82E/2 REPORT on THE LEXINGTON COPPER PROPERTY GREENWOOD, BRITISH COLUMBIA for LEXINGTON MINES LTD. (N.P.L.) by: R.W. Phendler, B.Sc., P.Eng. J.J. Crowhurst, B.A.Sc., P.Eng. 672617 March 23, 1970.

BACON & CROWHURST LTD. CONSULTING ENGINEERS

1720 - 1055 W. Hastings St., Vancouver, 1, B.C. March 23rd, 1970.

Mr. F. Reid, P.Eng., President, Lexington Mines Ltd., 1420 - 1075 W. Georgia St., Vancouver, 5, B.C.

Dear Mr. Reid:

Pursuant to your request, we are pleased to submit herewith a report concerning the exploration and other work completed to date at your Greenwood, B.C., copper property together with our conclusions and recommendations concerning future exploration.

We consider your property to be attractive in view of the exploration results to date, when considered in relation to its location in southern British Columbia.

Yours very truly,

BACON & CROWHURST LTD.

Contra J.J. Crowhurst

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REPORT

on

THE LEXINGTON COPPER PROPERTY GREENWOOD, BRITISH COLUMBIA

for

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

by

R.W. PHENDLER, B.Sc., P.Eng. J.J. CROWHURST, B.A.Sc., P.Eng.

Vancouver, B.C.

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March 23rd, 1970.

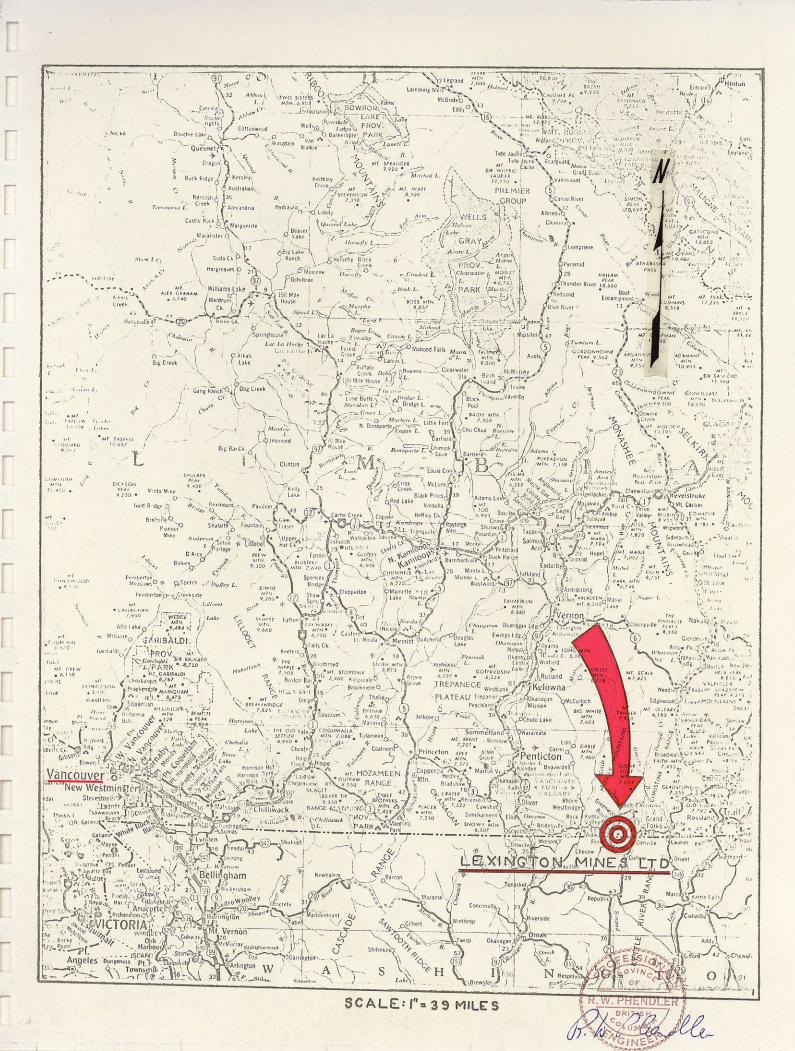


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SUMMARY AND CONCLUSIONS

The property of Lexington Mines Ltd. consists of approximately 4500 acres in the Greenwood area of British Columbia, situated south of the southern Trans-Provincial Highway and close to the Canadian-U.S.A. border.

The claims are underlain by mixed volcanic and sedimentary rocks of the Anarchist group of late Paleozoic age; these rocks are intruded by diorite and ultrabasic plugs. Where exploration has been conducted to date, copper mineralization has been found to be general, as demonstrated by outcrops and assay results from more than 10,000 feet of trenching and diamond drilling. Years ago, mineralized outcrops were responsible for underground exploratory work on the Mabel, Lexington and City of Paris properties.

In the past few years the principal exploration activity has taken place in the extreme southeastern corner of the claim group where a band of dacite, 600 feet thick, is sandwiched between two silllike bodies of serpentinized ultrabasic rocks. The dacite body is fractured throughout, sericitized and contains widespread disseminated pyrite and chalcopyrite.

An induced polarization survey conducted in 1968 revealed the presence of three zones of high chargeability, two of which are situated within this dacite body. These have been designated as "A", "B" and "C".

Diamond drilling, at 200' intervals, directed to test the southeast part of the "A" zone shows that encouraging concentrations of chalcopyrite occur near the upper and lower margins of the dacite in this area. Along the lower margin, a gently plunging zone of mineralization has been traced from the outcrop down the dip for a strike length of 600' with the extension downward still open. Intersections encountered so far by five diamond drill holes average 0.756% copper, 0.096 oz. of gold per ton and 0.105 oz. of silver per ton, cutting through an indicated average thickness of 75.0 feet. Drilling is presently attempting to extend this zone; little is known so far of its cross-sectional shape and area. The apparent width is, however, of the order of 200 feet, and the apparent dip is about 20°.

Insufficient diamond drilling has been completed to test copper mineralization found along the upper dacite margin or on other interesting parts of the "A" anomalous area. Correspondingly, the other two high chargeability areas, "B" and "C", have received only cursory attention to date.

Studies are being made relative to the economics of mining at a profit such mineralized zones in this part of British Columbia, either by open pit or by trackless underground methods, or by some combination of the two. Technology in trackless mining is advancing rapidly and attractive operating costs can be achieved by the use of relatively new types of underground machinery now available.

It should be noted that Greenwood, which is situated 3 miles from the property is served by the Trans-Provincial Highway, the Canadian Pacific Railway and the West Kootenay Light & Power Company; it can provide, with Grand Forks and other neighbouring villages, an ample supply of ordinary labour.

Vancouver, 280 miles by road from the property, affords complete exploration and other mining services.

RECOMMENDATIONS

The current diamond drill program should be continued to explore the lower dacite-serpentine copper mineralized zone situated in the "A" anomalous area at 200 foot intervals down the plunge to the southeast. At least three more cross-sections can thus be obtained before the length of the required drill holes would probably become excessive. Fill-in drilling will then be required to outline this upper section of the zone properly.

Finally, underground exploration will be required to establish accurately at close intervals the quantities and values in this mineralized zone, to obtain bulk samples for metallurgical testing and to observe rock conditions as related to mining considerations. The position and nature of this underground work will be dictated by the diamond drill results.

Funds should be provided, therefore, to either drive a decline approximately 10' x 8' in cross-section at minus 15° for a distance of 1500' with accompanying diamond and/or percussion drilling at close intervals, or to complete an equivalent amount of underground exploration with the same aim in view.

It should be noted that the decline can probably be positioned so as to serve for ore haulage later.

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Widely spaced exploration diamond drilling in the northwest part of zone "A" and the southeast part of zone "B" is recommended. The host rock is favourable, and the proximity of the anomaly to the dacite-serpentine contact is interesting. Geological mapping should be extended to cover all of the company's claim group in detail.

More detailed soil sampling is warranted in the centre of the property, with particular reference to the Lex claim group, where anomalous conditions are indicated by previous work. Any encouraging results should be further investigated by an induced polarization survey, followed by diamond drilling where favourable results are obtained.

It is recommended that the sum of \$517,500 be provided in order to complete the above program.

ESTIMATED COST - EXPLORATION PROGRAM

PHASE I

Zone "A"

"Step-out" diamond drilling - 9 holes x 700' = 6,300' "Fill in" diamond drilling - 15 holes x 500' = 7,500' 13,800' @ \$8/ft. = \$110,400 Zone "B" & Zone "C" Diamond drilling - 6000' @ \$8/ft. 48,000 General Exploration Geological mapping \$5,000 Soil sampling 5,000 Induced polarization survey 8,000 Follow-up diamond drilling (provision for) 3000' @ \$8/ft. 24,000 42,000 Administration & overhead (4 months) Geology, engineering consulting fees & supervision 12,000 Sampling & assaying 5,000 Vehicle operation & maintenance 2,000 Vancouver Office, including legal, audit, 12,000 insurance, accounting, etc. 31,000 \$231,400 Plus contingencies @ 5% 11,600 ESTIMATED COST - PHASE I \$243,000

PHASE II

Direct Costs

Decline - 1500' @ \$120/ft. Percussion drilling - 12,000' @ 75¢/ft.	\$180,000 9,000		
Diamond drilling - 2,000' @ \$5/ft.	10,000		
Bulk sampling & metallurgical test work	25,000	\$224,000	
Administration & overhead - 5 months			
Geology, engineering, consulting fees			
δ: supervision	15,000		
Sampling & assaying	5,000		
Vehicle operating & maintenance Vencouver Office including legal, audit,	2,500		
insurance, accounting, etc.	15,000	37,500	\$261,500
Plus contingencies @ 5%			13,000
ESTIMATED COST - PHASE II			\$274,500

Total estimated cost, Phase I & II

\$517,500

Respectfully submitted,

BACON & CROWHURST LTD.

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J.J. Crowhurst, B.A.Sc., P.Eng.

R. W. Thenklin, B. Sc., P. Eng.



INTRO DUCTION

On February 14th, 1970, Mr. R.W. Phendler, P.Eng., visited the Lexington Mines property accompanied by Mr. H. Shear, P.Eng., and Mr. F. Franchi. The City of Paris underground workings were examined and many mineral intersections in drill core were studied. Diamond drilling was in progress.

Previously, Mr. J.J. Crowhurst and Dr. W.R. Bacon visited the property on December 11th, 1969.

Since the examination, Mr. R.W. Phendler has studied all available data and discussed the property extensively with Mr. F. Reid, P.Eng., President of Lexington Mines Ltd.

LOCATION AND ACCESS

The property is at an elevation of 4000'-5000', close to the International Border. Greenwood, on the southern Trans-Provincial Highway (Route 3), is seven miles northwest of the property and about 280 road miles east of Vancouver.

Access to the Lexington property is by a good gravel road which starts from the highway two miles south of Greenwood. This road provides easy access to all parts of the claim group.

PROPERTY AND OWNERSHIP

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Lexington Mines Ltd. holds 27 Crown granted claims and /05 mineral leases and seventy-three adjacent mineral claims covering about 4500 acres. (See Appendix A). The claim group is irregular in shape and measures about 6000' by four miles, the long dimension bearing to the northwest.

The claims are in three groups as follows: Lexington group to the southeast, Lex group to the northwest and Lincoln group to the northeast. (See Fig. 2).

HISTORY

The claim group is in the famous old Phoenix-Greenwood mining camp where the first discoveries were made in 1890. During the subsequent thirty years, about 22 million tons of 1.5% copper ore was extracted. Most of this ore came from the Phoenix property and the remainder from small, scattered occurrences. The Lone Star Mine, just south of the International Border near the Lexington claims, was the largest of these small properties and produced 40,000 tons of ore grading 2.00% Cu, 0.032 oz. Au and 0.19 oz. Ag. Between 1920 and 1957 there was little mining activity in the area. In the latter year the old Phoenix property was re-appraised and brought into production as a lowgrade (0.80% Cu) open pit operation.

The producing claims on the present holdings of Lexington Mines were the Mabel which produced a little over 100 tons averaging 0.12 oz. Au and 0.34 oz. Ag and the City of Paris which yielded 2100 tons averaging 3.1% Cu, 0.40 oz. Au and 2.1 oz. Ag. In 1962 the old Mabel Mine was examined by King Midas Mines Ltd. but results from exploration work apparently did not warrant additional expenditures. Geochemical and geophysical surveys were carried out as was bulldozer stripping, diamond drilling and tunnelling. Lexington Mines Ltd. acquired these claims in 1967 and increased their holdings to the present dimensions by staking additional ground.

During 1968 the following work was carried out on the Lexington property:

- 1. Geochemical soil sampling of selected areas.
- Geological mapping of the southeastern third of the property (Lexington group) by Dr. R.H. Seraphim, P.Eng., geological consultant.
- Induced polarization survey conducted by Seigel Associates Ltd. of the southeastern third of the property (Lexington group).

Diamond drilling commenced on January 15th, 1969, and has continued to the present time. To the middle of February 1970, drilling totalled 13,261 feet with 23 holes completed. Extensive trenching was also carried out.

GEOLOGY AND MINERALIZATION (See Fig. 3)

The area in which the Lexington Mines property is located is underlain by mixed sedimentary and volcanic rocks of late Paleozoic age intruded by ultrabasic rocks and diorite of Cretaceous age. The sedimentary rocks are primarily argillites and quartzites whereas the volcanic rocks are andesites and dacites. All have a general northwesterly trend.

The diorite is a fine-grained, grey rock that forms irregular dykes and plugs. The Mabel Mine, about which little is known, is located in this rock type. The serpentine intrusives are sill-like bodies that enclose a thick band of dacite in the southeast part of the claim group. These formations strike northwest and dip at about 25° to the northeast. The enclosed dacite is medium-grained, pale grey-green in colour and forms the host rock for most mineral occurrences in the Lexington claim group. It is well sericitized and locally sheared.

The dacite, where explored by diamond drilling, is mineralized with disseminated pyrite and chalcopyrite. The band of dacite is about 600' thick and has been traced on surface for 6800'.

The better concentrations of copper mineralization appear to be confined to the upper and lower dacite-serpentine contacts. They are reported to be associated with shear zones although none have been positively identified. The old City of Paris Mine explored and developed small pods of chalcopyrite mineralization associated with the upper contact of the dacite and serpentine.

Late augite porphyry dykes intrude the dacite and appear to be spatially related to copper-bearing zones in the district. They are termed pulaskite dykes.

During the past year, twenty-three holes have been diamond drilled, almost all in the extreme southeastern portion of the claim group. In the past the hangingwall limit of the favourable dacite was thought to be the best locus for ore but the recent drilling has shown that the footwall is also favourable.

Of the numerous holes put down in the vicinity of the City of Paris workings, five have intersected an apparently continuous mineralized zone as follows:

D.H.	Core Intersection	% Cu	Oz. Au	Oz. Ag
#1	64.0*	0.61	0.015	0.15
11	53.0"	0.46	0.050	0.27
13	64.0*	1.08	0.090	0.14
4	80.0"	1.16	0.250	0.09
21	118.0*	0.52	0.060	0.09
Average	75.01	0.756	0.096	0.105

This footwall zone strikes northwesterly, dips to the northeast and plunges to the southeast at 20°. Its length is 600' and it is still open to the southeast. Cross-sectional shape and area of this mineral zone is not as yet known because drilling is incomplete. The present program is planned to extend the zone southeastward and to do some detailed drilling.

GEOPHYSICAL SURVEYS

In 1968, Seigel Associates Limited, geophysical contractors, conducted an induced polarization survey over part of the Lexington group. Line spacing was 400° and electrode spacing and station intervals were 200°. Results of the survey indicated that about 70% of the area covered is underlain by rocks exhibiting chargeabilities in excess of 6.0 milliseconds and ranging up to 26.0 milliseconds. Areas with chargeabilities in excess of 10.0 milliseconds (considered to be relatively high) are shown on the accompanying geological map (Fig. 3). They are designated Zones A, B and C.

A previously conducted, magnetometer survey shows that much of the property exhibits intensities in the 1000-2000 gamma range. These zones of high magnetic intensities are presumed to be underlain by serpentine. The area underlain by diorite is characterized by low IP chargeability and high resistivity.

The three major zones of high chargeability are discussed below:

Zone A This zone has a length of 3000' and is flanked on the north and south by magnetic features which correspond to bodies of serpentine. This zone coincides closely with an area underlain by dacite that is known to contain disseminated chalcopyrite. The two branches at the south end of the zone correspond with the upper and lower contacts of the dacite band. Concentrations of mineralization are known to exist on these contacts.

Zone B This zone is underlain by dacite and serpentine on the south and diorite on the north. Chargeabilities in excess of 20 milliseconds are noted and most of the zone lies within areas of low resistivity. One hole (D.D.H. 3) has been drilled on this zone and returned low copper values. Additional exploratory work is warranted here.

<u>Zone C</u> This zone trends southwesterly and lies northeast of the hangingwall serpentine band. It is not delineated on its north side and appears to be underlain by andesite, quartzite and argillite. This anomaly may be attributable to the argillite. Large magnetic anomalies have been outlined on the claims to the northwest (Lex group) and to the northeast (Lincoln group). The areas in which the anomalies are located have not been geologically mapped or covered by an induced polarization survey.

GEOCHEMICAL SURVEY

A geochemical survey conducted by Lexington Mines Ltd. in 1968 disclosed the presence of a significant copper soil anomaly over the mineralized dacite where the present drilling program is being carried out. This anomaly was confirmed by further work in 1969.

Some copper soil anomalies were found on the Lex group where values were in the 60-90 ppm range. (Background is considered to be around 30-40 ppm copper.)

Random high readings were found in the northwest portion of the Lexington group. Samples were taken on lines spaced 800' apart. Additional sampling is required here.

APPENDIX A - LIST OF CLAIMS

Crown Grant Claims

City of Denver	L1161
Lexington	L645
Oro	L614
No. 4	L791
Fanny H. Fr.	L1643
Mabel	L609
ND des Mines	L1095S
Oro Fr.	L1096S
City of Vancouver Fr.	L2013
Golden Cache Fr.	L955
Puyallop	L1152
City of Paris	L622
Lincoln	L621

Located Claims

Lex	1-4
Lex	5-18
Lex	20-43
Lex	Fr.
Lex	44-68,70
Lex	Frs. 2-5
Lex	19
	na 1-24
COL	21-6

Mineral Leases

Cornucopia No. 55 No. 66 Rob Roy Falcon Lady of the Lake Silver Duck Fr. Black Jack Marie Stuart Excelsior Cuba New Jack of Spades St. Lawrence Lex

26779-26782
26932-26945
26947-26970
26971
27007-27032
27159-27162
26946
19326
34584 - 34589

L608; M309 L1420S; M313 L1418S; M313 L1153; M219 L1640; M219 L1642; M219 L1648; M219 L5625; M335 L868; M310 L2609; M161 L1650; M173 L2084; M47R L595; M47R

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APPENDIX B

CERTIFICATION

I, Roy William Phendler, of the City of Vancouver in the Province of British Columbia, HEREBY CERTIFY AS FOLLOWS:

- 1. That I am a registered Professional Engineer in the Province of British Columbia, No. 4421.
- 2. That I am a graduate of McGill University, Montreal, Quebec, with a Bachelor of Science degree in geology.
- 3. That I have practiced my profession as geologist continuously for the past seventeen years in Quebec, Ontario, Saskatchewan and British Columbia in Canada; in some of the western U.S.A.; Mexico; and Peru and Colombia in South America.
- That I have no interest directly or indirectly in the mineral claims of Lexington Mines Ltd., nor do I expect to receive any.
- 5. That the information contained herein was compiled during an examination of the ground on February 14th, 1970.

P.L. Phadle P. Eng

R.W. PHENDLER R.W. PHENDLER BRITISH COLUMBIN SWGINEER

Vancouver, Canada. March 23rd, 1970.

CERTIFICATION

I, John James Crowhurst, of the City of Vancouver, in the Province of British Columbia, DO HEREBY CERTIFY THAT

- I am a practising mining engineer with Bacon & Crowhurst Ltd., Ste. 1720 - 1055 W.Hastings St., Vancouver, 1, B.C.
- 2. I am a graduate of the University of British Columbia and have been granted the degree of Bachelor of Applied Science.
- 3. I have been practising my profession as a mining engineer for 28 years.
- 4. I am a member of the Association of Professional Engineers of British Columbia, Registration No. 2120.

2 and april 2422-2522, 1971

- 5. On December 11th, 1969, I visited the Lexington Mines Ltd. property in the Greenwood area of British Columbia.
- 6. I nor any member of my firm have directly or indirectly received or expect to receive any interest direct or indirect in the property of the company or any affiliate nor do I nor any member of my firm beneficially own directly or indirectly any securities of the company or any affiliate.

Contract

J.J. Crowhurst, B.A.Sc., P.Eng.

Vancouver, Canada. March 23rd, 1970.

