

BY-LAW NO. 1

A by-law relating generally to
the conduct of the affairs of

ECOSYNTHETIX INC.

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BE IT ENACTED AND IT IS HEREBY ENACTED as a by-law of EcoSynthetix Inc. (the "Corporation") as follows:

SECTION ONE

INTERPRETATION

1.01 Definitions

In the by-laws of the Corporation, unless the context otherwise requires:

- (1) "Act" means the Business Corporations Act, R.S.O. 1990 c. B.16 and the regulations under the Act, as from time to time amended, and every statute that may be substituted therefor and, in the case of such substitution, any reference in the by-laws of the Corporation to provisions of the Act shall be read as references to the substituted provisions therefor in the new statute or statutes;
- (2) "appoint" includes "elect" and vice versa;
- (3) "articles" means the articles of the Corporation as from time to time amended or restated;
- (4) "board" means the board of directors of the Corporation;

- (5) "by-laws" means this by-law and all other by-laws of the Corporation from time to time in force and effect;
- (6) "meeting of shareholders" includes an annual meeting of shareholders and a special meeting of shareholders; "special meeting of shareholders" includes a meeting of any class or classes of shareholders and a special meeting of all shareholders entitled to vote at an annual meeting of shareholders;
- (7) "non-business day" means Saturday, Sunday and any other day that is a holiday as defined in the Interpretation Act (Ontario);
- (8) "recorded address" means in the case of a shareholder his address as recorded in the securities register; and in the case of joint shareholders the address appearing in the securities register in respect of such joint holding or the first address so appearing if there is more than one; and in the case of a director, officer, auditor or member of a committee of the board his latest address as recorded in the records of the Corporation;
- (9) "*Securities Transfer Act*" means the *Securities Transfer Act* (Ontario) 2006, c.8. as amended from time to time;
- (10) "signing officer" means, in relation to any instrument, any person authorized to sign the same on behalf of the Corporation by paragraph 2.03 or by a resolution passed pursuant thereto;
- (11) all terms contained in the by-laws that are not otherwise defined in the by-laws and which are defined in the Act, such as "resident Canadian", shall have the meanings given to such terms in the Act; and
- (12) the singular shall include the plural and the plural shall include the singular; the masculine shall include the feminine and neuter genders; and the word "person" shall include individuals, bodies corporate, corporations, companies, partnerships, syndicates, trusts, unincorporated organizations and any number or aggregate of persons.

1.02 Conflict with Laws

In the event of any inconsistency between the by-laws and mandatory provisions of the Act or the *Securities Transfer Act*, the provisions of the Act or the *Securities Transfer Act*, as applicable, shall prevail.

SECTION TWO

BUSINESS OF THE CORPORATION

2.01 Corporate Seal

The Corporation may, but need not adopt a corporate seal and if one is adopted it shall be in such form as the directors may by resolution adopt from time to time.

2.02 Financial Year

The financial year of the Corporation shall be as determined by the board from time to time.

2.03 Execution of Instruments

Contracts, documents or instruments in writing requiring the signature of the Corporation may be signed on behalf of the Corporation by any one officer or director, and instruments in writing so signed shall be binding upon the Corporation without any further authorization or formality. The board shall have power from time to time by resolution to appoint any officer or officers or any person or persons or any legal entity on behalf of the Corporation either to sign contracts, documents and instruments in writing generally or to sign specific contracts, documents or instruments in writing.

The seal of the Corporation, if any, may when required be affixed to contracts, documents and instruments in writing signed as set out above or by any officer or officers, person or persons, appointed as set out above by resolution of the board.

The term "contracts, documents or instruments in writing" as used in this by-law shall include deeds, mortgages, hypothecs, charges, conveyances, transfers and assignments of property, real or personal, movable or immovable, agreements, releases, receipts and discharges for the payment of money or other obligations, conveyances, transfers and assignments of shares, share warrants, stocks, bonds, debentures, notes or other securities and all paper writings.

The signature or signatures of the Chairman of the Board (if any), the Vice-Chairman of the Board, the President, any Executive Vice-President, or any Vice-President together with any one of the Secretary, the Treasurer, an Assistant Secretary, an Assistant Treasurer or any one of the foregoing officers together with any one director of the Corporation and/or any other officer or officers, person or persons, appointed as aforesaid by resolution of the board may, if specifically authorized by resolution of the directors, be printed, engraved, lithographed or otherwise mechanically or electronically reproduced upon any contracts, documents or instruments in writing or bonds, debentures, notes or other securities of the Corporation executed or issued by or on behalf of the Corporation and all contracts, documents or instruments in writing or bonds, debentures, notes or other securities of the Corporation on which the signature or signatures of any of the foregoing officers or directors or persons authorized as aforesaid shall be so reproduced pursuant to special authorization by resolution of the board, shall be deemed to have been manually signed by such officers or directors or persons whose signature or signatures is or are so reproduced and shall be as valid to all intents and purposes as if they had been signed manually and notwithstanding that the officers or directors or persons whose signature or signatures is or are so reproduced may have ceased to hold office at the date of the delivery or issue of such contracts, documents or instruments in writing or bonds, debentures, notes or other securities of the Corporation.

2.04 Banking Arrangements

The banking business of the Corporation, or any part thereof, including, without limitation, the borrowing of money and the giving of security therefor, shall be transacted with such banks, trust companies or other bodies corporate or organizations as may from time to time be designated by or under the authority of the board. Such banking business or any part

thereof shall be transacted under such agreements, instructions and delegations of powers as the board may from time to time by resolution prescribe or authorize.

2.05 Custody of Securities

All shares and securities owned by the Corporation shall be lodged (in the name of the Corporation) with a chartered bank or a trust company or in a safety deposit box or, if so authorized by resolution of the board, with such other depositaries or in such other manner as may be determined from time to time by resolution of the board.

All share certificates, bonds, debentures, notes or other obligations or securities belonging to the Corporation may be issued or held in the name of a nominee or nominees of the Corporation (and if issued or held in the names of more than one nominee shall be held in the names of the nominees jointly with the right of survivorship) and shall be endorsed in blank with endorsement guaranteed in order to enable transfer to be completed and registration to be effected.

2.06 Voting Shares and Securities in other Companies

All of the shares or other securities carrying voting rights of any other body corporate held from time to time by the Corporation may be voted at any and all meetings of shareholders, bondholders, debenture holders or holders of other securities (as the case may be) of such other body corporate and in such manner and by such person or persons as the board shall from time to time by resolution determine. The proper signing officers of the Corporation may also from time to time execute and deliver for and on behalf of the Corporation proxies and/or arrange for the issuance of voting certificates and/or other evidence of the right to vote in such names as they may determine without the necessity of a resolution or other action by the board.

SECTION THREE

DIRECTORS

3.01 Number of Directors and Quorum

The number of directors of the Corporation shall be the number of directors as specified in the articles or, where a minimum and maximum number of directors is provided for in the articles, the number of directors of the Corporation shall be the number of directors determined from time to time by special resolution or, if a special resolution empowers the directors to determine the number, the number of directors determined by resolution of the board. Subject to the Act, the quorum for the transaction of business at any meeting of the board shall be a majority of the number of directors then in office and or such greater number of directors as the board may from time to time by resolution determine.

3.02 Qualification

No person shall be qualified for election as a director if disqualified in accordance with the Act (which would currently include: a person who is less than 18 years of age; a person who has been found under the *Substitute Decisions Act*, 1992 or under the *Mental Health Act* to be incapable of managing property or who has been found to be incapable by a court in Canada or elsewhere; a person who is not an individual; or a person who has the status of a bankrupt).

A director need not be a shareholder. The board shall be comprised of the number of Canadian residents as may be prescribed from time to time by the Act (which is currently a minimum of 25%). If the Corporation is or becomes an offering corporation within the meaning of the Act, at least one-third of the directors of the Corporation shall not be officers or employees of the Corporation or any of its affiliates.

3.03 Election and Term

The election of directors shall take place at the first meeting of shareholders and at each succeeding annual meeting of shareholders and all the directors then in office shall retire but, if qualified, shall be eligible for re-election. The number of directors to be elected at any such meeting shall be the number of directors as specified in the articles or, if a minimum and maximum number of directors is provided for in the articles, the number of directors determined by special resolution or, if the special resolution empowers the directors to determine the number, the number of directors determined by resolution of the board. The voting on the election shall be by show of hands unless a ballot is demanded by any shareholder. If an election of directors is not held at the proper time, the incumbent directors shall continue in office until their successors are elected.

3.04 Removal of Directors

Subject to the provisions of the Act, the shareholders may by ordinary resolution passed at a meeting specially called for such purpose remove any director from office and the vacancy created by such removal may be filled at the same meeting failing which it may be filled by a quorum of the directors.

3.05 Vacation of Office

A director ceases to hold office when he dies or, subject to the Act, resigns; he is removed from office by the shareholders in accordance with the Act; he becomes of unsound mind and is so found by a court in Canada or elsewhere or if he acquires the status of a bankrupt.

3.06 Vacancies

Subject to the Act, a quorum of the board may fill a vacancy in the board, except a vacancy resulting from an increase in the number or maximum number of directors or from a failure of the shareholders to elect the number of directors required to be elected at any meeting of shareholders. In the absence of a quorum of the board, or if the vacancy has arisen from a failure of the shareholders to elect the number of directors required to be elected at any meeting of shareholders, the directors then in office shall forthwith call a special meeting of shareholders to fill the vacancy. If the directors then in office fail to call such meeting or if there are no directors then in office, any shareholder may call the meeting.

3.07 Action by the Board

The board shall manage or supervise the management of the business and affairs of the Corporation. Subject to paragraph 3.08, the powers of the board may be exercised at a meeting at which a quorum is present or by resolution in writing signed by all the directors entitled to vote on that resolution at a meeting of the board. Where there is a vacancy in the

board, the remaining directors may exercise all the powers of the board so long as a quorum of the board remains in office.

3.08 Electronic Participation

Subject to the Act, if all of the directors consent, a director may participate in a meeting of the board or a committee of the board by means of such telephonic, electronic or other communications facilities as permit all persons participating in the meeting to communicate adequately with each other, and a director participating in a meeting by such means shall be deemed to be present at that meeting. A consent is effective whether given before or after the meeting and may be given with respect to all meetings of the board and committees of the board.

3.09 Place of Meetings

Meetings of the board may be held at any place within or outside Ontario. In any financial year of the Corporation a majority of the meetings of the board need not be held within Canada.

3.10 Calling of Meetings

Subject to the Act, meetings of the board shall be held from time to time on such day and at such time and at such place as the board, the Chairman of the Board (if any), the President, an Executive Vice-President or a Vice-President who is a director or any one director may determine and the Secretary or Assistant Secretary, when directed by the board, the Chairman of the Board (if any), the President, an Executive Vice-President or a Vice-President who is a director or any one director shall convene a meeting of the board.

3.11 Notice of Meeting

Notice of the date, time and place of each meeting of the board shall be given in the manner provided in paragraph 11.01 to each director not less than 48 hours (exclusive of any part of a non-business day) before the time when the meeting is to be held. A notice of a meeting of directors need not specify the purpose of or the business to be transacted at the meeting except where the Act requires such purpose or business to be specified.

A director may in any manner waive notice of or otherwise consent to a meeting of the board.

3.12 First Meeting of New Board

Provided a quorum of directors is present, each newly elected board may without notice hold its first meeting immediately following the meeting of shareholders at which such board is elected.

3.13 Adjourned Meeting

Notice of an adjourned meeting of the board is not required if the time and place of the adjourned meeting is announced at the original meeting.

3.14 Regular Meetings

The board may appoint a day or days in any month or months for regular meetings of the board at a place and hour to be named. A copy of a schedule of regular meetings of the board setting forth the proposed dates, times and places of such regular meetings shall be sent to each director at the commencement of each calendar year, however, each director shall also be provided with a follow-up notice of meeting and agenda prior to each regularly scheduled meeting.

3.15 Chairman

The chairman of any meeting of the board shall be the first mentioned of such of the following officers as have been appointed and who is a director and is present at the meeting: the Chairman of the Board, the President, an Executive Vice-President or a Vice-President. If no such officer is present, the directors present shall choose one of their number to be chairman.

3.16 Votes to Govern

At all meetings of the board every question shall be decided by a majority of the votes cast on the question. In case of an equality of votes, the chairman of the meeting shall not be entitled to a second or casting vote.

3.17 Conflict of Interest

A director or officer who is a party to, or who is a director or 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 meetings of the directors the nature and extent of his interest at the time and in the manner provided by the Act. Any such contract or transaction or proposed contract or transaction shall be referred to the board or shareholders for approval even if such contract is one that in the ordinary course of the Corporation's business would not require approval by the board or shareholders, and a director interested in a contract or transaction so referred to the board shall not attend any part of a meeting of the board during which the contract or transaction is discussed and shall not vote on any resolution to approve the same except as permitted by the Act. If no quorum exists for the purpose of voting on a resolution to approve a contract or transaction only because a director is not permitted to be present at the meeting by reason of this section, the remaining directors shall be deemed to constitute a quorum for the purposes of voting on the resolution. Where all of the directors are required to disclose their interests pursuant to this section, the contract or transaction may be approved only by the shareholders.

3.18 Remuneration and Expenses

The directors shall be paid such remuneration for their services as the board may from time to time determine. The directors shall also be entitled to be reimbursed for traveling and other expenses properly incurred by them in attending meetings of the shareholders or of the board or any committee thereof or otherwise in the performance of their duties. Nothing herein contained shall preclude any director from serving the Corporation in any other capacity and receiving remuneration therefor.

SECTION FOUR

COMMITTEES

4.01 Committee of Directors

The board may appoint a committee of directors, however designated, and delegate to such committee any of the powers of the board except those which pertain to items which, under the Act, a committee of directors has no authority to exercise.

4.02 Transaction of Business

The powers of a committee of directors may be exercised by a meeting at which a quorum is present or by resolution in writing signed by all members of such committee who would have been entitled to vote on that resolution at a meeting of the committee. Meetings of such committee may be held at any place within or outside Ontario.

4.03 Audit Committee

The board may, and shall if the Corporation becomes an offering corporation within the meaning of the Act, elect annually from among its number an audit committee to be composed of not fewer than three directors of whom a majority shall not be officers or employees of the Corporation or its affiliates. The audit committee shall have the powers and duties provided in the Act.

4.04 Advisory Committees

The board may from time to time appoint such other committees as it may deem advisable, but the functions of any such other committees shall be advisory only.

4.05 Procedure

Unless otherwise determined by the board, each committee shall have power to fix its quorum at not less than a majority of its members, to elect its chairman and to regulate its procedure.

SECTION FIVE

OFFICERS

5.01 Appointment

The board may from time to time appoint a Chairman of the Board, a President, one or more Vice-Presidents (to which title may be added words indicating seniority or function), a Secretary, a Treasurer and such other officers as the board may determine, including one or more assistants to any of the officers so appointed. The board may specify the duties of and, in accordance with this by-law and subject to the provisions of the Act, delegate to such officers powers to manage the business and affairs of the Corporation. Subject to paragraph 5.02, an officer may but need not be a director and one person may hold more than one office. In case and whenever the same person holds the offices of Secretary and Treasurer, he may but need not be known as the Secretary-Treasurer. All officers shall sign such contracts, documents, or

instruments in writing as require their respective signatures. In the case of the absence or inability to act of any officer or for any other reason that the board may deem sufficient, the board may delegate all or any of the powers of such officer to any other officer or to any director for the time being.

5.02 Chairman of the Board

The Chairman of the Board, if appointed, shall be a director and shall, when present, preside at all meetings of the board. Each committee of the board shall appoint a Chairman which shall be a member of the relevant committee of the board and shall, when present, preside at all meetings of committees of the board. The Chairman of the Board shall be vested with and may exercise such powers and shall perform such other duties as may from time to time be assigned to him by the board. During the absence or disability of the Chairman of the Board, his duties shall be performed and his powers exercised by the President.

5.03 President

The President shall, and unless and until the board designates any other officer of the Corporation to be the Chief Executive Officer of the Corporation, be the Chief Executive Officer and, subject to the authority of the board, shall have general supervision of the business and affairs of the Corporation and such other powers and duties as the board may specify. The President shall be vested with and may exercise all the powers and shall perform all the duties of the Chairman of the Board if none be appointed or if the Chairman of the Board is absent or unable or refuses to act.

5.04 Executive Vice-President or Vice-President

Each Executive Vice-President or Vice-President shall have such powers and duties as the board or the President may specify. The Executive Vice-President or Vice-President or, if more than one, the Executive Vice-President or Vice-President designated from time to time by the board or by the President, shall be vested with all the powers and shall perform all the duties of the President in the absence or inability or refusal to act of the President, provided, however, that an Executive Vice-President or a Vice-President who is not a director shall not preside as chairman at any meeting of the board.

5.05 Secretary or Assistant Secretary

The Secretary or Assistant Secretary shall give or cause to be given as and when instructed, all notices to shareholders, directors, officers, auditors and members of committees of the board; he shall be the custodian of the stamp or mechanical device generally used for affixing the corporate seal of the Corporation and all books, papers, records, documents and instruments belonging to the Corporation, except when some other officer or agent has been appointed for that purpose; and he shall have such other powers and duties as the board may specify.

5.06 Treasurer or Assistant Treasurer

The Treasurer or Assistant Treasurer shall keep proper accounting records in compliance with the Act and shall be responsible for the deposit of money, the safekeeping of securities and the disbursement of the funds of the Corporation; he shall render to the board whenever required an account of all his transactions as Treasurer or Assistant Treasurer and of

the financial position of the Corporation; and he shall have such other powers and duties as the board may specify. Unless and until the board designates any other officer of the Corporation to be the Chief Financial Officer of the Corporation, the Treasurer or Assistant Treasurer shall be the Chief Financial Officer of the Corporation.

5.07 Powers and Duties of Other Officers

The powers and duties of all other officers shall be such as the terms of their engagement call for or as the board may specify. 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 otherwise directs.

5.08 Variation of Powers and Duties

The board may from time to time and subject to the provisions of the Act, vary, add to or limit the powers and duties of any officer.

5.09 Term of Office

The board, in its discretion, may remove any officer of the Corporation, with or without cause, without prejudice to such officer's rights under any employment contract. Otherwise each officer appointed by the board shall hold office until his successor is appointed or until the earlier of his resignation or death.

5.10 Terms of Employment and Remuneration

The terms of employment and the remuneration of an officer appointed by the board shall be settled by it from time to time. The fact that any officer or employee is a director or shareholder of the Corporation shall not disqualify him from receiving such remuneration as may be so determined.

5.11 Conflict of Interest

An officer shall disclose his interest in any material contract or transaction or proposed material contract or transaction with the Corporation in accordance with paragraph 3.17.

5.12 Agents and Attorneys

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

SECTION SIX

PROTECTION OF
DIRECTORS, OFFICERS AND OTHERS

6.01 Submission of Contracts or
Transactions to Shareholders for Approval

The board in its discretion may submit any contract, act or transaction for approval, ratification or confirmation at any meeting of the shareholders called for the purpose of considering the same and any contract, act or transaction that shall be approved, ratified or confirmed by a resolution passed by a majority of the votes cast at any such meeting (unless any different or additional requirement is imposed by the Act or by the Corporation's articles or any other by-law) shall be as valid and as binding upon the Corporation and upon all the shareholders as though it had been approved, ratified or confirmed by every shareholder of the Corporation.

6.02 For the Protection of Directors and Officers

In supplement of and not by way of limitation upon any rights conferred upon directors by the provisions of the Act, it is declared that no director shall be disqualified by his office from, or vacate his office by reason of, holding any office or place of profit under the Corporation or under any body corporate in which the Corporation shall be a shareholder or by reason of being otherwise in any way directly or indirectly interested or contracting with the Corporation either as vendor, purchaser or otherwise or being concerned in any contract or arrangement made or proposed to be entered into with the Corporation in which he is in any way directly or indirectly interested either as vendor, purchaser or otherwise nor shall any director be liable to account to the Corporation or any of its shareholders or creditors for any profit arising from any such office or place of profit; and, subject to the provisions of the Act, no contract or arrangement entered into by or on behalf of the Corporation in which any director shall be in any way directly or indirectly interested shall be avoided or voidable and no director shall be liable to account to the Corporation or any of its shareholders or creditors for any profit realized by or from any such contract or arrangement by reason of the fiduciary relationship existing or established thereby. Subject to the provisions of the Act and to paragraph 3.17, no director shall be obliged to make any declaration of interest or refrain from voting in respect of a contract or proposed contract with the Corporation in which such director is in any way directly or indirectly interested.

6.03 Limitation of Liability

Except as otherwise provided in the Act, no director or officer for the time being of the Corporation shall be liable for the acts, receipts, neglects or defaults of any other director or officer or employee or for joining in any receipt or act for conformity or for any loss, damage or expense happening to the Corporation through the insufficiency or deficiency of title to any property acquired by the Corporation or for or on behalf of the Corporation or for the insufficiency or deficiency of any security in or upon which any of the moneys of or belonging to the Corporation shall be placed out or invested or for any loss or damage arising from the bankruptcy, insolvency or tortious act of any persons, firm or corporation including any person, firm or corporation with whom or which any moneys, securities or effects shall be lodged or deposited for any loss, conversion, misapplication or misappropriation of or any damage resulting from any dealings with any moneys, securities or other assets belonging to the

Corporation or for any other loss, damage or misfortune whatever which may happen in the execution of the duties of his respective office or trust or in relation thereto unless the same shall happen by or through his failure to exercise the powers and to discharge the duties of his office honestly, in good faith and in the best interests of the Corporation and in connection therewith to exercise the degree of care, diligence and skill that a reasonably prudent person would exercise in comparable circumstances. The directors for the time being of the Corporation shall not be under any duty or responsibility in respect of any contract, act or transaction whether or not made, done or entered into in the name or on behalf of the Corporation, except such as shall have been submitted to and authorized or approved by the board. If any director or officer of the Corporation shall be employed by or shall perform services for the Corporation otherwise than as a director or officer or shall be a member of a firm or a shareholder, director or officer of a company which is employed by or performs services for the Corporation, the fact of his being a director or officer of the Corporation shall not disentitle such director or officer or such firm or company, as the case may be, from receiving proper remuneration for such services.

6.04 Indemnity

Subject to the limitations contained in the Act, the Corporation shall indemnify a director or officer, a former director or officer, or another individual who acts or acted at the Corporation's request as a director or officer, or an individual acting in a similar capacity, of another entity, against all costs, charges and expenses, including an amount paid to settle an action or satisfy a judgment, reasonably incurred by the individual in respect of any civil, criminal, administrative, investigative or other proceeding in which the individual is involved because of that association with the Corporation or other entity, if

- (a) the individual acted honestly and in good faith with a view to the best interests of the Corporation or, as the case may be, to the best interests of the other entity for which the individual acted as a director or officer or in a similar capacity at the Corporation's request;
- (b) in the case of a criminal or administrative action or proceeding that is enforced by a monetary penalty, the individual had reasonable grounds for believing that the individual's conduct was lawful; and
- (c) a court or other competent authority has not judged that the individual has committed any fault or omitted to do anything that the individual ought to have done.

The Corporation shall also indemnify such person in such other circumstances as the Act permits or requires. The Corporation may advance monies to a director, officer or other individual for costs, charges and expenses of a proceeding referred to above. The individual shall repay the monies if he or she does not fulfill the conditions set out in paragraphs (a) and (b) above. Nothing in this by-law shall limit the right of any individual entitled to indemnity to claim indemnity apart from the provisions of this by-law.

6.05 Insurance

The Corporation may purchase and maintain insurance for the benefit of any person referred to in paragraph 6.04 against such liabilities and in such amounts as the board may from time to time determine and are permitted by the Act.

SECTION SEVEN

SHARES

7.01 Allotment

The board may from time to time allot or grant options to purchase the whole or any part of the authorized and unissued shares of the Corporation at such times and to such persons and for such consideration as the board shall determine, provided that no share shall be issued until it is fully paid as provided by the Act. Shares may be issued as uncertificated securities or be represented by share certificates in accordance with the provisions of the Act and the Securities Transfer Act.

7.02 Commissions

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

7.03 Registration of Transfers

All transfers of securities of the Corporation shall be made in accordance with the Act and the *Securities Transfer Act*. Subject to the provisions of the Act and the Securities Transfer Act, no transfer of shares represented by a security certificate (as defined in the Act) shall be registered in a securities register except upon presentation of the certificate representing such shares with an endorsement which complies with the Act and the *Securities Transfer Act* made thereon or delivered therewith duly executed by an appropriate person as provided by the Act and the *Securities Transfer Act*, together with such reasonable assurance that the endorsement is genuine and effective as the board may from time to time prescribe, upon payment of all applicable taxes and any fees prescribed by the board, upon compliance with such restrictions on transfer as are authorized by the articles and upon satisfaction of any lien referred to in paragraph 7.05.

7.04 Transfer Agents and Registrars

The board may from time to time appoint one or more agents to maintain, in respect of each class of securities of the Corporation issued by it in registered form, a securities register and one or more branch securities registers. Such a person may be designated as transfer agent and registrar according to his functions and one person may be designated both registrar and transfer agent. The board may at any time terminate such appointment.

7.05 Lien for Indebtedness

The Corporation shall have a lien on any share registered in the name of a shareholder or his legal representatives for a debt of that shareholder to the Corporation, provided that if the shares of the Corporation are listed on a stock exchange in or outside Canada, the Corporation shall not have such lien. The Corporation may enforce any lien that it has on shares registered in the name of a shareholder indebted to the Corporation by the sale of the shares thereby affected or by any other action, suit, remedy or proceeding authorized or

permitted by law and, pending such enforcement, the Corporation may refuse to register a transfer of the whole or any part of such shares.

7.06 Non-recognition of Trusts

Subject to the provisions of the Act and the Securities Transfer Act, the Corporation may treat as absolute owner of any share the person in whose name the share is registered in the securities register as if that person had full legal capacity and authority to exercise all rights of ownership, irrespective of any indication to the contrary through knowledge or notice or description in the Corporation's records or on the share certificate.

7.07 Share Certificates and Written Evidence of Ownership

Every holder of one or more shares of the Corporation that are certificated securities under the Act shall be entitled, at his option, to a share certificate, or to a non-transferable written acknowledgement of his right to obtain a share certificate, stating the number and class or series of shares held by him as shown on the securities register. Share certificates and acknowledgements of a shareholder's right to a share certificate, respectively, shall be in such form as the board shall from time to time approve. Any share certificate shall be signed in accordance with paragraph 2.03 and need not be under the corporate seal; provided that, unless the board otherwise determines, certificates representing shares in respect of which a transfer agent and/or registrar has been appointed shall not be valid unless countersigned by or on behalf of such transfer agent and/or registrar. The signature of one of the signing officers or, in the case of share certificates which are not valid unless countersigned by or on behalf of a transfer agent and/or registrar, the signatures of both signing officers, may be printed or mechanically reproduced in facsimile upon share 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 binding upon the Corporation. A share certificate executed as aforesaid shall be valid notwithstanding that one or both of the officers whose facsimile signature appears thereon no longer holds office at the date of issue of the certificate. Holders of uncertificated securities of the Corporation shall be entitled to receive a written notice or other documentation as provided by the Act.

7.08 Replacement of Share Certificates

The board or any officer or agent designated by the board may in its or his discretion direct the issue of a new share certificate in lieu of and upon cancellation of a share certificate that has been mutilated or in substitution for a share certificate claimed to have been lost, destroyed or wrongfully taken on payment of such fee, not exceeding \$3.00, and on such terms as to indemnity, reimbursement of expenses and evidence of loss and of title as the board may from time to time prescribe, whether generally or in any particular case.

7.09 Joint Shareholders

If two or more persons are registered as joint holders of any share, the Corporation shall not be bound to issue more than one certificate in respect thereof, and delivery of such certificate to one of such persons shall be sufficient delivery to all of them. Any one of such persons may give effectual receipts for the certificate issued in respect thereof or for any dividend, bonus, return of capital or other money payable or warrant issuable in respect of such shares.

7.10 Deceased Shareholders

In the event of the death of a holder, or of one of the joint holders, of any share, the Corporation shall not be required to make any entry in the securities register in respect thereof or to make payment of any dividends thereon except upon production of all such documents as may be required by law and upon compliance with the reasonable requirements of the Corporation and its transfer agents.

SECTION EIGHT

DIVIDENDS AND RIGHTS

8.01 Dividends

Subject to the provisions of the Act, the board may from time to time declare dividends payable to the shareholders according to their respective rights and interest in the Corporation. Dividends may be paid in money or property or by issuing fully paid shares of the Corporation.

8.02 Dividend Cheques

A dividend payable in cash shall be paid either electronically by direct deposit or by cheque drawn on the Corporation's bankers or one of them to the order of each registered holder of shares of the class or series in respect of which it has been declared and, if paid by cheque, mailed by prepaid ordinary mail to such registered holder at his recorded address, unless such holder otherwise directs. In the case of joint holders any cheque issued shall, unless such joint holders otherwise direct, be made payable to the order of all of such joint holders and mailed to them at their recorded address. The mailing of such cheque as set out in this section, unless the same is not paid on due presentation, shall satisfy and discharge the liability for the dividend to the extent of the sum represented thereby plus the amount of any tax which the Corporation is required to and does withhold.

8.03 Non-receipt of Cheques

In the event of non-receipt of any dividend cheque by the person to whom it is sent as set out in section 8.02, the Corporation shall issue to such person a replacement cheque for a like amount on such terms as to indemnity, reimbursement of expenses and evidence of non-receipt and of title as the board may from time to time prescribe, whether generally or in any particular case.

8.04 Record Date for Dividends and Rights

The board may fix in advance a date, preceding by not more than 50 days the date for the payment of any dividend or the date for the issue of any warrant or other evidence of the right to subscribe for securities of the Corporation, as a record date for the determination of the persons entitled to receive payment of such dividend or to exercise the right to subscribe for such securities, and notice of any such record date shall be given not less than seven days before such record date in the manner provided by the Act. If no record date is so fixed, the record date for the determination of the persons entitled to receive payment of any dividend or to exercise the right to subscribe for securities of the Corporation shall be at the close of

business on the day on which the resolution relating to such dividend or right to subscribe is passed by the board.

8.05 Unclaimed Dividends

Any dividend unclaimed after a period of six years from the date on which the same has been declared to be payable shall be forfeited and shall revert to the Corporation.

SECTION NINE

MEETINGS OF SHAREHOLDERS

9.01 Annual Meetings

The annual meeting of shareholders shall be held at such time in each year as the board, the Chairman of the Board (if any) or the President may from time to time determine, in any event no later than the earlier of (i) six months after the end of each of the Corporation's financial years, and (ii) fifteen months after the Corporation's last annual meeting of shareholders, for the purpose of considering the financial statements and reports required by the Act to be placed before the annual meeting, electing directors, appointing an auditor and for the transaction of such other business as may properly be brought before the meeting.

9.02 Special Meetings

The board, the Chairman of the Board (if any) or the President shall have the power to call a special meeting of shareholders at any time.

9.03 Place of Meetings

Subject to the Corporation's articles, a meeting of shareholders of the Corporation shall be held at such place in or outside of Ontario as the board may determine or, in the absence of such a determination, at the place where the registered office of the Corporation is located. If the Corporation makes available a telephonic, electronic or other communication facility that permits all participants of a shareholders meeting to communicate adequately with each other during the meeting and otherwise complies with the Act, any person entitled to attend such meeting may participate by means of such communication facility in the manner prescribed by the Act, and any person participating in the meeting by such means is deemed to be present at the meeting.

9.04 Notice of Meetings

Notice of the time and place of each meeting of shareholders shall be given in the manner provided in paragraph 11.01 not less than 21 days nor more than 50 days before the date of the meeting to each director, to the auditor and to each shareholder who at the close of business on the record date for notice is entered in the securities register as the holder of one or more shares carrying the right to vote at the meeting. Notice of a meeting of shareholders called for any purpose other than consideration of the financial statements and auditor's report, election of directors and reappointment of the incumbent auditor shall state or be accompanied by a statement of the nature of such 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 shareholder and any other person entitled to attend a meeting of

shareholders may in any manner waive notice of or otherwise consent to a meeting of shareholders.

9.05 List of Shareholders Entitled to Notice

For every meeting of shareholders, the Corporation shall prepare a list of shareholders entitled to receive notice of the meeting, arranged in alphabetical order and showing the number of shares held by each shareholder entitled to vote at the meeting. If a record date for the meeting is fixed pursuant to paragraph 9.06, the list of shareholders entitled to receive notice of the meeting shall be prepared not later than ten days after such record date. If no record date is fixed, the list of shareholders entitled to receive notice of the meeting shall be prepared as of the close of business on the day immediately preceding the day on which notice of the meeting is given, or where no such notice is given, on the day on which the meeting is held. The list shall be available for examination by any shareholder during usual business hours at the registered office of the Corporation or at the place where the central securities register is maintained and at the meeting of shareholders for which the list was prepared.

9.06 Record Date for Notice

The board may fix in advance a date, preceding the date of any meeting of shareholders by not more than 60 days and not less than 30 days (or pursuant to the time limitations as may be prescribed by the Act from time to time), as a record date for the determination of the shareholders entitled to receive notice of the meeting, provided that notice of any such record date shall be given not less than seven days before such record date by newspaper advertisement in the manner provided in the Act and, if any shares of the Corporation are listed for trading on a stock exchange in Canada, by written notice to each such stock exchange. If no record date is so fixed, the record date for the determination of the shareholders entitled to receive notice of the meeting shall be at the close of business on the day immediately preceding the day on which the notice is given or, if no notice is given, the day on which the meeting is held.

9.07 Meetings Held by Electronic Means

If the directors or shareholders of the Corporation call a meeting of shareholders pursuant to the Act, the directors may determine that the meeting shall be held, in accordance with the Act, entirely by means of a telephonic, electronic or other communications facility that permits all participants to communicate adequately with each other during the meeting.

9.08 Meetings without Notice

A meeting of shareholders may be held without notice at any time and place permitted by the Act

- (a) if all the shareholders entitled to vote thereat are present in person or represented by proxy waive notice of or otherwise consent to such meeting being held, and
- (b) if the auditor and the directors are present or waive notice of or otherwise consent to such meeting being held, so long as such shareholders, auditor and directors present are not attending for the express purpose of objecting to the

transaction of any business on the grounds that the meeting is not lawfully called. At such a meeting any business may be transacted which the Corporation at a meeting of shareholders may transact. If the meeting is held at a place outside Canada, shareholders not present or represented by proxy, but who have waived notice of or otherwise consented to such meeting, shall also be deemed to have consented to the meeting being held at such place.

9.09 Chairman, Secretary and Scrutineers

The Chairman of the Board or any other director or officer of the Corporation, as determined by the board, may act as chairman of any meeting of shareholders. If no such director or officer is present within 15 minutes from the time fixed for holding the meeting, the persons present and entitled to vote shall choose one of their number to be chairman. If the Secretary or Assistant Secretary of the Corporation is absent, the chairman shall appoint some person, who need not be a shareholder, to act as secretary of the meeting. If desired, one or more scrutineers, who need not be shareholders, may be appointed by a resolution or by the chairman with the consent of the meeting.

9.10 Persons Entitled to be Present

The only persons entitled to be present at a meeting of shareholders shall be those entitled to vote thereat, the directors and the auditor of the Corporation and others who, although not entitled to vote are entitled or required under any provision of the Act or the articles or the by-laws 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.

9.11 Quorum

Subject to the Act, a quorum for the transaction of business at any meeting of shareholders shall be two persons present in person, each being a shareholder entitled to vote thereat or a duly appointed proxy or proxyholder for an absent shareholder so entitled, holding or representing in the aggregate not less than 25% of the issued shares of the Corporation enjoying voting rights at such meeting.

9.12 Right to Vote

The persons entitled to vote at any meeting of shareholders shall be the persons entitled to vote in accordance with the Act.

9.13 Proxies

Every shareholder entitled to vote at a meeting of shareholders may appoint a proxyholder, or one or more alternate proxyholders, who need not be shareholders, to attend and act at the meeting in the manner and to the extent authorized and with the authority conferred by the proxy. A proxy shall be in writing executed by the shareholder or his attorney authorized in writing (or by electronic signature) and shall conform with the requirements of the Act.

9.14 Time for Deposit of Proxies

The board may by resolution specify in a notice calling a meeting of shareholders a time, preceding the time of such meeting or an adjournment thereof by not more than 48 hours exclusive of any part of a non-business day, before which time proxies to be used at such meeting must be deposited. A proxy shall be acted upon only if, prior to the time so specified, it shall have been deposited with the Corporation or an agent thereof specified in such notice or, if no such time is specified in such notice, only if it has been received by the Secretary of the Corporation or by the chairman of the meeting or any adjournment thereof prior to the time of voting.

9.15 Joint Shareholders

If two or more persons hold shares jointly, any one of them present in person or represented by proxy at a meeting of shareholders may, in the absence of the other or others, vote the shares; but if two or more of those persons are present in person or represented by proxy and vote, they shall vote as one the shares jointly held by them.

9.16 Votes to Govern

At any meeting of shareholders every question shall, unless otherwise required by the articles or by-laws or by law, be determined by a majority of the votes cast on the question. In case of an equality of votes 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.

9.17 Show of Hands

Subject to the provisions of the Act, any question at a meeting of shareholders shall be decided by a show of hands, which may include such other indication of a vote made by means of the telephonic, electronic or other communication facility, if any, made available by the Corporation for that purpose, unless a ballot thereon is required or demanded as hereinafter provided. Upon a show of hands, every person who is present, in person or by means of the telephonic, electronic or other communications facility, if any that the Corporation has made available for such purpose, and entitled to vote shall have one vote. Whenever a vote by show of hands shall have been taken upon a question, unless a ballot thereon is 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 meeting shall be prima facie evidence of the fact without proof of the number or proportion 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 shareholders upon the said question. For the purpose of this section, if at any meeting the Corporation has made available to shareholders the means to vote electronically, any vote made electronically shall be included in tallying any votes by show of hands.

9.18 Ballots

On any question proposed for consideration at a meeting of shareholders, and whether or not a vote by show of hands has been taken thereon, any shareholder or proxyholder entitled to vote at the meeting may require or demand a ballot. A ballot so required or demanded shall be taken in such manner as the chairman shall direct. A requirement or demand for a ballot may be withdrawn at any time prior to the taking of the ballot. If a ballot is

taken each person present shall be entitled, in respect of the shares which he is entitled to vote at the meeting upon the question, to that number of votes provided by the Act or the articles, and the result of the ballot so taken shall be the decision of the shareholders upon the said question.

9.19 Adjournment

The chairman at 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. If a meeting of shareholders is adjourned for less than 30 days, it shall not be necessary to give notice of the adjourned meeting, other than by announcement at the earliest meeting that is adjourned. If a meeting of shareholders is adjourned by one or more adjournments for an aggregate of 30 days or more, notice of the adjourned meeting shall be given as for an original meeting.

9.20 Resolution in Writing

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 the shareholders unless a written statement with respect to the subject matter of the resolution is submitted by a director or the auditor in accordance with the Act.

SECTION TEN

DIVISIONS AND DEPARTMENTS

10.01 Creation and Consolidation of Divisions

The board may cause the business and operations of the Corporation or any part thereof to be divided or to be segregated into one or more subsidiaries, partnerships or other legal entities upon such basis, including without limitation, character or type of operation, geographical territory, product manufactured or service rendered, as the board may consider appropriate in each case. The board may also cause the business and operations of any such subsidiary, partnership or other legal entity to be further divided into subsidiaries, partnerships or other legal entities and the business and operations of any such subsidiaries, partnerships or other legal entities to be consolidated upon such basis as the board may consider appropriate in each case.

10.02 Name of Division

Any division or its sub-units may be designated by such name as the board may from time to time determine and may transact business under such name, provided that the Corporation shall set out its name in legible characters in all contracts, invoices, negotiable instruments and orders for goods or services issued or made by or on behalf of the Corporation.

10.03 Officers of Division

From time to time the board or, if authorized by the board, the President and/or Chief Executive Officer, may appoint one or more officers for any division, prescribe their powers and duties and settle their terms of employment and remuneration. The board or, if authorized by the board, the President and/or Chief Executive Officer, may remove at its or his pleasure any officer so appointed, without prejudice to such officer's rights under any employment contract. Officers of divisions or their sub-units shall not, as such, be officers of the Corporation.

SECTION ELEVEN

NOTICES

11.01 Method of Giving Notices

Any notice (which term includes any communication or document) to be given (which term includes sent, delivered or served) pursuant to the Act, the regulations thereunder, the articles, the by-laws or otherwise to a shareholder, director, officer, auditor or member of a committee of the directors shall be sufficiently given if delivered personally to the person to whom it is to be given; delivered to the recorded address of the person; mailed to the person's recorded address by prepaid or ordinary or air mail; sent to the person's recorded address by any means of prepaid transmitted or recorded communication; or an electronic document is provided in accordance with Part Twelve of this by-law.

A notice delivered as set out in this section is deemed to have been given when it is delivered personally or to the recorded address; a notice mailed as set out in this section shall be deemed to have been given when deposited in a post office or public letter box; and a notice sent by means of transmitted or recorded communication as set out in this section is deemed to have been dispatched or delivered to the appropriate communication company or agency or its representative for dispatch; and a notice sent by electronic means as set out in this section and Part Twelve shall be deemed to have been given upon receipt of reasonable confirmation of transmission to the designated information system indicated by the person entitled to receive such notice. The corporate secretary may change or cause to be changed the recorded address of any shareholder, director, officer, auditor or member of a committee of the directors in accordance with any information believed by him or her to be reliable. The Secretary or Assistant Secretary may change or cause to be changed the recorded address of any shareholder, director, officer, auditor or member of a committee of the board in accordance with any information believed by him to be reliable.

11.02 Signature to Notices

The signature of any director or officer of the Corporation to any notice or document to be given by the Corporation may be written, stamped, mechanically reproduced or electronically reproduced in whole or in part.

11.03 Proof of Service

With respect to every notice sent by post it is sufficient to prove that the envelope or wrapper containing the notice or other document was properly addressed as provided in this by-law and put into a post office or into a letter box. With respect to every notice or other

document sent as an electronic document it is sufficient to prove that the electronic document was properly addressed to the designated information system as provided in this by-law and sent by electronic means. A certificate of the Chairman of the Board (if any), the President, an Executive Vice-President, a Vice-President, the Secretary, the Assistant Secretary, the Treasurer or the Assistant Treasurer or of any other officer of the Corporation in office at the time of the making of the certificate or of a transfer officer of any transfer agent or branch transfer agent of shares of any class of the Corporation as to the facts in relation to the mailing or delivery of any notice or other document to any shareholder, director, officer or auditor or publication of any notice or other document shall be conclusive evidence thereof and shall be binding on every shareholder, director, officer or auditor of the Corporation as the case may be.

11.04 Notice to Joint Shareholders

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

11.05 Computation of Time

In computing the date when notice must be given under any provision requiring a specified number of days notice of any meeting or other event both the date of giving the notice and the date of the meeting or other event shall be excluded.

11.06 Undelivered Notices

If any notice given to a shareholder pursuant to paragraph 11.01 is returned on three consecutive occasions because he cannot be found, the Corporation shall not be required to give any further notices to such shareholder until he informs the Corporation in writing of his new address.

11.07 Omissions and Errors

The accidental omission to give any notice to any shareholder, director, officer, auditor or member of a committee of the board or the non-receipt of any notice by any such person 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 found thereon.

11.08 Deceased Shareholders

Any notice or other document delivered or sent by post or left at the address of any shareholder as the same appears in the records of the Corporation shall, notwithstanding that such shareholder be then deceased, and whether or not the Corporation has notice of his decease, be deemed to have been duly served in respect of the shares held by such shareholder (whether held solely or with any person or persons) until some other person be entered in his stead in the records of the Corporation as the holder or one of the holders thereof and such service shall for all purposes be deemed a sufficient service of such notice or document on his heirs, executors or administrators and on all persons, if any, interested with him in such shares.

11.09 Persons Entitled by Death or Operation of Law

Every person who, by operation of law, transfer, death of a shareholder or any other means whatsoever, shall become entitled to any share, shall be bound by every notice in respect of such share which shall have been duly given to the shareholder from whom he derives his title to such share prior to his name and address being entered on the securities register (whether such notice was given before or after the happening of the event upon which he became so entitled) and prior to his furnishing to the Corporation the proof of authority or evidence of his entitlement prescribed by the Act.

11.10 Waiver of Notice

Any shareholder (or his duly appointed proxyholder), director, officer, auditor or member of a committee of the board may at any time waive any notice, or waive or abridge the time for any notice, required to be given to him under any provision of the Act, the regulations thereunder, the articles, the by-laws or otherwise and such waiver or abridgement, whether given before or after the meeting or other event of which notice is required to be given shall cure any default in the giving or in the time of such notice, as the case may be. Any such waiver or abridgement shall be in writing except a waiver of notice of a meeting of shareholders or of the board or of a committee of the board which may be given in any manner.

SECTION TWELVE

ELECTRONIC DOCUMENTS

12.01 Creation and Provision of Information

Unless the Corporation's articles provide otherwise, and subject to and in accordance with the Act, the Corporation may satisfy any requirement of the Act to create or provide a notice, document or other information to any person by the creation or provision of an electronic document. Except as provided in the Act, "electronic document" means any form of representation of information or of concepts fixed in any medium in or by electronic, optical or other similar means that can be read or perceived by a person by any means.

SECTION THIRTEEN

EFFECTIVE DATE

13.01 Effective Date

This by-law shall come into force upon being passed by the board.

ENACTED this 20th day of May, 2011.

“John van Leeuwen”

**John van Leeuwen,
Chief Executive Officer**

“Robert Haire”

**Robert Haire,
Chief Financial Officer**

BE IT RESOLVED THAT the foregoing By-law No. 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 Chief Executive Officer and the Chief Financial Officer be and they are hereby authorized to sign the by-law.

The undersigned, being the directors of the Corporation by their signatures hereby consent, pursuant to the provisions of the Act, to the foregoing resolution.

DATED as of the 20th day of May, 2011.

“John van Leeuwen”

John van Leeuwen

“John E. Barker”

John E. Barker

“David W. Colcleugh”

David W. Colcleugh

BE IT RESOLVED THAT the foregoing By-law No. 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 the shareholder of the Corporation by his signature hereby consents, pursuant to the provisions of the Act, to the foregoing resolution.

DATED as of the 20th day of May, 2011.

“John van Leeuwen”

John van Leeuwen