

BY-LAW NO. 1C
OF
MICROMEM TECHNOLOGIES INC.
(the "Corporation")

Pursuant to a unanimous written consent of all the directors of the Corporation, the By-law No.1, as amended, of the Corporation is amended effective September 20, 2019 by adding the following sentence at the end of section 40:

"Any security of the Corporation may be issued and held in a book-entry-only form or a similar electronic book-entry style system."

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BY-LAW NO. 1B
OF
MICROMEM TECHNOLOGIES INC.

A BY-LAW TO AMEND SECTION 18 OF BY-LAW NO. 1 OF THE CORPORATION RESPECTING VOTING BY DIRECTORS AT MEETINGS OF THE BOARD OF DIRECTORS AND ENTITLEMENT TO A SECOND OR CASTING VOTE

BE IT ENACTED and it is hereby enacted as a by-law of Micromem Technologies Inc. (hereinafter, the "Corporation") as follows:


Section 18 of By-Law No. 1 of the Corporation entitled, "A By-Law Relating Generally to the Transaction of the Business and Affairs of Mine Lake Minerals Inc.", is hereby amended such that the following sentence:

"At all meetings of the board of directors, unless provided in the Act, every question shall be decided by a majority of the votes cast on the question and in case of an equality of votes, the meeting shall not be entitled to a second or casting vote."

is hereby removed in its entirety and replaced with the following sentence:

"At all meetings of the board of directors, unless provided in the Act, every question shall be decided by a majority of votes cast on the question and in case of an equality of votes, the Chairman shall be entitled to a second or casting vote."

PASSED the day of July, 2000.


Name: Sam Fuda
Title: Chairman

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BY-LAW NO. 1

A BY-LAW RELATING GENERALLY TO THE TRANSACTION OF THE BUSINESS AND AFFAIRS OF

MINE LAKE MINERALS INC.

BE IT ENACTED and it is hereby enacted as a by-law of

MINE LAKE MINERALS INC.

(hereinafter called the "Corporation") as follows:

GENERAL BUSINESS

Registered Office

1. The directors may from time to time by resolution fix the location of the registered office of the Corporation within the municipality or geographic township within Ontario as specified in its articles.

Seal

2. The Corporation shall have a corporate seal which shall be adopted and may be changed by resolution of the directors.

Financial Year

3. The first financial year of the Corporation shall terminate on a date to be determined by the directors of the Corporation and thereafter on the anniversary date thereof in each year, until changed by resolution of the directors of the Corporation.

Banking Arrangements

4. The banking business of the Corporation, or any part thereof, shall be transacted with such bank, trust company or other firm or corporation carrying on a banking business as the directors may designate, appoint or authorize from time to time by resolution and all such banking business or any part thereof shall be transacted on the Corporation's behalf by such one or more officers and/or other persons as the board may designate, direct or authorize from time to time by resolution and to the extent therein provided, including without restricting the generality of the foregoing, the operation of the Corporation's accounts; the making, signing, drawing, accepting, endorsing, negotiating, allotting, depositing or transferring of any cheques, promissory notes, drafts, acceptances, bills of exchange and orders for the payment of money; the giving of receipts for and orders relating to any property of the Corporation; the execution of any agreement relating to any banking business and defining the rights and powers of the parties thereto; and the authorizing of any officer of such banker to do any act or thing on the Corporation's behalf to facilitate such banking business.

Execution of Instruments

5. Deeds, transfers, assignments, contracts, obligations and other instruments in writing requiring the signature of the Corporation may be signed on behalf of the Corporation by the President alone.

and the corporate seal shall be affixed to such instruments as may be required by any person so authorized to sign on behalf of the Corporation.

Notwithstanding any provisions to the contrary contained in the by-laws of the Corporation, the directors may at any time and from time to time by resolution direct the manner in which, and the person or persons by whom any particular deed, transfer, contract, obligation or other instrument in writing, any class of deeds, transfers, contracts, obligations or other instruments in writing requiring signature by the Corporation may or shall be signed.

DIRECTORS

Power of Directors

6. The directors shall manage or supervise the management of the business and affairs of the Corporation unless otherwise specifically provided in any unanimous shareholder agreement.

Number of Directors and Quorum

7. Subject to the articles of the Corporation, the number of directors of the Corporation shall be that number of directors as specified in the articles or shall be that number of directors as determined from time to time by a special resolution within the minimum and maximum as permitted by the articles of the Corporation. A majority of the number of directors or minimum number of directors required by the articles shall constitute a quorum at any meeting of the directors. Notwithstanding vacancies, the remaining directors may exercise all the powers of the board of directors so long as a quorum of the board of directors remains in office.

Qualifications

8. Each director shall be eighteen (18) or more years of age and shall be an individual as defined by the Act. No person who is of unsound mind and has been so found by a court in Canada or elsewhere or who has the status of a bankrupt shall be a director. If a director acquires the status of a bankrupt or becomes of unsound mind and is so found, he shall thereupon cease to be a director.

Resident Canadians

9. A majority of the directors of the Corporation, other than a non-resident corporation as defined by the Act, shall be resident Canadians. Where the Corporation has only one or two directors, that director or one of the two directors, as the case may be, shall be a resident Canadian.

Transaction of Business

10. The board of directors shall not transact any business at a meeting of directors unless a majority of directors present are resident Canadians or unless the Corporation is a non-resident corporation as defined by the Act.

Election and Term

11. The directors shall be elected yearly to hold office until the next annual meeting of the shareholders of the Corporation or until their successors shall have been duly elected. The whole board shall be elected at each annual meeting and all the directors then in office shall retire, but, if qualified, are eligible for re-election. The election may be by a show of hands or by a resolution of the shareholders unless a ballot be demanded by any shareholder.

Removal of Directors

12. The shareholders may by ordinary resolution at an annual or special meeting of the shareholders of the Corporation remove any director from office. Notice of intention to pass any such resolution shall be given in the notice calling the meeting and the shareholders may by a majority of votes cast at that meeting elect a person otherwise qualified to fill the vacancy created by the removal of such director.

Vacancies

13. Except as hereinafter provided vacancies on the board of directors may be filled for the remainder of its term of office by qualified persons by the remaining directors if they constitute a quorum. If there is not a quorum of directors or if a vacancy results from a failure to elect the number of directors required to be elected at any meeting of shareholders or if a vacancy results from an increase in the number of directors where the directors are otherwise authorized by special resolution to determine the number of directors and the appointment of an additional director would result in a total number of directors greater than one and one third ($1 \frac{1}{3}$) times the number of directors required to have been elected at the last annual meeting of shareholders then the directors then in office shall forthwith call a special meeting of the shareholders to fill the vacancy and, if they fail to call a meeting or if there are no directors then in office, the meeting may be called by any shareholder.

Calling of Meetings

14. Meetings of the board of directors shall be held from time to time at such place, at such time and on such day as the President or a Vice-President who is a director or any two (2) directors may determine, and the Secretary shall call meetings when directed or authorized by the President or by a Vice-President who is a director or by any two (2) directors. Notice of every meeting so called shall be given to each director not less than forty-eight hours (excluding any part of a Sunday or Holiday as defined by the Interpretation Act of Canada for the time being in force) before the time when the meeting is to be held and such notice shall specify the general nature of any business to be transacted, save that no notice of a meeting shall be necessary if all the directors are present, and do not object to the holding of the meeting, or if those absent have waived notice of or have otherwise signified their consent to the holding of such meeting.

First Directors Meeting

15. After incorporation an incorporator or a director may call a meeting of the directors of the Corporation by the giving of not less than five (5) days notice thereof to each director stating the time and place of the meeting at which the directors may, make by-laws; adopt forms of security certificates and corporate records; authorize the issue of securities; appoint officers; appoint one or more auditors to hold office until the first annual or a special meeting of shareholders; make banking arrangements; and transact any other business.

Place of Meeting

16. Meetings of the board of directors may be held at the registered office of the Corporation or at any other place within or outside of Ontario; except that unless the Corporation is a non-resident corporation a majority of the meetings of the board of directors in any financial year shall be held at a place within Canada.

Participation by Telephone

17. With the unanimous consent of all the directors of the Corporation present at or participating in a meeting, a meeting of directors or of a committee of directors may be held by means of such telephone, electronic or other communication facilities as permit all persons participating in the meeting to communicate with each other simultaneously and instantaneously and a director participating in such a meeting by such means is deemed to be present at that meeting. If a majority of the directors participating at a meeting held as herein provided are then in Canada the meeting shall be deemed to have been held in Canada.

Votes to Govern

18. At all meetings of the board of directors, unless otherwise provided in the Act, every question shall be decided by a majority of the votes cast on the question and in case of an equality of votes, the Chairman of the meeting shall not be entitled to a second or casting vote.

Remuneration of Directors

19. The directors of the Corporation shall be paid such remuneration as may be determined by the board of directors. Any remuneration so payable to a director who is also an officer or employee of the Corporation or is counsel or solicitor of the Corporation or otherwise serves it in a professional capacity shall be, in addition to his salary as such officer, or his professional fees as the case may be. The directors shall also be paid such sums in respect of the out-of-pocket expenses incurred in attending board, committee or shareholder meetings or otherwise in respect of the performance by them of their duties as the board of directors may from time to time determine.

Transaction of Business by Signature

20. A resolution in writing signed by all the directors entitled to vote on that resolution at a meeting of directors or a committee of directors, is as valid as if it had been passed at a meeting of directors or a committee of directors.

One Director

21. Where the Corporation has only one director, that director may constitute a meeting.

Declaration of Interest

22. Every director or officer of the Corporation who, is a party to a material contract or transaction or proposed material contract or transaction with the Corporation, or is a director or an officer of, or has a material interest in, any person who is a party to a material contract or transaction or proposed material contract or transaction with the Corporation, shall disclose in writing to the Corporation or request to have entered in the minutes of the meeting of directors the nature and extent of his interest. All such disclosures shall be made at the time required by the applicable provisions of the Act and directors shall refrain from voting in respect of any such contract or transaction unless otherwise permitted by the Act.

Avoidance Standards

23. If a material contract is made or a material transaction is entered into between the Corporation and a director or officer of the Corporation or between the Corporation and any other person of which a director or officer of the Corporation is a director or officer or in which he has a material interest, the director or officer is not accountable to the Corporation or its shareholders for any profit or gain realized from the contract or transaction; and the contract or transaction is neither void or voidable, by reason only of that relationship or by reason only that the director is present at or is counted to determine the presence of a quorum at the meeting of directors that authorized the contract or transaction, if the director or officer disclosed his interest as hereinbefore provided and the contract or transaction was reasonable and fair to the Corporation at the time it was so approved. A director or officer acting honestly and in good faith is not accountable to the Corporation or to its shareholders for any profit or gain realized from any such contract or transaction by reason only of his holding the office of director or officer and the contract or transaction, if it was reasonable and fair to the Corporation at the time it was approved, is not by reason only of the director's or officer's interests therein void or voidable where, the contract or transaction is confirmed or approved by special resolution at a meeting of the shareholder's duly called for that purpose; and the nature and extent of the director's or officer's interest in the contract or transaction is disclosed in reasonable detail in the notice calling the meeting.

Standard of Care

24. Every director and officer of the Corporation in exercising his powers and discharging his duties shall, act honestly and in good faith with a view to the best interests of the Corporation; and exercise the care, diligence and skill that a reasonably prudent person would exercise in comparable circumstances. Every director and officer of the Corporation shall comply with the Act, the regulations, articles, by-laws and any unanimous shareholder agreement.

Indemnity of Directors and Officers

25. The Corporation shall indemnify the directors and officers of the Corporation, former directors or officers of the Corporation or a person who acts or acted at the Corporation's request as a director or officer of a body corporate of which the Corporation is or was a shareholder or creditor and his heirs and legal representatives against all costs, charges and expenses, including an amount paid to settle an action or satisfy a judgment, reasonably incurred by him in respect of any civil, criminal or administrative action or proceeding to which he is made a party by reason of being or having been a director or officer of the Corporation or body corporate and with the approval of the court in respect of an action by or on behalf of the Corporation or body corporate to procure a judgment in its favour to which he is made a party by reason of being or having been a director or officer of the Corporation or body corporate against all costs, charges and expenses reasonably incurred by him in connection with such action, if, he acted honestly and in good faith with a view to the best interests of the Corporation; and in the case of a criminal or administrative action or proceeding that is enforced by a monetary penalty, he had reasonable grounds for believing that his conduct was lawful.

Insurance for Directors and Officers

26. The Corporation may purchase and maintain insurance for the benefit of the directors or officers of the Corporation, former directors or officers of the Corporation or persons who act or acted at the Corporation's request as a director or officer of a body corporate of which the Corporation is or was a shareholder or creditor and his heirs and legal representatives against any liability incurred by him, in his capacity as a director or officer of the Corporation, except where the liability relates to his failure to act honestly and in good faith

with a view to the best interests of the Corporation; or in his capacity as a director or officer of another body corporate where he acts or acted in that capacity at the Corporation's request, except where the liability relates to his failure to act honestly and in good faith with a view to the best interests of the body corporate.

Financial Assistance

27. The Corporation or any corporation with which it is affiliated, shall not, directly or indirectly, give financial assistance by means of a loan, guarantee or otherwise, to any shareholder, director, officer or employee of the Corporation or affiliated corporation or to an associate of any such person for any purpose; or to any person for the purpose of or in connection with a purchase of a share or a security convertible into or exchangeable for a share, issued or to be issued by the Corporation or affiliated Corporation, where there are reasonable grounds for believing that, the Corporation is or after giving the financial assistance would be unable to pay its liabilities as they become due; or the realizable value of the Corporation's assets, excluding the amount of any financial assistance in the form of a loan and in the form of any secured guarantee, after giving the financial assistance, would be less than the aggregate of the Corporation's liabilities and stated capital of all classes. The Corporation may give financial assistance by means of a loan, guarantee or otherwise, to any person in the ordinary course of business if the lending of money is part of the ordinary business of the Corporation; to any person on account of expenditures incurred or to be incurred on behalf of the Corporation; to its holding body corporate if the Corporation is a wholly owned subsidiary of the holding body corporate; to a subsidiary body corporate of the Corporation; or to employees of the Corporation or any of its affiliates, to enable or assist them to purchase or erect living accommodation for their own occupation, or in accordance with a plan for the purchase of shares of the Corporation or any of its affiliates.

OFFICERS

Appointed Officers

28. The directors of the Corporation may from time to time designate the offices of the Corporation, appoint officers, specify their duties and, subject to the Act, delegate to them powers to manage the business and affairs of the Corporation. A director may be appointed to any office of the Corporation and two or more offices of the Corporation may be held by the same person. In the absence of a written agreement to the contrary, the board of directors may remove at its pleasure any officer of the Corporation. The terms of employment and remuneration of any officer so appointed by it shall be settled from time to time by the board of directors. Unless otherwise from time to time specified by the board of directors the offices of the Corporation, if so designated, and the officers so appointed shall have the following duties and powers.

President

29. The President shall, when present, preside at all meetings of the shareholders and of the board of directors and shall be charged with the general supervision of the business and affairs of the Corporation. Except when the board of directors has appointed a general manager or managing director, the President shall also have the powers and be charged with the duties of that office.

The President shall be appointed from amongst the directors.

Vice-President

30. During the absence or inability of the President his duties may be performed and his powers may be exercised by the Vice-President, or if there are more than one, by the Vice-President in order of seniority (as determined by the board of directors) save that no Vice-President shall preside at a meeting of the board of directors or at a meeting of shareholders who is not qualified to attend the meeting as a director, as the case may be. If a Vice-President exercises any such duty or power, the absence or inability of the President shall be presumed with reference thereto. A Vice-President shall also perform such duties and exercise such powers as the President may from time to time delegate to him or the board may prescribe.

General Manager

31. The General Manager, if one be appointed, shall have the general management and direction, subject to the authority of the board of directors and supervisor of the President, of the Corporation's business and affairs and the power to appoint and remove any and all officers, employees and agents of the Corporation not appointed directly by the board of directors and to settle the terms of their employment and remuneration. If and so long as the general manager is a director he may but need not be known as the Managing Director.

Secretary

32. The Secretary shall give, or cause to be given, all notices required to be given to shareholders, directors, auditors and members of committees; he shall attend all meetings of the directors and of the shareholders and shall enter or cause to be entered in books kept for that purpose minutes of all proceedings at such meetings; he shall be the custodian of the stamp or mechanical device generally used for affixing the corporate seal of the Corporation and of all books, papers, records, documents and other instruments belonging to the Corporation; and he shall perform such other duties as may from time to time be prescribed by the board of directors.

Treasurer

33. The Treasurer shall keep full and accurate books of account in which shall be recorded all receipts and disbursements of the Corporation and, under the direction of the board of directors, shall control the deposit of money, the safekeeping of securities and the disbursement of the funds of the Corporation; he shall render to the board of directors at the meetings thereof, or whenever required of him an account of all his transactions as Treasurer and of the financial position of the Corporation; and he shall perform such other duties as may from time to time be prescribed by the board of directors.

Other Officers

34. The duties of all other officers of the Corporation shall be such as the terms of their engagement call for or the board of directors requires of them. Any of the powers and duties of an officer to whom an assistant has been appointed may be exercised and performed by such assistant, unless the board of directors otherwise directs.

Variation of Duties

35. From time to time the board may vary, add to or limit the powers and duties of any officer or officers.

Agents and Attorneys

36. The board of directors shall have power from time to time to appoint agents or attorneys for the Corporation in or out of Canada with such powers of management or otherwise (including the power to sub-delegate) as may be thought fit.

Fidelity Bonds

37. The board of directors may require such officers, employees and agents of the Corporation as the board of directors deems advisable to furnish bonds for the faithful discharge of their duties, in such form and with such surety as the board of directors may from time to time prescribe.

SHARES**Allotment**

38. The board of directors may from time to time accept subscriptions and allot or grant options to purchase the whole or any part of the authorized and unissued shares in the Corporation including any shares created by an amendment to the articles of the Corporation to such person or persons or class of persons as the board of directors shall by resolution determine.

Payment of Commission

39. The directors may authorize the Corporation to pay a reasonable commission to any person in consideration of his purchasing or agreeing to purchase shares of the Corporation from the Corporation or from any other person, or procuring or agreeing to procure purchasers for any such shares.

Security Certificates

40. Every security holder including every shareholder shall be entitled, in the case of initial issuance without payment and in the case of any subsequent transfer upon payment of a fee of not more than three dollars (\$3.00) to a security certificate in respect of the securities held by him or to a non-transferable written acknowledgement of his right to obtain a security certificate from the Corporation in respect of the securities of the Corporation held by him. Security certificates shall be in such form or forms as the board of directors shall from time to time approve. Unless otherwise ordered by the board of directors, they shall be signed by the President or a Vice-President and by the Secretary or an assistant Secretary and need not be under the corporate seal; provided that certificates representing securities in respect of which a transfer agent and registrar (which term shall include a branch transfer agent and registrar) or trustee have been appointed shall not be valid unless countersigned by or on behalf of such transfer agent and registrar or trustee. If authorized by resolution of the board of directors, the corporate seal of the Corporation and the signature of one of the signing officers, or in the case of security certificates representing securities in respect of which a transfer agent and registrar or trustee have been appointed, the signatures of both signing officers, may be printed, engraved, lithographed, or otherwise mechanically reproduced in facsimile upon security certificates and every such facsimile signature shall for all purposes be deemed to be the signature of the officer whose signature it reproduces and shall be valid notwithstanding that one or both of the officers whose signature (whether manual or facsimile) appears thereon no longer holds office at the date of issue or delivery of the certificate.

Replacement of Security Certificates

41. The board of directors may by resolution prescribe, either generally or in a particular case, reasonable conditions upon which a new security certificate may be issued in lieu of and upon cancellation of the security certificate which has become mutilated or in substitution for a certificate which has been lost, stolen or destroyed.

Central and Branch Registers

42. The Corporation shall maintain a central securities register and a central register of transfers at its registered office or at any other place in Ontario designated by the directors and one or more branch securities register and register of transfers at such offices of the Corporation or other places either within or outside Ontario as designated by the directors. The board of directors may from time to time by resolution appoint a registrar, trustee or agent to keep the register of security holders and a transfer agent, trustee or other agent to keep the register of transfers and may also designate from time to time branch registers of security holders and branch registers of transfers. A registrar, trustee, transfer agent or other agent may but need not be the same individual or Corporation.

Transfer of Securities

43. Transfers of securities of the Corporation shall be registrable on the register of transfers or on one of the branch registers of transfers (if any) kept by or for the Corporation in respect thereof upon surrender of the security endorsed by the appropriate person together with such reasonable assurance as the Corporation shall require and subject to the other provisions of the Act relating to transfers and the restrictions on transfer set forth in the articles of the Corporation.

Dealings with Registered Holder

44. The Corporation and any trustee appointed in respect of a security may, subject to the Act, treat the registered holder of a security as a person exclusively entitled to vote, to receive notices, to receive any interest, dividend or other payments in respect of the security, and otherwise to exercise all the rights and powers of a holder of the security and is not required to inquire into the existence of, or see to the performance or observance of, any duty owed to a third person by a registered holder of any of its securities or by anyone whom it treats, as permitted or required by the Act, as the owner or registered holder thereof.

Lien on Shares

45. Subject to the provisions of the Act, the Corporation has a lien on a share registered in the name of a shareholder or his legal representative for a debt of that shareholder to the Corporation which lien may be realized by the sale or other disposition of such share or by any other method permitted by law.

SHAREHOLDERS

Annual Meetings

46. The annual meeting of shareholders shall, subject to the articles and any unanimous shareholder agreement be held at such place in or outside Ontario as the directors may determine for the purpose of hearing and receiving the reports and statements required by the Act to be read and laid before the shareholders at any annual meeting, electing directors, reappointing, if necessary, the incumbent auditor and fixing or authorizing the board of directors to fix his remuneration. No other business shall be transacted at an annual meeting of shareholders unless such meeting is also properly constituted as a special meeting of shareholders.

Special Meeting

47. The directors of the Corporation may at any time and from time to time call a special meeting of shareholders of the Corporation to be held at such time and at such place in or outside Ontario as the directors determine. The phrase "meeting of shareholders" wherever it occurs in this by-law shall mean and include the annual meeting of shareholders and a special meeting of shareholders and shall also include a meeting of any class or classes of shareholders.

Notices

48. No public notice or advertisement of any meeting of shareholders shall be required, but notice of the time and place of each such meeting shall be given not less than ten (10) days nor more than fifty (50) days before the day on which the meeting is to be held, to the auditor, if any, the directors and to each shareholder entitled to vote at the meeting. Notice of a special meeting of shareholders shall state or be accompanied by a statement of the nature of that special business in sufficient detail to permit the shareholder to form a reasoned judgment thereon; and the text of any special resolution or by-law to be submitted to the meeting. A meeting of shareholders may be held at any time without notice if all the shareholders entitled to vote thereat are present or represented by proxy and do not object to the holding of the meeting or those not present or represented by a proxy have waived notice, if all the directors are present or have waived notice and if the auditor, if any, is present or has waived notice.

Reports to Shareholders

49. Subject to the provisions of the Act a copy of the financial statements for the period that began immediately after the end of the last completed financial year and ended not more than six (6) months before the annual meeting, a copy of the auditor's report, if any, and any further information respecting the financial position of the Corporation and the results of its operations required by the articles, the by-laws or any unanimous shareholder agreement shall be sent to each shareholder not less than ten (10) days before each annual meeting of shareholders or before the transaction of the annual business of the Corporation pursuant to paragraph 62 hereof.

Persons Entitled to be Present

50. Persons entitled to attend a meeting of shareholders shall be those entitled to vote thereat, the auditor, if any, of the Corporation, the directors of the Corporation and others who although not entitled to vote are entitled or required under the provisions of the Act or by-laws of the Corporation or any unanimous shareholder agreement to be present at the meeting. Any other person may be admitted only on the invitation of the Chairman of the meeting or with the consent of the meeting.

Record Date

51. The directors may fix in advance a date preceding by not more than fifty (50) days or by less than twenty-one (21) days a record date for the determination of persons entitled to receive notice of a meeting of shareholders and notice thereof shall be given not less than seven (7) days before the date so fixed by advertisement and by notice as provided in the Act. The directors may also fix in advance the date as the record date for the purpose of determining shareholders, entitled to receive payment of a dividend; entitled to participate in a liquidation or distribution; or for any other purpose except the right to receive notice of or to vote at a meeting which such record date shall not precede by more than fifty (50) days the date on which such particular action is to be taken and notice thereof shall be given as hereinbefore provided.

Quorum

52. Two persons present in person and each entitled to vote thereat shall constitute a quorum for the transaction of business at any meeting of shareholders.

Right to Vote

53. At each meeting of shareholders every shareholder shall be entitled to vote who is entered on the books of the Corporation as a holder of one or more shares carrying the right to vote at such meeting in accordance with a shareholder list which, in the case of a record date shall be prepared not later than ten (10) days after such record date and where there is no record date at the close of business on the day immediately preceding the day on which notice is given or where no notice is given on the day on which the meeting is held. Where a person has transferred any of his shares after the date on which the list hereinbefore referred to was prepared and the transferee produces satisfactory evidence in accordance with the provisions of the Act not later than ten (10) days before the meeting that such person owns shares in the Corporation such transferee is entitled to vote his shares at the meeting. Where a share or shares have been mortgaged or hypothecated, the person who mortgaged or hypothecated such share or shares (or his proxy) may nevertheless represent the shares at meetings and vote in respect thereof unless in the instrument creating the mortgage or hypothec he has expressly empowered the holder of such mortgage or hypothec to vote thereon, in which case such holder (or his proxy) may attend meetings to vote in respect of such shares upon filing with the Secretary of the meeting sufficient proof of the terms of such instrument.

Representatives

54. An executor, administrator, committee of a mentally incompetent person, guardian or trustee and where a Corporation is such executor, administrator, committee, guardian or trustee of a testator, intestate, mentally incompetent person, ward or cestui que trust, any person duly appointed a proxy for such corporation, upon filing with the Secretary of the meeting sufficient proof of his appointment, shall represent the shares in his or its hands at all meetings of the shareholders of the Corporation and may vote accordingly as a shareholder in the same manner and to the same extent as the shareholder of record. If there be more than one executor, administrator, committee, guardian or trustee, the provisions of paragraph 56 shall apply.

Proxies

55. Every shareholder entitled to vote at a meeting of shareholders may by means of a proxy appoint a proxy holder or one or more alternate proxy holders, who need not be shareholders, as his nominee to attend and act at the meeting in manner, to the extent and with the authority conferred by the proxy. The instrument appointing a proxy shall be executed by the shareholder or his attorney authorized in writing or, if the shareholder is a body corporate, by an officer or attorney thereof duly authorized and shall cease to be valid after the expiration of one year from the date thereof. The instrument appointing a proxy shall comply with the provisions of the Act and regulations thereto and shall be in such form as the directors may from time to time prescribe or in such other form as the Chairman of the meeting may accept as sufficient and shall be deposited with the Secretary of the meeting before any vote is cast under its authority, or at such earlier time and in such manner as the board or directors may prescribe in accordance with the Act.

Joint Shareholders

56. Where two or more persons hold shares jointly, one of those holders present at a meeting of shareholders may in the absence of the others vote the shares, but if two or more of those persons are present, in person or by proxy, they shall vote as one of the shares jointly held by them.

Scrutineers

57. At each meeting of shareholders one or more scrutineers may be appointed by a resolution of the meeting or by the Chairman with the consent of the meeting to serve at the meeting. Such scrutineers need not be shareholders of the Corporation.

Votes to Govern

58. At all meetings of shareholders every question shall, unless otherwise required by the articles or by-laws of the Corporation or by the Act, be decided by the majority of the votes duly cast on the question.

Show of Hands

59. At all meetings of shareholders every question shall be decided by a show of hands unless a poll thereon be required by the Chairman or be demanded by any shareholder present in person or represented by proxy and entitled to vote. Upon a show of hands every person present and entitled to vote shall have one vote. After a show of hands has been taken upon any question the Chairman may require or any shareholder present in person or represented by proxy and entitled to vote may demand a poll thereon. Whenever a vote by show of hands shall have been taken upon a question, unless a poll thereon be so required or demanded, a declaration by the Chairman of the meeting that the vote upon the question has been carried or carried by a particular majority or not carried and an entry to that effect in the minutes of the proceedings at the meeting shall be *prima facie* evidence of the fact without proof of the number or proportions of the votes recorded in favour of or against any resolution or other proceeding in respect of the said question, and the result of the vote so taken shall be the decision of the Corporation in annual or special meeting, as the case may be, upon the question. A demand for a poll may be withdrawn at any time prior to the taking of the poll.

Polls

60. If a poll be required by the Chairman of the meeting or be duly demanded by any shareholder and the demand be not withdrawn, a poll upon the question shall be taken in such manner as the Chairman of the meeting shall direct. Upon a poll each shareholder who is present in person or represented by proxy shall be entitled to one vote for each share in respect of which he is entitled to vote at the meeting and the result of the poll shall be the decision of the Corporation in annual or special meeting, as the case may be, upon the question.

Casting Vote

61. In case of an equality of votes at any meeting of shareholders, either upon a show of hands or upon a poll, the Chairman of the meeting shall not be entitled to a second or casting vote.

Adjournment

62. The Chairman of the meeting of shareholders may, with the consent of the meeting and subject to such conditions as the meeting may decide, or where otherwise permitted under the provisions of the Act, adjourn the meeting from time to time and from place to place.

Transaction of Business by Signature

63. Subject to the provisions of the Act, a resolution in writing signed by all the shareholders entitled to vote on that resolution at a meeting of shareholders is as valid as if it had been passed at a meeting of shareholders; and a resolution in writing dealing with all matters required by this Act, be dealt with at a meeting of shareholders and signed by all the shareholders entitled to vote at that meeting, satisfies all other requirements of the Act relating to that meeting of shareholders.

One Shareholder

64. Where the Corporation has only one shareholder, all business which the Corporation may transact at an annual or special meeting of shareholders shall be transacted

Dividends

65. The board of directors may from time to time declare dividends payable to shareholders according to their respective rights and interests in the Corporation. The Corporation may pay a dividend by issuing fully paid shares of the Corporation or options or rights to acquire fully paid shares of the Corporation and the Corporation may pay a dividend in money or property. A dividend payable in money shall be paid by cheque drawn on the Corporation's bankers or one of them to the order of each registered holder of shares of the class in respect of which it has been declared and mailed by ordinary mail, postage prepaid, to such registered holder at his last address appearing on the books of the Corporation. In the case of joint holders the cheque shall, unless such joint holders otherwise direct, be made payable to the order of all such joint holders and if more than one address appears on the books of the Corporation in respect of such joint holding the cheque shall be mailed to the first address so appearing. The mailing of such cheque as aforesaid shall satisfy and discharge all liability for the dividend to the extent of the sum represented thereby, unless such cheque be not paid at par on due presentation. In the event of non-receipt of any cheques for dividends by the person to whom it is so sent as aforesaid, the Corporation on proof of such non-receipt and upon satisfactory indemnity being given to it, shall issue to such person a replacement cheque for a like amount. Any dividend which remains unclaimed after a period of twelve (12) years after the date on which it has been declared payable shall be forfeited and revert to the Corporation.

NOTICES

Method of Giving

66. Any notice, communication or other document to be given by the Corporation to a shareholder, director, officer or auditor of the Corporation under any of the provisions of the articles or by-laws or the Act shall be sufficiently given if sent to such shareholder, director, officer or auditor by prepaid mail addressed to, or may be delivered personally to, a shareholder at his last address as shown on the records of the Corporation or its transfer agent; and a director, officer or auditor at his last address as shown in the records of the Corporation or in the case of a director or officer in the most recent notice filed under the Corporations Information Act, whichever is the more current. A notice or document sent by prepaid mail as hereinbefore provided to a shareholder, director, officer or auditor of the Corporation shall be deemed to be received by the addressee on the fifth day after mailing. Where the Corporation sends a notice or document to a shareholder by prepaid mail as hereinbefore provided and the notice or document is returned on three consecutive occasions because the shareholder cannot be found, the Corporation is not required to send any further notices or documents to the shareholder until he informs the Corporation in writing of his new address.

Computation of Time

67. In computing the date when notice must be given under any provision of the articles or by-laws requiring a specified number of days' notice of any meeting or other event, the date of giving the notice and the date of the meeting or other event shall be excluded.

Omissions and Errors

68. The accidental omission to give any notice to any shareholder, director, officer or auditor or any error in any notice not affecting the substance thereof shall not invalidate any action taken at any meeting held pursuant to such notice or otherwise founded thereon.

Notice to Joint Shareholders

69. All notices with respect to any shares registered in more than one name may if more than one address appears on the books of the Corporation in respect of such joint holding, be given to such joint shareholders at the first address so appearing, and notice so given shall be sufficient notice to all the holders of such shares.

Persons Entitled by Death or Operation of Law

70. Every person who by operation of law, transfer, death of a shareholder or by any means whatsoever, shall become entitled to any share or shares, shall be bound by every notice in respect of such share or shares which shall have been duly given to the person from whom he derives his title to such share or shares, previously to his name and address being entered on the books of the Corporation (whether it be before or after the happening of the event upon which he became entitled).

Waiver of Notice

71. Where a notice or document is required by the Act, or the articles or by-laws of the Corporation to be sent, the notice may be waived or the time for sending the notice or document may be waived or abridged at any time with the consent in writing of the person entitled thereto.

INTERPRETATION

72. In this by-law and all other by-laws of the Corporation, words importing the singular number only shall include the plural and vice-versa; words importing the masculine gender shall include the feminine and neuter genders; words importing persons shall include individuals, sole proprietorships, partnerships, unincorporated associations, unincorporated syndicates, unincorporated organizations, trusts, body corporates and natural persons in their capacity as trustees, executors, administrators or other legal representatives; "resident Canadian" means an individual who is determined to be a resident Canadian as defined by the Act; "articles" shall include the original or restated articles of incorporation, articles of amendment, articles of amalgamation, articles of continuance, articles of reorganization, articles of arrangement, articles of dissolution, articles of revival and any amendments thereto; the "Act" shall mean the Business Corporations Act, 1982 as amended from time to time or any act that may hereafter be substituted therefor.

PASSED the 21st day of October, 1985

WITNESS the corporate seal of the Corporation.



President



Secretary c/s



BE IT RESOLVED THAT By-Law Number 1 being a by-law relating generally to the transaction of the business and affairs of the Corporation be and the same is hereby made as a by-law of the Corporation and the President and the Secretary be and they are hereby authorized to sign the by-law and to apply the corporate seal thereto.

THE UNDERSIGNED, being all the directors of the Corporation hereby sign the foregoing resolution pursuant to the provisions of the Business Corporations Act, 1982.

DATED the 21st day of October, 1985

[Signature]
JOHN EVERSOLEY
[Signature]
RICHARD LACHOIX
[Signature]
MARK MICKLEBOROUGH

BE IT RESOLVED THAT By-Law Number 1 being a by-law relating generally to the transaction of the business and affairs of the Corporation be and the same is hereby confirmed without amendment as a by-law of the Corporation.

THE UNDERSIGNED, being all the shareholders of the Corporation hereby sign the foregoing resolution pursuant to the provisions of the Business Corporations Act, 1982.

DATED the 21st day of October, 1985

[Signature]
GLEN ERIKSON
GYRO CAPITAL INC
per: [Signature]
A.S.O.

BY-LAW NUMBER 2

A BY-LAW RESPECTING THE BORROWING OF MONEY, THE ISSUING OF DEBT OBLIGATIONS AND THE SECURING OF LIABILITIES

BE IT ENACTED and it is hereby enacted as a by-law of

MINE LAKE MINERALS INC.

(hereinafter called the "Corporation") as follows:

The directors of the Corporation may from time to time:

- (a) Borrow money on the credit of the Corporation;
- (b) Issue, reissue, sell or pledge debt obligations of the Corporation but no invitation shall be extended to the public to subscribe for any such debt obligations;
- (c) Subject to the Business Corporations Act, 1982, give a guarantee on behalf of the Corporation to secure performance of an obligation of any person;
- (d) Mortgage, hypothecate, pledge or otherwise create a security interest in all or any property of the Corporation, owned or subsequently acquired, to secure any obligation of the Corporation; and
- (e) Delegate the powers conferred on the directors under this by-law to a director, a committee of directors or an officer of the Corporation to such extent and in such manner as the directors shall by resolution determine.

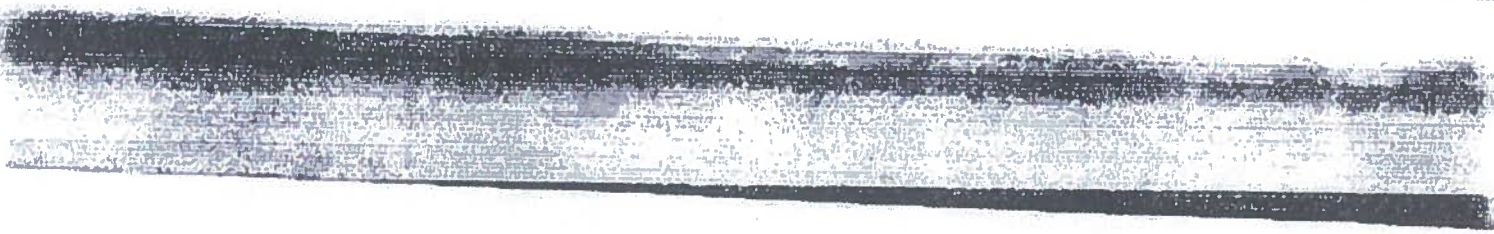
PASSED the 21st day of October 1985

WITNESS the corporate seal of the Corporation.



 President


 _____ c/s
 Secretary



BE IT RESOLVED THAT By-Law Number 2 being a by-law relating generally to the borrowing of money by the Corporation be and the same is hereby made as a by-law of the Corporation and the President and the Secretary be and they are hereby authorized to sign the by-law and to apply the corporate seal thereto.

THE UNDERSIGNED, being all the directors of the Corporation hereby sign the foregoing resolution pursuant to the provisions of the Business Corporations Act, 1982.

DATED the 21st day of October, 1985

JOHN EVERSLEY

RICHARD LACHYK

MARK MICKLEBOROUGH

BE IT RESOLVED THAT By-Law Number 2 being a by-law relating generally to the borrowing of money by the Corporation be and the same is hereby confirmed without amendment as a by-law of the Corporation.

THE UNDERSIGNED, being all the shareholders of the Corporation hereby sign the foregoing resolution pursuant to the provisions of the Business Corporations Act, 1982.

DATED the 21st day of October, 1985

Glen Erikson

GYRO CAPITAL INC.

per: _____

A.S.O.