TELEPHONE 681-7493

MacDONALD CONSULTANTS LTD.

SUITE 12 - 425 HOWE STREET, VANCOUVER, 1, B.C.

1797

Report

on a

Geochemical and Geophysical Survey

on the

Lorex 1 - 18, Lorex 21 - 40 and I.L. 1 - 2

Group of Mineral Claims

held by

Northlode Explorations Ltd.

located

North of Pimainus Lake

Highland Valley, B. C.

(50° N, 121° W)

by

MacDonald Consultants Ltd.

H. Wober, P. Eng.

March 21, 1969

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INTRODUCTION

This report is an evaluation of the results of a geochemical and ground magnetometer survey carried out during periods of the months of October, November and early December, 1968.

The field results were compiled in the office of MacDonald Consultants Ltd. in January, 1969. The writer visited the property while the soil sampling program was carried out.

Prior to the work carried out by MacDonald Consultants Ltd., AMEX Mining Exploration Services of Kamloops, B. C. extended the original line grid cut to April 30, 1968 by an additional 15 line miles.

PROPERTY

The property consists of a contiguous block of 40 claims, located in the Kamloops Mining Division and recorded at the office of the Mining Recorder as follows:

Claim Name	Record No.
Lorex #1 - 18 incl.	46088D - 46105D incl.
Lorex #21 - 40 incl.	46106D - 46125D incl.
I.L. #1	46054D
I.L. #2	46055D

LOCATION AND ACCESS

The property is located in the Highland Valley area north of Pimainus Lake. Access is from Ashcroft on a paved road to the Highland Valley Lodge from where dirt roads lead to the property through the Lornex Mining Camp or past Calling Lake. The total distance by road from Ashcroft is about 40 miles.

GENERAL AND ECONOMIC GEOLOGY

The most recent study on the Guichon Creek batholith was done by K. Northcote and submitted as his thesis to obtain the degree of Ph.D. (Geology) at the University of British Columbia.

Among earlier studies of importance to the exploration geologist in the area is "The Geology and Mineral Deposits of Highland Valley, B. C." by W. H. White, R. M. Thompson and K. C. McTaggart.

The Guichon Creek batholith occupies an area 40 miles long in a north-northwesterly direction with a maximum width of about 16 miles.

The batholith is of lower Jurassic age and consists of seven major, almost concentric phases with the relative age of the phases decreasing towards the centre.

The picture of concentric successive phases is interrupted and disturbed by phases (or varieties) of intermediate relative age in its eastern part and towards the eastern margin (after K. Northcote).

The rock types are quartz diorite, granodiorite, quartz monzonite, porphyries, associated breccias and leucocratic dykes and irregular shaped bodies.

Sharp as well as gradational contacts occur.

The study and interpretation by Northcote was done from the outcrop area of only 3% of the batholith. Local deviations of the boundary lines between the different phases are, therefore, quite possible.

The mineral deposits of the area represent the very latest phases of the igneous activity of the batholith. The mineral bearing solutions followed pathways of higher permeability and are, therefore, linked to breccias,

breccia pipes, fault and fracture zones. Porphyrritic dykes of the latest phases indicate deep-reaching breaks and are also favoured by deposition. The mineralization was accompanied by intensive rock alteration. White, Thompson, McTaggart name tourmaline, quartz, sericitization, argillic alteration, chloritization and epidote mineralization among others as being associated with copper mineralization at Bethlehem's deposits. The chloritization was found to be most intense in the centre of the ore bodies.

The most important primary minerals of the deposits are bornite, chalcopyrite, chalcocite and molybdenite. Secondary minerals are malachite, azurite, tenorite, ferrimolybdite and others.

Zoning of the minerals was observed at Bethlehem as well as at Lornex. Bornite is predominant in the centes of the ore bodies with increasing chalcopyrite contents towards the outside until the latter becomes the main copper mineral. At some of the Bethlehem ore bodies a tail of pyrite mineralization was observed outside the ore zones. The distribution of molybdenite is quite erratic and does not follow any recognizable pattern.

FIELD WORK CARRIED OUT

1.) Line Cutting

Amax Mining Exploration Services (A.A. Ablett) of Kamloops, B. C. extended the older existing line grid to the north by 15 line miles.

The line grid was established by compass and chain. The lines were cut to the ground, 3 feet wide, marked picket stations were erected every 200 feet along the base line and the cross lines. This work was carried out prior and in parts during the work carried out by MacDonald Consultants Ltd.

2.) Geochemical Survey

A soil sampling program was carried out over a precut grid system of lines 400 feet apart with stations at 200 foot intervals along the lines.

A total of 750 samples were taken and shipped to Bondar-Clegg & Company, 1500 Pemberton Avenue, North Vancouver, B. C. for assaying.

The -80 mesh fractions were assayed for copper and molybdenum. Hot aqua regia digestion was used. The copper values were determined by the atomic absorption method, the molybdenum values colorimetrically. The samples were taken with a mattock from the "B" horizon. The samples were packed in water-resistant paperbags provided by Bondar-Clegg & Company and were dried in the field at room temperature before they were shipped.

3.) Magnetometer Survey

This survey was carried out with a brand new Sharpe MF 1 fluxgate magnetometer by Mr. J. P. Henry of MacDonald Consultants Ltd. who is an experienced operator.

After several base stations were established, the readings were carried out at 200 foot intervals along the lines. The reading interval was reduced to 100 feet wherever relatively abrupt local changes were observed. Base station readings were taken every 1½ hours. The values were corrected for their diurnal drift before they were plotted and contoured at 100 gamma intervals. The survey had to be interrupted for 3 days because of magnetic storms.

INTERPRETATION OF RESULTS

The Lorex Group of claims is located within the central core of the Guichon batholith close to its contact with the older Bethlehem Phase.

The central core formed by the Bethsaida Phase is predominantly of quartz monzonite composition. (After Northcote) The contact between Bethsaida quartz monzonite and Bethlehem granodiorite was found to be very important for the location of other porphyry copper deposits in the area in combination with other controls such as fault structures and zones, breccia zones and pipes and certain porphyry dykes representing deep seated breaks.

Northcote's map of the geology of the Guichon Batholith, which has been proven to be very accurate by the exploration work on many other properties of the Highland Valley does not indicate the presence of a contact between Bethsaida quartz monzonite and Bethlehem granodiorite in the area covered by the Lorex group.

The central Bethsaida core also correlates well with a large magnetic low shown on the Government Airborne Magnetometer Survey which was only released in the fall of 1968. However, the proximity of the property to the western margin of the core of the batholith and the heavy cover of glacial overburden which may obscure local irregularities in the line of the contacts required exploration work.

The geochemical response of the survey especially for molybdenum, is weak. The values for molybdenum range from 0 to 3 ppm with erratic peaks at 4 - 5 ppm. Background values for copper are low and around 25 ppm. A weak trend of higher values around 45 to 50 ppm copper corresponds with drainage trends and swampy ground which contains more organic matter in deeper soil horizons and causes the precipitation of slightly more copper. Erratic singular peaks were encountered here and there ranging from 215 to 360 ppm. Comparing the results with other areas in the Highland Valley gives no further

encouragement although this method alone should not be considered decisive under the prevailing conditions of relatively deep overburden.

The magnetometer survey was carried out with two objectives:

It is reported from the Lornex deposit, that the copper mineralization is accompanied by intense hydrothermal alteration which replaces the magnetite and other accessory magnetic rock components, causing magnetic depressions.

Secondly, the contact between the central Bethsaida core and the outer phases of the Guichon Batholith shows up as a steep gradient on the airborne magnetic map. It was also possible to delineate a portion of this southwestern contact crossing a property the writer is presently working on by a ground magnetometer survey. There the Bethlehem phase shows up as distinct magnetic high which is continuous and coincides as well with Northcote's map as with geological mapping and interpretation by float count.

The ground mangetometer survey on the Lorex group seems to reflect topography and an undulating bedrock surface rathkr than geological contacts or structural features.

The magnetic profiles and contour lines are very irregular and no significant trends are discernible. The "highs" are in most cases coincident with ridges and the "lows" are found over drainage or swampy areas. Old drainage or glacial erosion-channels are most likely responsible for short and irregularly waving trends of magnetic lows. No coincident pattern with the weak geochemical indications can be established.

SUMMARY AND CONCLUSION

Work carried out by Amex Mining Exploration Services and MacDonald Consultants Ltd. on the Lorex Group of claims north of Pimainus Lake in the Highland Valley area in the late fall of 1968 consisted of linecutting, a geochemical survey and a ground magnetometer survey.

The geochemical survey did not show any anomalous dispersion pattern which could be attributed to the presence of a deposit although the interpretation becomes problematic under the existing overburden conditions.

The magnetometer survey gave no indications of any structural features, zones of intense hydrothermal alteration causing the replacement and decay of magnetic rock components, or geological contacts similar to those favouring the location of other porphyry copper-molybdenum deposits in the district.

Because of the potential of the Highland Valley in general, the property should be kept in good standing as long as possible pending further development on neighbouring properties.

Respectfully submitted,

MACDONALD CONSULTANTS LTD.

H. Wober, P. Eng.

HW/st

NOR RHODE EXPLORATIONS LTD.

LORLA CLAIM GROUP, HIGHLAND VALLEY

Timesheet for Geochemical and Geophysical Survey

October, 1968 to January, 1969

Name	Month	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total Days in Month	Total Days
. Wober, P. Eng.	Oct.			1/6					1/6	4/6		1						1/6							1/6								2 2/6	3 2/6
Consultant	Jan.												2/3		1/3																		1	
A. . MacDonald, P.Eng.	Oct.			2/8								1/8						1/8															4/8	4/8
. . Dyson, B.Sc.	Nov.				2/8																												4/8	7/8
Geologist	Jan.													3/8																			3/8	
. P.Henry	Nov.																		4/8			3/8	1	1		4/8	1	1					5 3/8	11 2/8
Surveyor and	Dec.			1		3/8	1	1						1				6/8		4/8													5 5/8	
Magnetometer Operator	Jan.						2/8																										2/8	
D. F. Pontin	Oct.							1	1	1	1	1	1																				6	6
Party Leader																																		
. W. Foote	Oct.							1	1	1	1	1	1																				6	6
Party Leader																																		
S. A. Mckenzie	Oct.							1	1	1	1	1	1																				6	6
Soil Sampler																																		
. Birakowski	Nov.																		4/8		1		1	1	4/8		1	1		1			7	10 4/8
Soil Sampler	Dec.			1		1	4/8	1																									3 4/8	
. Gracie	Nov.																				4/8	4/8	1	1	4/8		1	1	1	1			7 4/8	12 4/8
Soil Sampler	Dec.			1	1	1	1	1																									5	
. Seale	Oct.																							4/8	4/8								1	7 5/8
Draftsman	Nov.				1	1	4/8																										2 4/8	
	Dec.																1	4/8															1 4/8	
	Jan.										4/8				1	6/8	3/8																2 5/8	

Note: The program was carried out in conjunction with work on other properties in the area for which reason the time schedule is given in tabulatory form.

64 7/12 days

TELEPHONE 681-7493

MacDONALD CONSULTANTS LTD.

SUITE 12 · 425 HOWE STREET, VANCOUVER, 1, B.C.

APPENDIX

Statement of Qualifications

All personnel except the line cutters were employed by MacDonald Consultants Ltd. of 12 - 425 Howe Street, Vancouver 1, B. C.

N. Weber, P. Eng. - See attached Certificate.

C. V. Dyson, B. Sc. Geologist

J. F. Henry - Surveyor and Magnetometer Operator

Field Manager

Engaged in mineral exploration across Canada for 18 years.

D. M. Poutin
K. W. Foote
S. A. McKenzie
G. Mirakowski
C. Gracie

= Prospectors and soil samplers trained by MacDonald Consultants Ltd.

G. Seale - Geological Draftsman, trained by Exploration Department United Keno Hill Mines and MacDonald Consultants Ltd.

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MACDONALD CONSULTANTS LTD.

SUITE 12 · 425 HOWE STREET, VANCOUVER, 1, B.C.

March 28, 1969

CERTIFICATE

I, Helmut Weber, with business and residential address in Vancouver, B. C. do hereby declare:

1. I am a consulting mining engineer.
2. I am a graduate of the Montanistische Hochschule Leoben, Austria, 1963.
3. I am a registered professional engineer in the Yukon and British Columbia.
4. I have gained experience in mining and exploration geology in positions of responsibility with Nordisk Mineselskab A/S in East Greenland in 1961 and 1962, with United Keno Hill Mines from 1964 to 1966. I held the position of Chief Mine Geologist with United Keno Hill Mines when I resigned to join MacDonald Consultants Ltd., in May, 1966.
5. I have personally studied all available information on the geology of the area and I have personally examined the property described.
6. I have no interest, direct or indirect in the properties and securities of Northlode Explorations Ltd. nor do I expect to receive any in the future.

Respectfully submitted,

MACDONALD CONSULTANTS LTD.

H. Weber

H. Weber, P. Eng.

HW/st

TELEPHONE 681-7493

MacDONALD CONSULTANTS LTD.

SUITE 12 - 425 HOWE STREET, VANCOUVER, 1, B.C.

MONTELOUE EXPLORATIONS LTD.

Cost of Geophysical and Geochemical Survey

Lorne Claim Group - Highland Valley

LABOUR & PROFESSIONAL SERVICES

		Oct.	Nov.	Dec.	Jan.	Total
A.J. MacDonald P. Eng.	2/3 days	$ 83.33	$	$	$	$ 83.33
H. Weber P. Eng.	3 1/3 days	233.33			125.00	358.33
K.W. Foote Party Leader	6 days	156.52				156.52
S.A. McKenzie Soil Sampler	6 days	104.35				104.35
D.M. Pontin Party Leader	6 days	169.57				169.57
G.H. Seale Draftsman	7 7/8 days	21.74	54.35	32.61	105.00	213.70
G. Mirahowski Labourer	10 1/2 days		129.35	64.67		194.02
C.V. Dyson Geologist	7/8 days		18.48		26.25	44.73
C. Gracie Soil Sampler	12 1/2 days		138.59	92.39		230.98
J.P. Henry Field Supt.	11 2/8 days		186.96	195.65	16.25	398.86
Fringe (Labour)		98.44	105.55	77.06		273.05
Fees		271.31	316.64	221.19		819.14
		$1,130.59	$949.92	$693.57	$272.50	$3,046.58

Line Cutting by Amax Mining Exploration Services:

G. Miller	6	days	$ 210.60	
C. Baird	6	days	210.60	
N. Giesbrecht	6	days	210.60	
E. Parsons	6	days	210.60	
A. Ablett	10	days	538.20	$1,380.60
				$4,427.18

CAMP SUPPLIES	Oct.	Nov.	Dec.	Jan.	Total
Super Value - Groceries	$ 167.49	$ 126.93	$ 32.53	$	$ 326.95
Flagging	11.97				11.97
Mark Drummond, Hardware (Propane, etc.)	30.51				30.51
Shell Canada Limited (Oil & Gasoline)		33.12			33.12
Cabin Rental			40.00		40.00
Phone Calls	7.20	2.65			9.85
Armstrong Dept. Store (Oil Cans & Propane)	15.16				15.16
J.P.Henry, Expense Account Saw Parts			4.16		4.16
J.P.Henry, Expense Account (Cabin Rental)		20.00			20.00
Miscellaneous	3.33				3.33
	$ 235.66	$ 182.70	$ 76.69		$ 493.05
TRAVEL					
J.P. Henry, Expense Account	$ 1.82	$ 33.23	$ 33.90	$	$ 68.95
D.M. Pontin, Expense Account (+Cabin Rental)	176.57				176.57
K.Weber, Expense Account	12.60				12.60
	$ 190.99	$ 33.23	$ 33.90		$ 258.12
EQUIPMENT RENTALS					
Truck	$ 56.85	$ 136.70	$ 76.00	$	$ 269.55
Camp & Geological Equipment	30.28	30.28			60.56
Skidoo		56.00	140.00		196.00
Magnetometer		68.00			68.00
Parkwood Shell			57.12		57.12
	$ 87.13	$ 290.98	$ 273.12		$ 651.23
SOIL DETERMINATIONS	$ 516.22	$ 782.50			$1,298.72
TOTALS	$3,541.19	$2,239.33	$1,077.28	$272.50	$7,130.30

AMEX
MINING
EXPLORATION
SERVICES

A. A. (AB) ABLETT
PHONE 376-7490
Box 286, KAMLOOPS, B. C.

March 21, 1969

Northlode Exploration Ltd.,
409 Granville Street,
Vancouver, B.C.

Dear Sirs:

The following is the breakdown of personnel engaged during linecutting of 15.34 miles on the northern half of your 'LOREX' group, in the Highland Valley, B.C. This is to be applied as part of assessment work for the yearMay 1, 1968 to April 30, 1969, in preparation for your geophysical program:

PERSONNEL	TIME EXPENDED	WAGES
G. Miller	6 days	$ 210.60
C. Baird	6 "	210.60
M. Giesbrecht	6 "	210.60
E. Persson	6 "	210.60
A. Ablett	10 "	538.20
		$ 1380.60

Yours truly,

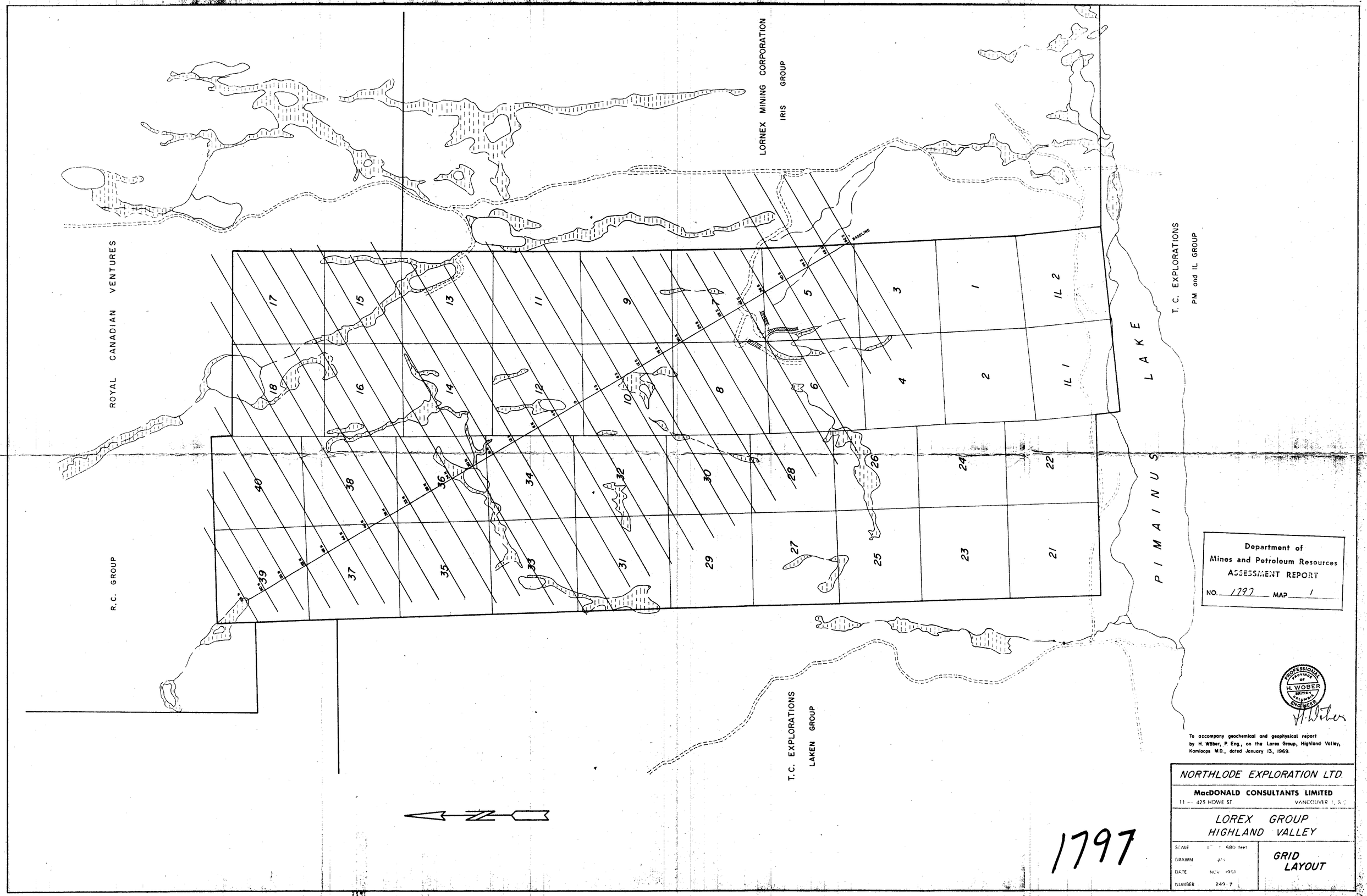
A. A. Ablett

Declared before me at the City of Vancouver, in the Province of British Columbia, this 28 day of March 1969, A.D.

H. Wolley

CONFIDENTIAL WORK
MAPPING
SURVEYING
LINE CUTTING
CLAIM STAKING
GEOCHEMICAL SURVEYS

Joan Turner
A Commissioner for taking Affidavits within British Columbia
for the Province of British Columbia
SUB-MINING RECORDER


LORNEX MINING CORPORATION
IRIS GROUP
ROYAL CANADIAN VENTURES
R.C. GROUP
T. C. EXPLORATIONS
P/M and IL GROUP
T.C. EXPLORATIONS
LAKEN GROUP
PIMAINUS LAKE
BASELINE
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IL 2
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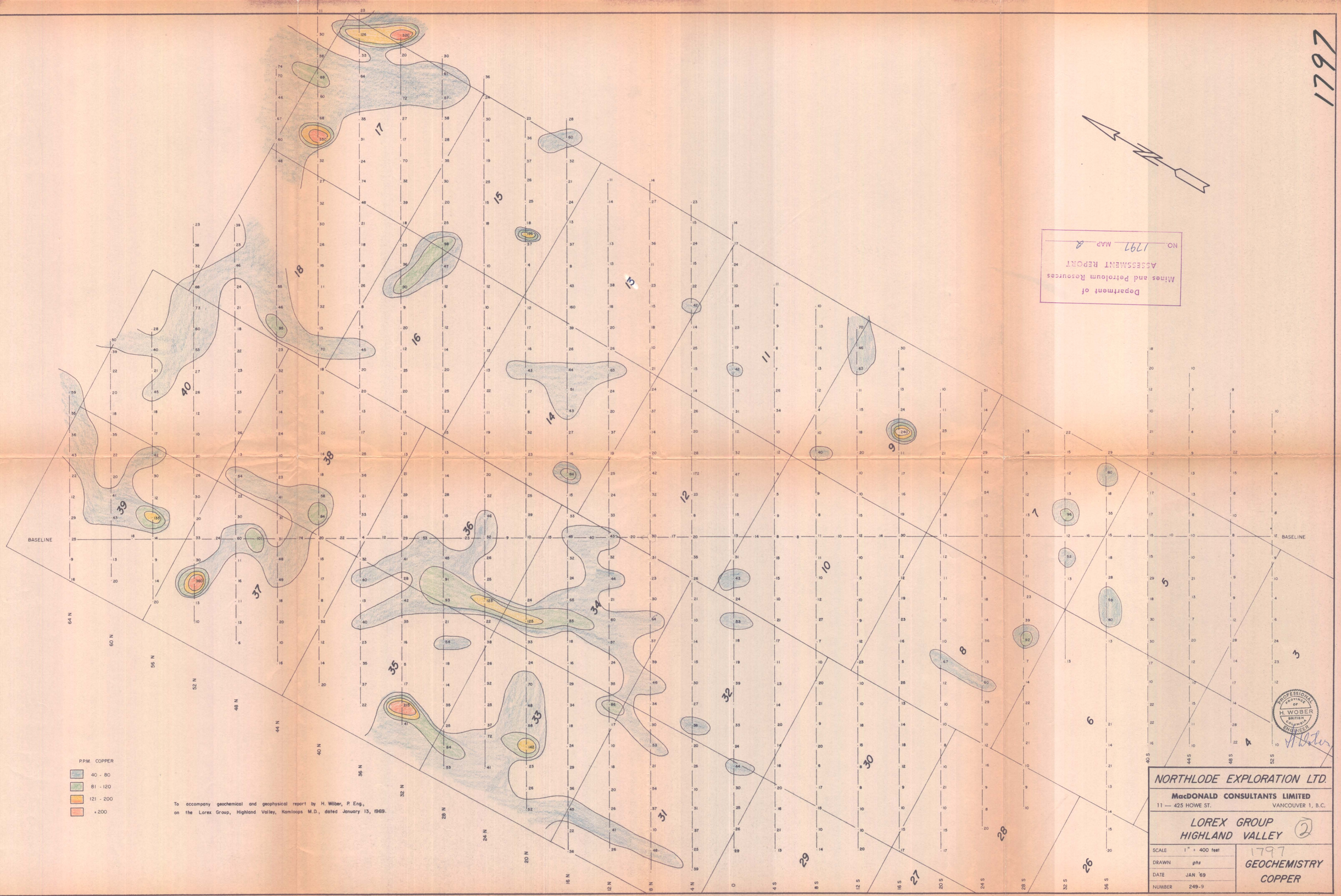
21
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1797 MAP 1
PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
H. WOBER
To accompany geochemical and geophysical report
by H. Wöber, P. Eng., on the Lorex Group, Highland Valley,
Kamloops M.D., dated January 13, 1969.
NORTHLODE EXPLORATION LTD.
MacDONALD CONSULTANTS LIMITED
11 — 425 HOWE ST. VANCOUVER 1, B.C.
LOREX GROUP
HIGHLAND VALLEY
SCALE 1" = 660 feet
DRAWN
DATE NOV. 1968
NUMBER 249-7
GRID LAYOUT
1797

1797



NORTHLODE EXPLORATION LTD.

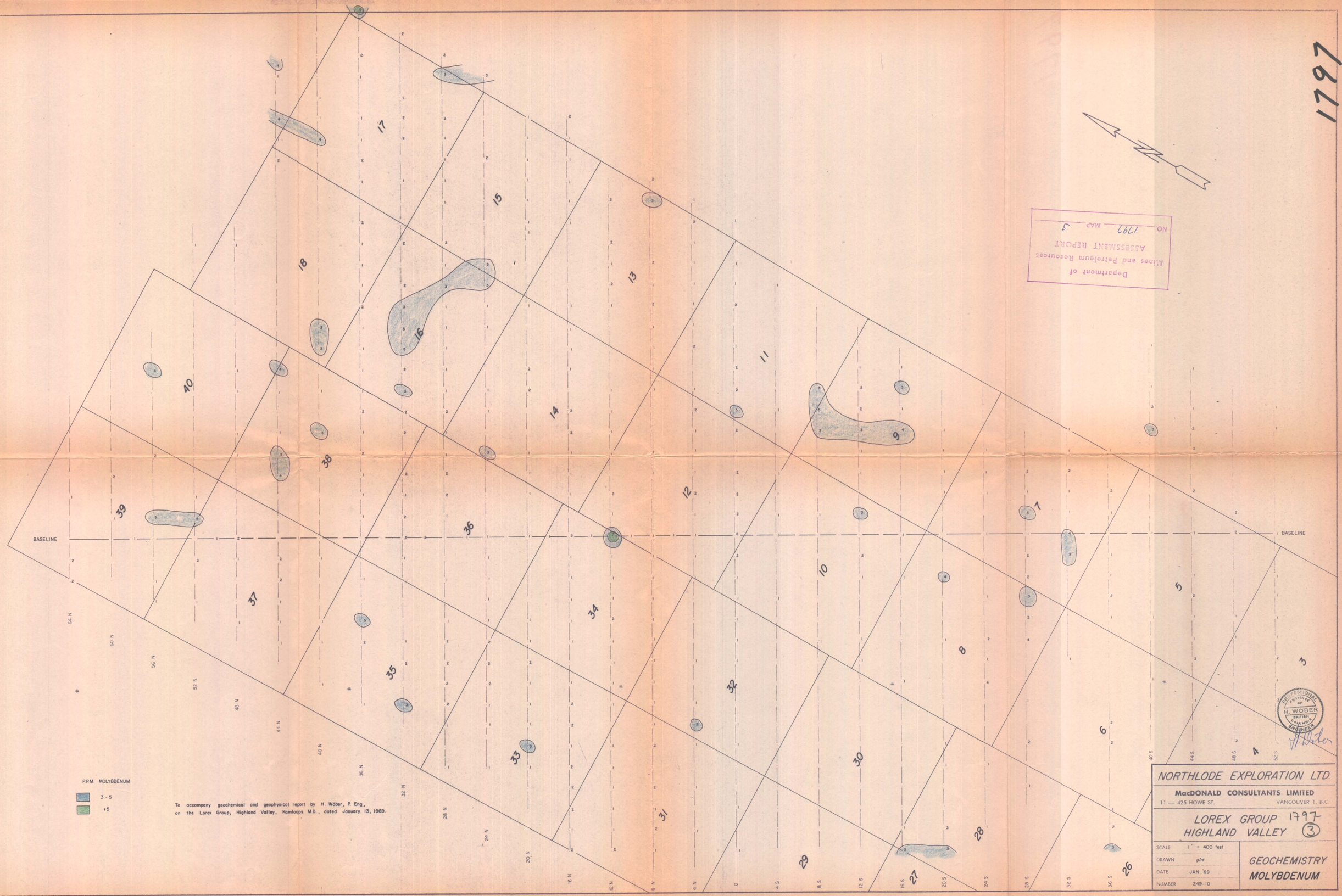
MacDONALD CONSULTANTS LIMITED
11 — 425 HOWE ST. VANCOUVER 1, B.C.

LOREX GROUP
HIGHLAND VALLEY (2)

SCALE	1" = 400 feet
DRAWN	ghs
DATE	JAN. '69
NUMBER	249-9

1797
GEOCHEMISTRY
COPPER

1797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20 N
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12 N
8 N
4 N
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4 S
8 S
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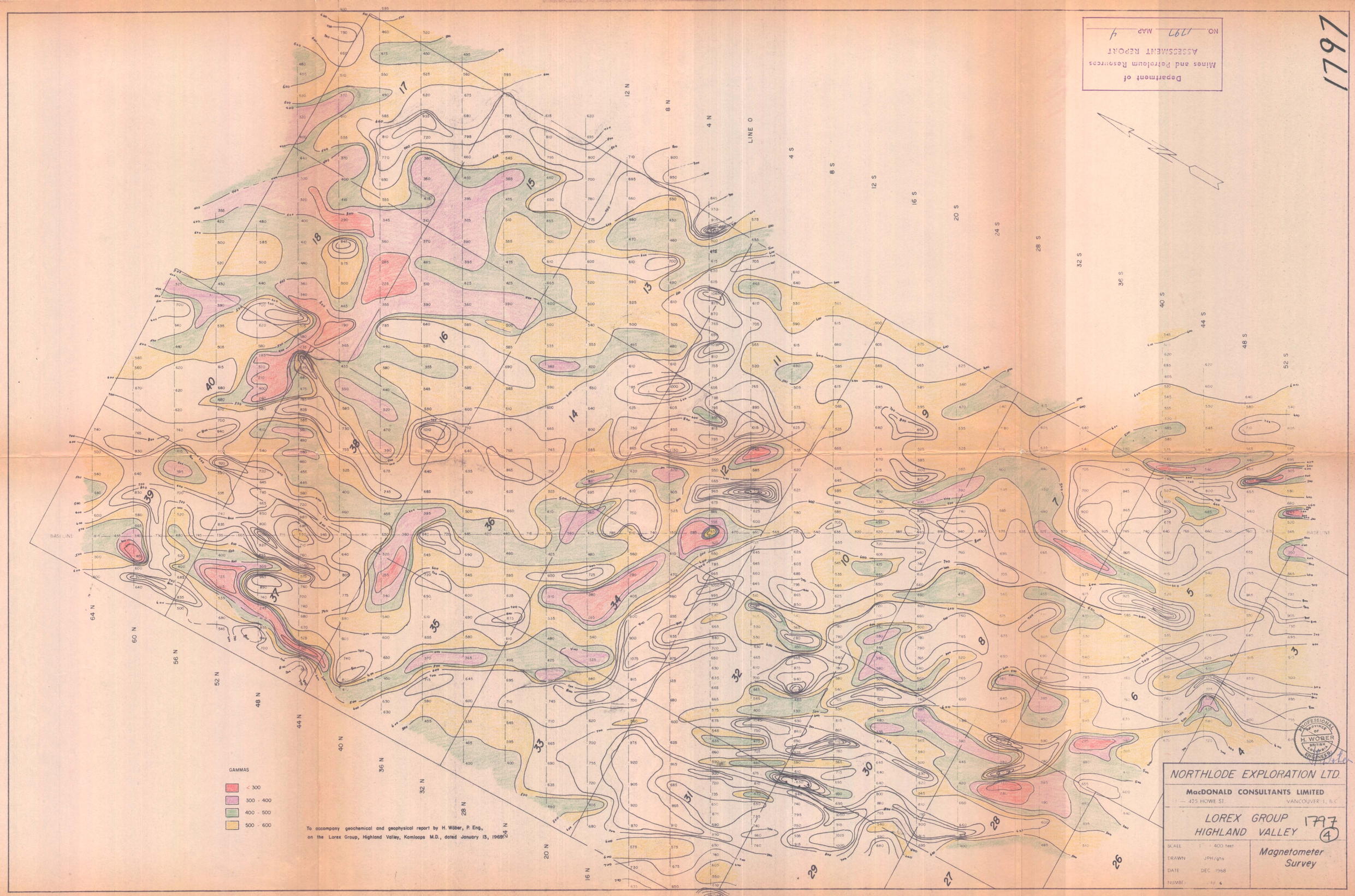
16 S
20 S
24 S
28 S
32 S
36 S
40 S
44 S
48 S
52 S
P.P.M. MOLYBDENUM
3 - 5
+5
To accompany geochemical and geophysical report by H. Wöber, P. Eng.,
on the Lorex Group, Highland Valley, Kamloops M.D., dated January 13, 1969.
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1797 MAP 3
PROFESSIONAL ENGINEER
PROVINCE OF
H. WOBER
BRITISH COLUMBIA
NORTHLODE EXPLORATION LTD.
MacDONALD CONSULTANTS LIMITED
11 — 425 HOWE ST.
VANCOUVER 1, B.C.
LOREX GROUP 1797
HIGHLAND VALLEY 3
SCALE 1" = 400 feet
DRAWN ghs
DATE JAN '69
NUMBER 249-10
GEOCHEMISTRY
MOLYBDENUM


Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 1797 MAP 4
1797
LINE O
BASE LINE
12 N
8 N
4 N
4 S
8 S
12 S
16 S
20 S
24 S
28 S
32 S
36 S
40 S
44 S
48 S
52 S
64 N
60 N
56 N
52 N
48 N
44 N
40 N
36 N
32 N
28 N
24 N
20 N
16 N
GAMMAS
< 300
300 - 400
400 - 500
500 - 600
To accompany geochemical and geophysical report by H. Wäber, P. Eng.,
on the Lorex Group, Highland Valley, Kamloops M.D., dated January 13, 1969
PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
H. WÄBER
NORTHLODE EXPLORATION LTD.
MacDONALD CONSULTANTS LIMITED
— 425 HOWE ST. VANCOUVER 1, B.C.
LOREX GROUP
HIGHLAND VALLEY
1797
4
SCALE 1" = 400 feet
DRAWN JPH/ghs
DATE DEC. 1968
NUMBER 6
Magnetometer Survey