

3278

GEOLOGICAL EXAMINATION  
GEOCHEMICAL SURVEY  
MAGNETOMETER SURVEY

Jock, Rip, Joy, Mesky  
and  
Eric Claims

93A / 11W, 12E

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

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 3278 MAP

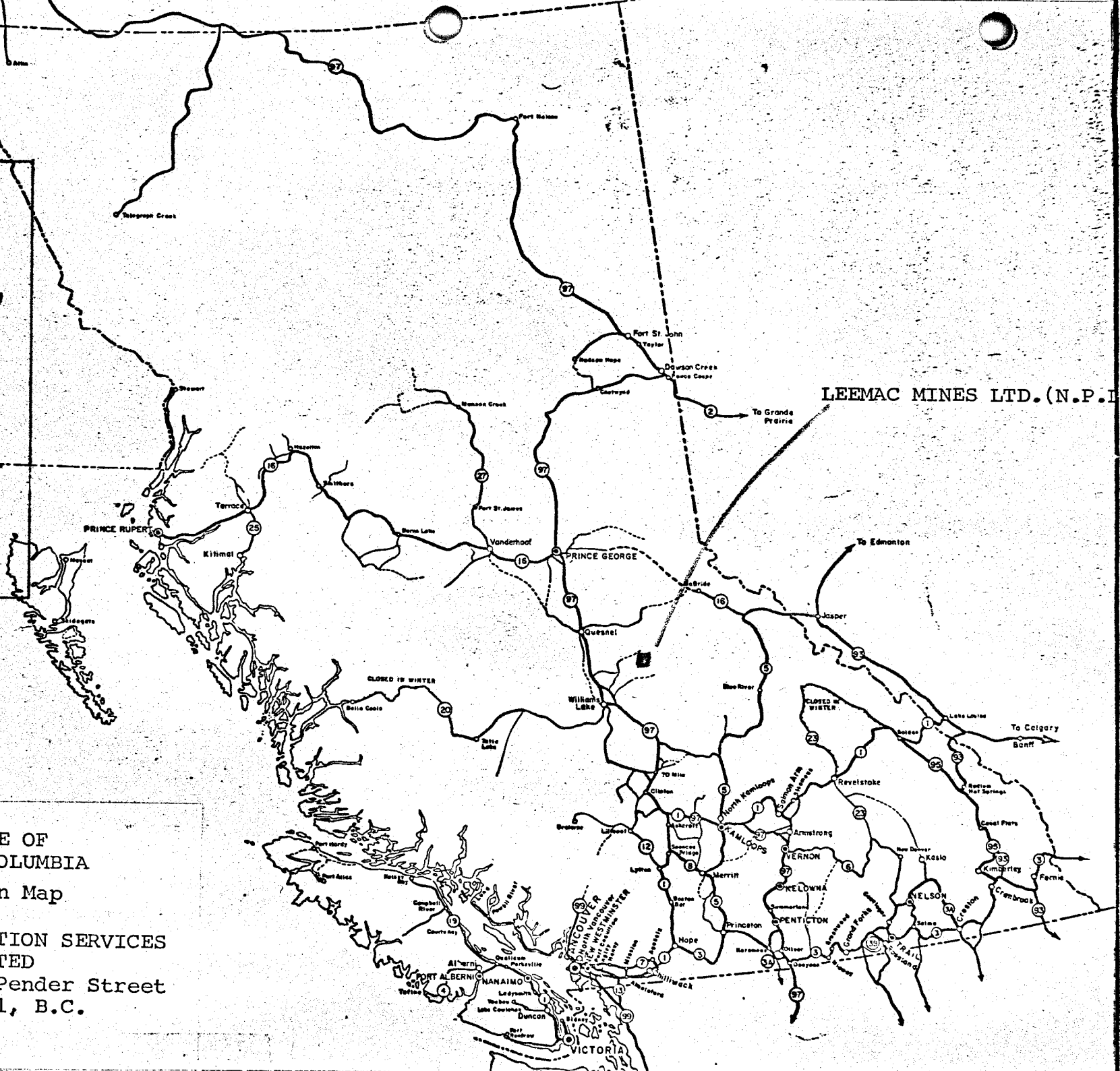


Department of  
**Mines and Petroleum Resources**  
 ASSESSMENT REPORT  
 NO. **3278** M.P. #1

LEEMAC MINES LTD. (N.P.I.)

PROVINCE OF  
 BRITISH COLUMBIA  
 Location Map

PRIMAC EXPLORATION SERVICES  
 LIMITED  
 630-890 West Pender Street  
 Vancouver 1, B.C.



August 25, 1971

#### INTRODUCTION

During June 1969 some fifty-six claims were staked near the Cedar Creek area in the vicinity of Likely, British Columbia. Along the creek, a few out-crops exhibit mineralization - mostly pyrite with some chalcopyrite. Those claims are well situated in an area where there are many structural disturbances and as a result, there may be some possibilities of mineralized zones of a structurally controlled nature.

#### PROPERTY

The property consists of some fifty-six contiguous mineral claims as follows:

Rip 1-21 inclusive,	Record # 52845-61, 53744-47
Joy 1-6 inclusive,	Record # 52839-52844
Jock 1-17 inclusive,	Record # 52822-52838
Mesky 1-6 inclusive,	Record \$ 53748-53753
Eric 1-6 inclusive,	Record # 53483-88

The above claims are recorded at the Mining Recorder's Office in Quesnel, British Columbia.

#### LOCATION AND ACCESS

The property is situated approximately six miles east, south-east of the village Likely, British Columbia. Likely is some fifty-two miles from the One Hundred and Fifty Mile House, by a good gravel road. The Property is accessible

... 2

by a fair dirt road from Likely and it leads to the Cedar Dam, which is situated at the southern end of this property. Cedar Creek runs along the center of these claim groups.

#### TOPOGRAPHY AND VEGETATION

Elevation encountered on the property would be from 3000 feet to 3500 feet above sea level. The property lies in a valley between the Spanish Mountain on the east and Mount Warren on the west. The area of the property is forest-covered with sub-commercial and commercial fir, pine and alder. The climate is temperate, with a fairly heavy seasonal rainfall.

#### GENERAL STATEMENT AND REGIONAL GEOLOGY

The Cariboo mining division has attracted many prospectors to search for rich gold placer deposits for more than a century. Many placer gold deposits were found and operations were carried out successfully. Even today, small scale gold placer-operations are being carried out. But in the very recent years, mining companies and prospectors are moving into this area, with a slightly different object of finding copper prospects. Properties with a low, economically feasible grade and large tonnage, have taken the shape of producing mines in past few years in British Columbia. The steady increase in the price and demand for copper has induced many prospectors to look for such copper deposits and it is believed from the regional geology that the Cariboo division is best suited for this new venture. Many of the old workings in this area reveal copper mineralization, but since the copper value was very insignificant, it completely escaped the attention of the "Old Timers".

The regional geology of this area is not simple. Multiple deformation has rendered most of the rocks schistose and tightly compressed in complex repetitive fold. Due to high metamorphism and by the intensity of hydrothermal alteration, many rock types have changed their original texture, structure and composition. Poor rock exposure in this area is the major reason for the difficulties in obtaining more information from geological mapping.

The south-eastern part of Cariboo district is underlain by complex metamorphic rocks of precambrian to the mesozoic era. Rocks of upper triassic to upper jurassic are predominant. Majority of the type of rocks in this area are the basic variety, of which dark green pyroxene-rich andesites of different textures are very common. It is believed that during the latter part of jurassic, rocks of acidic and intermediate character intruded these older formations along the plane of weakness and fault zones.

Structure in this area is highly complex but in general a broad antichinorium is reported. The axis thereof trends north-west and runs for several miles. Numerous drag folds are believed to be present in this area. The major fault systems trend north-west, which has developed many minor cross faults and fractures perpendicular to it.

#### GEOLOGY

A great majority of this property is covered by an overburden of varying depths. Outcrops are scarce, but when noticed, they are mostly of volcanic andesitic group of rocks, believed to be of middle or upper jurassic age. This group consists of dark green pyroxene bearing andesitic agglomerate, breccia and minor tuff. These andesites are chloritized with an abundance of secondary epidote, which are mostly rich in

pyroxenes. Chloritic schists and argillites were noticed in limited exposures along the Cedar Creek bed.

The structure in this area is characterized by the north-westerly trends of the major fault systems. The north-east boundary of this property is flanked by the major fault system in this area. There are few indications of less well developed fracture-systems striking north-east. These fractures could be contemporaneous to the major fault systems in this general area. Both, the government airborne magnetic map 1533-G and the ground magnetometer survey of the property which coincides with the Cedar Creek. To sum up, Cedar Creek could be the expression of the existing fault. Since the mineralizations are mostly noticed along the creek bed, this fault and the adjacent areas could be of some economic interest.

#### MINERALIZATION

Some of these outcrops are heavily mineralized with pyrite. Mostly pyrite is disseminated, but sometimes cubes of 3/4" are also noticed. Fair amounts of chalcopyrite are associated with pyrite. Small valves of gold are present in some of the samples. These mineralizations appear to be structurally controlled as they are present along the shear zones, slips and joint planes. In places, pyrite is highly oxidized and appears rusty.

Some five miles east of these claims is situated the Cariboo Bell Mines Ltd. (N.P.L.), who have come up with a substantial tonnage with approximately 0.515% copper. Ardo Mines Ltd. (N.P.L.) is situated some five miles north-west and the recent drilling on their property has indicated good potentials.



MAGNETOMETER SURVEY

A magnetometer survey using the fluxgate Mf.1 instrument was carried over the pre-cut grid lines on this property. Readings were taken at every 100 feet intervals. These readings were plotted, contoured and submitted to Mr. Dick Crosby Geophysicist, of Seigel Associates Ltd., for his interpretation and comment, which is attached with this report.

CONCLUSION AND RECOMMENDATIONS

From the GSC reports and by the personal visit to the area, this property is well situated lithologically and structurally. The geochemical survey revealed some distinctive anomalies and they have to be followed by bulldozer trenching. Because of fairly heavy overburden, much information could not be obtained from the geochemical survey. Moreover, the ponds and muskegs within this property have badly hindered a complete reconnaissance survey throughout the property. The magnetometer survey has revealed us very little structural information. In order to assess this property's economical potential, bulldozer trenching has to be done. This should be followed by a detailed geological mapping at 1"=400' scale. An Induced Polarization survey may be carried out to outline mineralized zones. This exploratory work would involve an expenditure of approximately \$27,500.00 as outlined below:

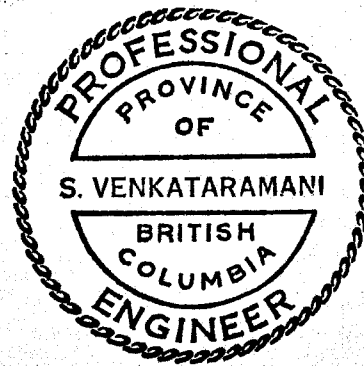
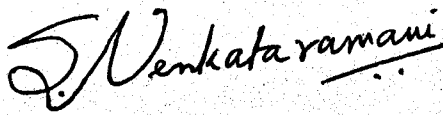


Bulldozer Stripping	\$ 8,000.00
Geological Mapping	\$ 5,000.00
Induced Polarization Survey	\$ 6,000.00
Camp Supplies	\$ 3,000.00
Engineering	\$ 3,000.00
Contingency	\$ 2,500.00
	<u>\$27,500.00</u>

Depending upon the results of this program, the property may be drilled to evaluate its economical potential.

Respectfully submitted

S. Venkataramani M.Sc. P.Eng.



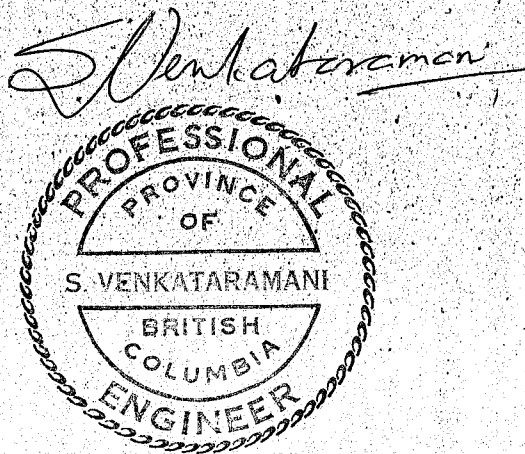
C E R T I F I C A T E

I, S. Venkataramani, of Vancouver, British Columbia, do hereby certify that:

1. I am a consulting geologist with my office located at #630 - 890 West Pender Street, Vancouver 1, B. C.
2. I am a graduate geologist with a Master of Science Degree from the University of Madras, India.
3. I am a member of the Association of Professional Engineers of the Province of British Columbia.
4. I am a certified professional geologist belonging to the American Institute of Professional Geologists, Golden, Colorado, U. S. A.
5. I am a member of the Canadian Institute of Mining and Metallurgy.
6. I have been practicing my profession for over 10 years.
7. I have no direct or indirect interest, nor do I expect to receive any interest directly or indirectly in this property or the securities of Leemac Mines Ltd. (N.P.L.)
8. This report is based on my personal visit to the area and from previous reports on the property and the published geological literature.

Vancouver, British Columbia

S. Venkataramani, M.Sc. P. Eng.

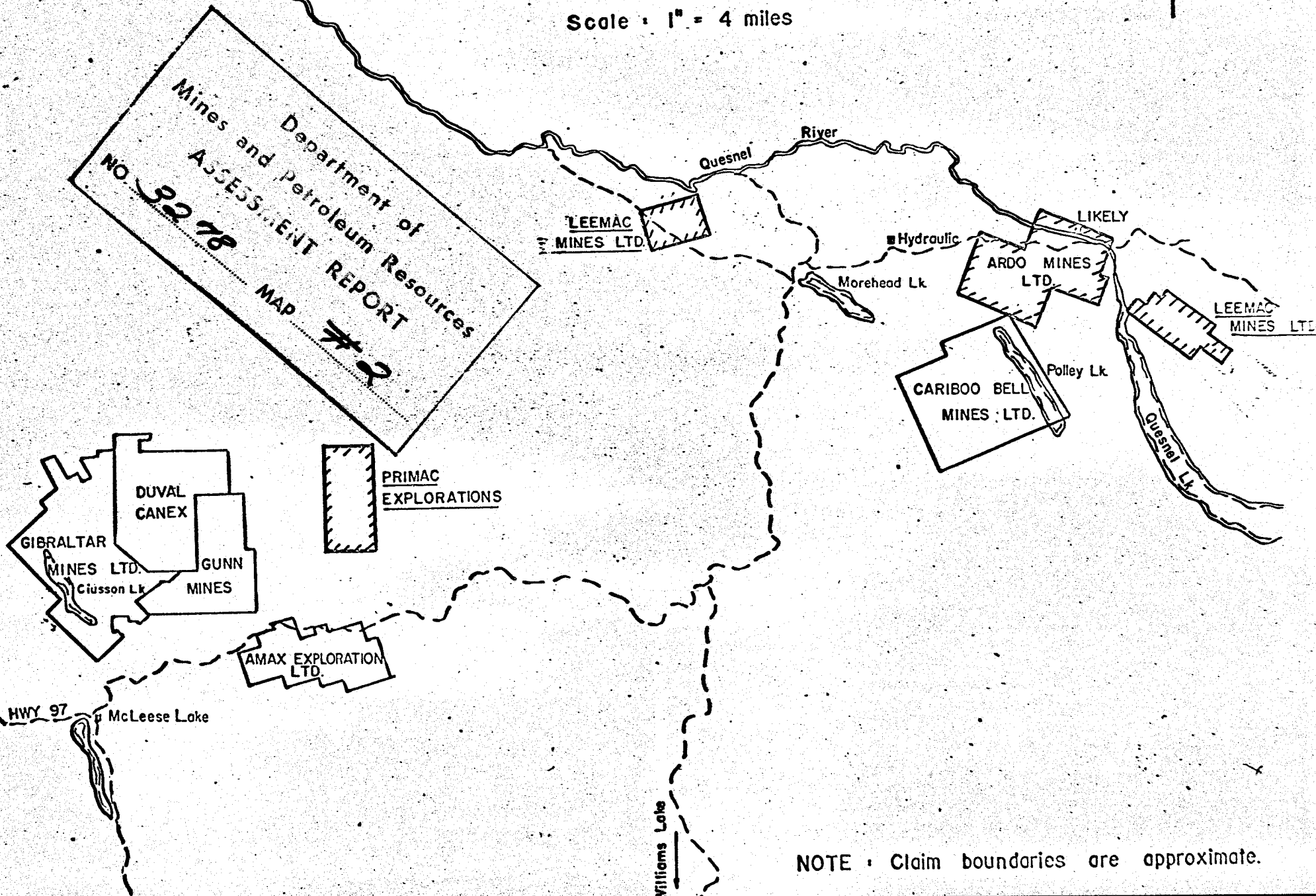


PRIMAC EXPLORATION SERVICES LTD.

CLAIM LOCATION MAP

CARIBOO MINING DIVISION 23

Scale : 1" = 4 miles





QUESNEL

LAKE

ROAD TO LIKELY

Base Line

MESKY 5	MESKY 6			RIP 20	RIP 21
MESKY 3	MESKY 4				
MESKY 1	MESKY 2				
RIP 5	RIP 4	JOCK 7	JOCK 8	RIP 18	RIP 19
RIP 3	RIP 2	JOCK 5	JOCK 6	RIP 17	RIP 16
RIP 1	JOCK 17	JOCK 3	JOCK 4	RIP 15	RIP 14
JOCK 15	JOCK 16	JOCK 1	JOCK 2	RIP 13	RIP 12
JOCK 13	JOCK 14	JOY 5	JOY 6	RIP 11	RIP 10
JOCK 11	JOCK 12	JOY 3	JOY 4	RIP 9	RIP 8
JOCK 9	JOCK 10	JOY 1	JOY 2	RIP 7	RIP 6
	ERIC 2	ERIC 1			
	ERIC 4	ERIC 3			
	ERIC 6	ERIC 5			

CEDAR LAKE

Department of  
Mines and Petroleum Resources  
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NO. 3278 MAP #3

### GRID LOCATION MAP

#### LOCATION MAP

MESKYY, JOY, JOCK, RIP & ERIC CLAIMS

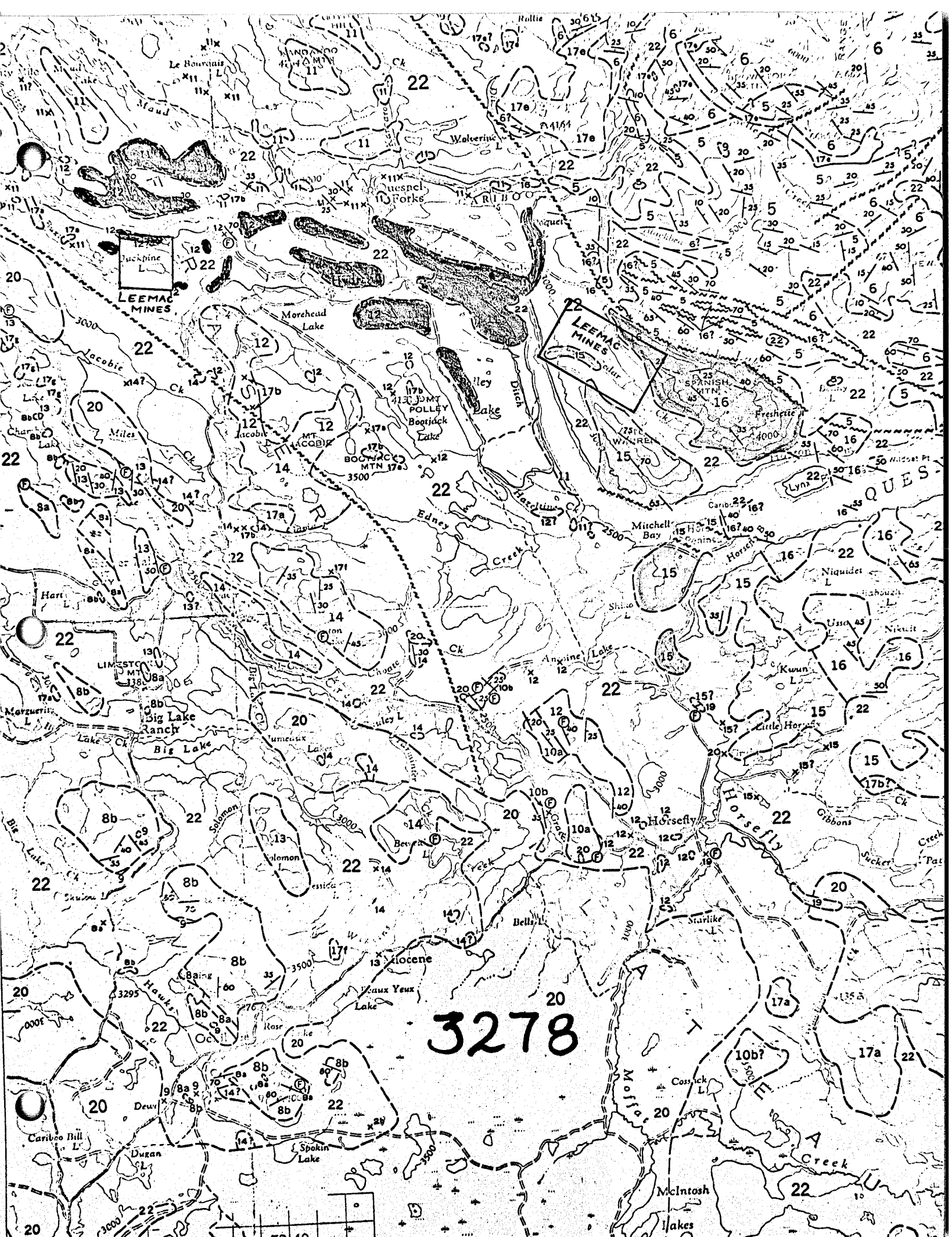
LEEMAC MINES LTD.

LIKELY AREA  
CARIBOO M.D., B.C.

PRIMAC EXPLORATION SERVICES LTD.

SCALE 1" = 3000'





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LEGEND

CENOZOIC

QUATERNARY

PLEISTOCENE AND RECENT

- 22 Glacial deposits and recent alluvium; till, gravel, sand, silt, and clay; few if any bedrock exposures

TERTIARY AND QUATERNARY  
PLEISTOCENE AND EARLIER

- 21 Basaltic breccia and tuff; minor flows

TERTIARY  
MIOCENE AND/OR LATER

- 20 Basaltic flows; minor tuff, conglomerate, and sandstone

PALEOCENE (?) TO MIOCENE (?)

- 19 Sandstone, shale, and tuff

PALEOCENE AND/OR EOCENE

- 18 Brown and buff rusty weathering dacite and rhyolite

JURASSIC AND/OR CRETACEOUS AND (?) EARLIER

- 17 17a, hornblende-biotite and biotite-quartz monzonite and granodiorite, minor hornblende-biotite syenite and monzonite; 17b, hornblende-biotite syenite and monzonite; 17c, hornblende diorite; 17d, muscovite granite and quartz monzonite including pegmatite; 17e, gneissose biotite granodiorite, altered and gneissose diorite, and augen granite (part of unit 17e may be Palaeozoic); 17f, trachyte porphyry (may be volcanic); 17g, green andesite and fine-grained diorite (may be volcanic)

JURASSIC (?) AND CRETACEOUS (?)  
MIDDLE JURASSIC (?) TO CRETACEOUS (?)

- 16 Green andesitic tuff, agglomerate, and flows; minor argillite, chert, and conglomerate

JURASSIC  
MIDDLE (?) AND/OR UPPER (?) JURASSIC

- 15 Dark green pyroxene-bearing andesitic agglomerate, breccia, and flows; minor tuff; may be equivalent to unit 14

- 14 Green pyroxene-bearing andesitic agglomerate, breccia, and flows; minor tuff, argillite, and limestone; may be equivalent to unit 15

LOWER JURASSIC (?)

- 13 Purplish brown, brown, and grey pebble and cobble conglomerate and sandstone; soft, friable, black and brown, carbonaceous shale, green shale; minor black limestone

LOWER JURASSIC

- 12 'Purple' volcanic rocks; purplish brown, dark grey, and rarely green pyroxene-bearing andesitic agglomerate, breccia, and flow; may contain analcite near contacts with units 10 and 11; minor limestone, argillite, and conglomerate

TRIASSIC AND/OR JURASSIC  
UPPER TRIASSIC AND/OR LOWER JURASSIC  
(may include MIDDLE JURASSIC)

- 11 Green pyroxene bearing andesitic flows, agglomerate, and breccia; conglomerate, argillite, and limestone

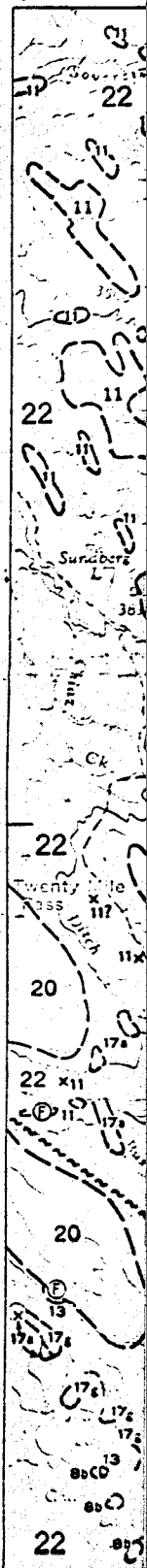
TRIASSIC  
UPPER TRIASSIC

- 10a green and purplish brown pebble and cobble conglomerate

MESOZOIC

PRELIMI

122° 00'  
53° 00'



**SEIGEL ASSOCIATES LIMITED**  
GEOPHYSICAL CONSULTANTS & CONTRACTORS  
A DIVISION OF SCINTREX LIMITED

September 29, 1971

Mr. Sankar V. Ramani  
630 - 890 West Pender Street  
Vancouver 1, B. C.

Dear Mr. Ramani:

Re: Magnetometer Survey  
Leemac Mines Limited  
Cedar Creek area, British Columbia

Vertical component magnetic field intensities were recorded at 100 foot intervals along grid lines at 400 foot separations oriented in a northeasterly direction. A Scintrex MF-1 fluxgate magnetometer was used to complete about 15 line miles of survey.

The data has been plotted on a map on the scale of 1 inch = 400 feet and contoured with a 100 gamma contour interval.

A very strong northwest-southeast magnetic trend is obvious over both the southern and northern sides of the property. Magnetic relief ranges up to 1000 gammas at the northwestern side of the property and decreases to about 200 to 300 gammas on the east central portion.

A strong magnetic gradient is seen between lines 52 + 00 and 56 + 00. Because the gradient is parallel to and between two lines, it may be due to diurnal drift or magnetic base leveling problems.

The northwesterly trending elongated high frequency magnetics support the suggestion that the area is underlain by volcanic rocks intersected by northwesterly trending fault systems. An area of magnetic low values and lower frequency data may indicate a zone of alteration in the volcanic rocks. The area is located west of the base line as shown on the magnetic contour map. Since alteration zones are favourable locations for the presence of sulphide mineralization, geochemical surveying is recommended over this area. If the geochemical survey shows positive results, induced polarization surveying should be utilized to outline any areas of sulphide mineralization.

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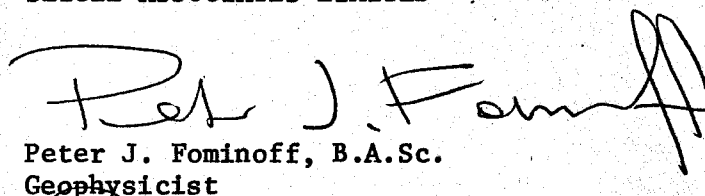
Mr. Sankar V. Ramani  
September 29, 1971

Page 2

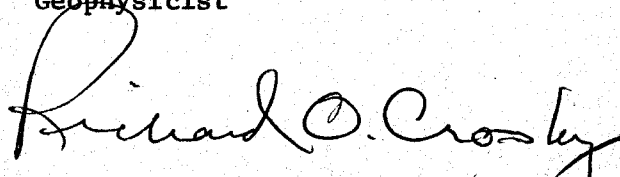
An area of less intense magnetic activity is located on the east side of Cedar Lake between lines 28 + 00 and 40 + 00. This area may be underlain by a more acidic and competent rock. It should also be investigated geochemically and possibly by induced polarization surveying.

Respectfully submitted,

SEIGEL ASSOCIATES LIMITED



Peter J. Fominoff, B.A.Sc.  
Geophysicist



Richard O. Crosby, B.Sc., P.Eng.  
Western Manager

ROC:lm



40+00W

30+00W

20+00W

10+00W

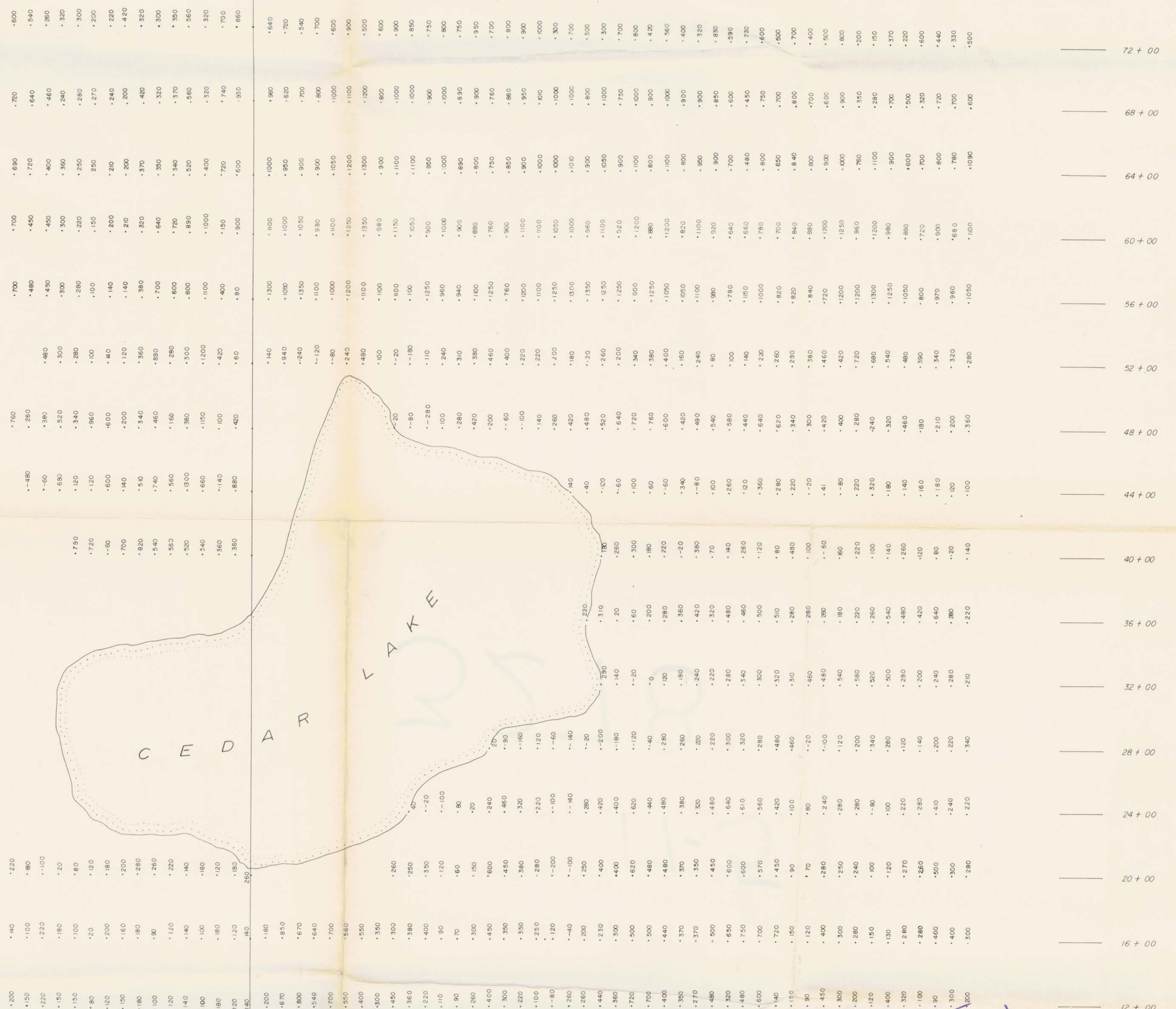
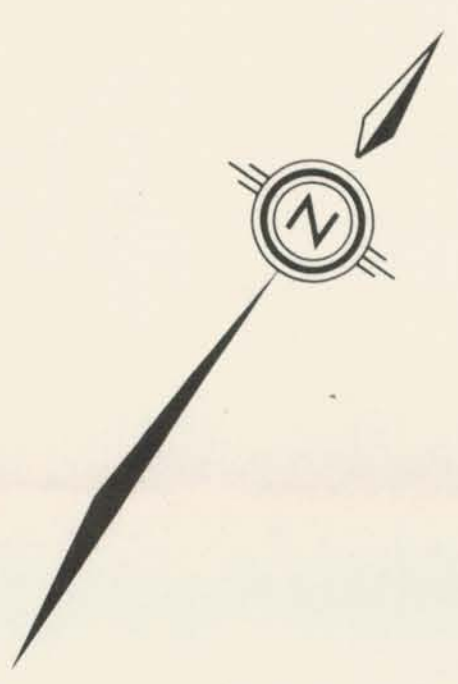
0+00E

10+00E

20+00E

30+00E

40+00E



92+00  
88+00  
84+00  
80+00  
76+00  
72+00  
68+00  
64+00  
60+00  
56+00  
52+00  
48+00  
44+00  
40+00  
36+00  
32+00  
28+00  
24+00  
20+00  
16+00  
12+00  
8+00  
4+00  
0+00

M-5

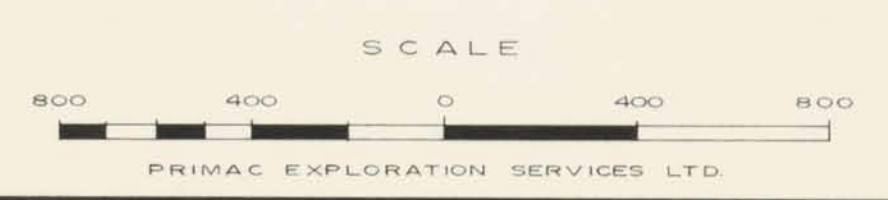
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Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
NO. 3278 MAP #5



LEEMAC MINES LTD.  
CEDAR CREEK  
CARIBOO M.D., B.C.

MAGNETOMETER SURVEY





40+00 W

30+00 W

20+00 W

10+00 W

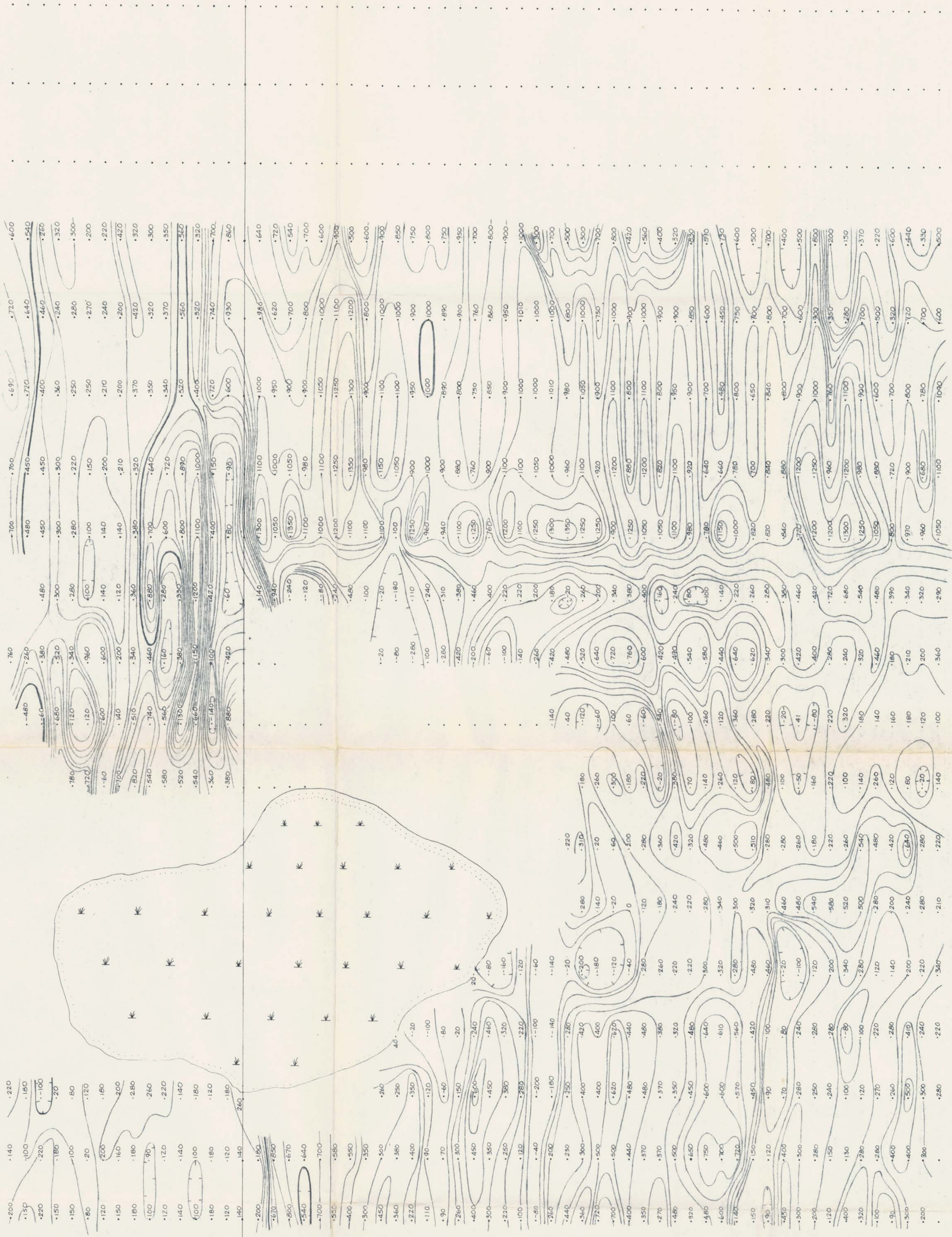
0+00 E

10+00 E

20+00 E

30+00 E

40+00 E



90+00  
85+00  
80+00  
75+00  
70+00  
65+00  
60+00  
56+00  
52+00  
48+00  
44+00  
40+00  
36+00  
32+00  
28+00  
24+00  
20+00  
16+00  
12+00  
8+00  
4+00  
0+00

Department of  
Mines and Petroleum Resources  
ASSESSMENT REPORT  
No. 3278 MAP #6

LEEMAC MINES LTD.  
CEDAR CREEK  
CARIBOO M.D., B.C.

### MAGNETOMETER SURVEY

CONTOUR INTERVAL = 100 GAMMAS

SCALE

