE AREA, B.C.

## MAGNETOMETER SURVEY

400' 0 400 800 1200 FEET

| | | |
|---|---|---|
| DRAWN: A.I.B. / O.C. | REVISED: | MAP No: |
| DATE: JAN. 28, 1972 | DATE: | N.T.S. 93 B |



A. I. Betmanis