
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549**

**FORM S-3
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933**

BIOAMBER INC.

(Exact name of Registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

20-1579162
(I.R.S. Employer
Identification Number)

**1250 Rene Levesque West, Suite 4110
Montreal, Quebec, Canada H3B 4W8
Telephone: (514) 844-8000**

**3850 Annapolis Lane North, Suite 180
Plymouth, Minnesota 55447
Telephone: (763) 253-4480**

(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant's Principal Executive Offices)

**Jean-François Huc
President and Chief Executive Officer
BioAmber Inc.**

**1250 Rene Levesque West, Suite 4110
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(Name, Address, Including Zip Code, and Telephone Number, Including Area Code, of Agent for Service)

Copies to:

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Goodwin Procter LLP
Exchange Place
Boston, Massachusetts 02109-2881
(617) 570-1000**

Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this registration statement

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, as amended, or the Securities Act, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Securities Exchange Act of 1934, as amended, or the Exchange Act.

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities To Be Registered(1)	Proposed Maximum Aggregate Offering Price(1)	Amount of Registration Fee(1)
Common Stock, \$0.01 par value per share	(2)	(2)
Preferred Stock, \$0.01 par value per share	(2)	(2)
Warrants	(2)	(2)
Debt Securities	(2)	(2)
Units(3)	(2)	(2)
Total	\$100,000,000	\$12,880

- (1) An indeterminate amount of the securities of each identified class is being registered as may from time to time be offered hereunder at indeterminate prices, along with an indeterminate number of securities that may be issued upon exercise, settlement, exchange or conversion of securities offered or sold hereunder. Separate consideration may or may not be received for securities that are issuable upon conversion, exercise or exchange of other securities. In addition, the proposed maximum aggregate offering price is estimated solely for the purpose of calculating the registration fee pursuant to Rule 457(o) under the Securities Act of 1933, as amended.
- (2) The proposed maximum aggregate offering price per unit will be determined from time to time by the registrant in connection with the issuance by the registrant of the securities registered hereunder and is not specified as to each class of security pursuant to General Instruction II.D. of Form S-3 under the Securities Act of 1933, as amended.
- (3) Consisting of some or all of the securities listed above, in any combination, including common stock, preferred stock, debt securities and warrants.

The registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment that specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act, or until the Registration Statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

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The information in this prospectus is not complete and may be changed. We may not sell or accept an offer to buy these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it is not soliciting offers to buy these securities in any jurisdiction where such offer or sale is not permitted.

Subject to Completion, Dated June 2, 2014

PROSPECTUS



\$100,000,000

Common Stock

Preferred Stock

Debt Securities

Warrants

Units

From time to time, we may offer up to \$100,000,000 of any combination of the securities described in this prospectus, either individually or in units. Each time we offer securities, we will provide the specific terms of the securities offered in one or more supplements to this prospectus. We may also authorize one or more free writing prospectuses to be provided to you in connection with these offerings. The prospectus supplement and any related free writing prospectus may also add, update or change information contained in this prospectus. You should carefully read this prospectus, the applicable prospectus supplement and any related free writing prospectus, as well as any documents incorporated by reference, before buying any of the securities being offered.

The securities offered by this prospectus may be sold directly by us to investors, through agents designated from time to time or to or through underwriters or dealers. We will set forth the names of any underwriters or agents and any applicable fees, commissions, discounts and over-allotments in an accompanying prospectus supplement. For additional information on the methods of sale, you should refer to the section entitled "Plan of Distribution" in this prospectus and in the applicable prospectus supplement. The price to the public of such securities and the net proceeds we expect to receive from such sale will also be set forth in a prospectus supplement.

Our common stock is traded on the New York Stock Exchange under the symbol "BIOA." On June 2, 2014, the last reported sale price of our common stock on the New York Stock Exchange was \$9.65 per share. The applicable prospectus supplement will contain information, where applicable, as to any other listing, if any, on the New York Stock Exchange or any securities market or other exchange of the securities covered by the applicable prospectus supplement.

Investing in our securities involves a high degree of risk. You should review carefully the risks and uncertainties referenced under the heading "[Risk Factors](#)" on page 8 of this prospectus as well as those contained in the applicable prospectus supplement and any related free writing prospectus, and in the other documents that are incorporated by reference into this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is _____, 2014.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the Securities and Exchange Commission, or the SEC, utilizing a “shelf” registration process. Under this shelf registration process, we may offer shares of our common stock and preferred stock, various series of warrants to purchase common stock or preferred stock and debt securities, either individually or in units, in one or more offerings, up to a total dollar amount of \$100,000,000. This prospectus provides you with a general description of the securities we may offer. Each time we offer a type or series of securities under this prospectus, we will provide a prospectus supplement that will contain more specific information about the specific terms of the offering. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. Each such prospectus supplement and any related free writing prospectus that we may authorize to be provided to you may also add, update or change information contained in this prospectus or in documents incorporated by reference into this prospectus. We urge you to carefully read this prospectus, any applicable prospectus supplement and any related free writing prospectus, together with the information incorporated herein by reference as described under the headings “Where You Can Find Additional Information” and “Incorporation of Certain Information by Reference” before buying any of the securities being offered.

You should rely only on the information contained or incorporated by reference in this prospectus, any applicable prospectus supplement and any related free writing prospectus. We have not authorized anyone to provide you with different information in addition to or different from that contained in this prospectus, any applicable prospectus supplement and any related free writing prospectus. No dealer, salesperson or other person is authorized to give any information or to represent anything not contained in this prospectus, any applicable prospectus supplement or any related free writing prospectus that we may authorize to be provided to you. You must not rely on any unauthorized information or representation. This prospectus is an offer to sell only the securities offered hereby, but only under circumstances and in jurisdictions where it is lawful to do so. You should assume that the information in this prospectus, any applicable prospectus supplement or any related free writing prospectus is accurate only as of the date on the front of the document and that any information incorporated by reference is accurate only as of the date of the document incorporated by reference, regardless of the time of delivery of this prospectus, any applicable prospectus supplement or any related free writing prospectus, or any sale of a security. Our business, financial condition, results of operating and prospects may have changed materially since those dates.

This prospectus contains summaries of certain provisions contained in some of the documents described herein, but reference is made to the actual documents for complete information. All of the summaries are qualified in their entirety by the actual documents. Copies of some of the documents referred to herein have been filed, will be filed or will be incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and you may obtain copies of those documents as described below under the heading “Where You Can Find Additional Information.”

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We post on our public website (www.bio-amber.com) our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, or the Exchange Act, as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. Our website and the information contained on that site, or connected to that site, are not incorporated into and are not a part of this prospectus.

You can find, copy and inspect information we file with the SEC at the SEC’s public reference room, which is located at 100 F Street, N.E. Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for more information about the operation of the SEC’s public reference room. You can also review our electronically filed reports and other information that we file with the SEC on the SEC’s website at <http://www.sec.gov>.

This prospectus is part of a registration statement that we filed with the SEC. The registration statement contained more information than this prospectus regarding us and the securities, including exhibits and schedules. You can obtain a copy of the registration statement from the SEC at any address listed above or from the SEC’s website. You should review the information and exhibits in the registration statement for further information on us and our consolidated subsidiary and the securities we are offering. Statements in this prospectus concerning any document we filed as an exhibit to the registration statement or that we otherwise filed with the SEC are not intended to be comprehensive and are qualified by reference to these filings. You should review the complete document to evaluate these statements.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to “incorporate by reference” the information we file with it, which means that we can disclose important information to you by referring you to those documents instead of having to repeat the information in this prospectus. The information incorporated by reference is considered to be part of this prospectus, and later information that we file with the SEC will automatically update and supersede this information. We incorporate by reference the documents listed below that we have filed with the SEC:

- description of our common stock contained in our Registration Statement on Form 8-A, filed May 1, 2013;
- description of our warrants contained in our Registration Statement on Form 8-A/A filed May 9, 2013 and amended on May 10, 2013;
- our Annual Report on Form 10-K for the year ended December 31, 2013, filed on March 28, 2014;
- our Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2014, filed on May 13, 2014; and
- our Proxy Statement on Schedule 14A filed with the SEC on April 30, 2014.

We also incorporate by reference into this prospectus all documents (other than current reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items) that are filed by us with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (i) after the date of the initial filing of the registration statement of which this prospectus is a part and prior to effectiveness of the registration statement, or (ii) after the date of this prospectus until we sell all of the shares covered by this prospectus or the sale of shares by us pursuant to this prospectus is terminated.

A statement contained in a document incorporated by reference into this prospectus shall be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus, any prospectus supplement or in any other subsequently filed document which is also incorporated in this prospectus modifies or replaces such statement. Any statements so modified or superseded shall not be deemed, except as so modified or superseded, to constitute a part of this prospectus. You should not assume that the information in this prospectus or in the documents incorporated by reference is accurate as of any date other than the date on the front of this prospectus or those documents.

You may request a copy of these documents, orally or in writing, which will be provided to you at no cost by contacting: BioAmber Inc., 1250 Rene Levesque West, Suite 4110, Montreal, Quebec, Canada H3B 4W8, or calling (514) 844-8000.

FORWARD-LOOKING STATEMENTS

This prospectus contains statements that are not historical facts and are considered forward-looking within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Exchange Act. These forward-looking statements contain projections of our future results of operations or of our financial position or state other forward-looking information. In some cases you can identify these statements by forward-looking words such as “anticipate,” “believe,” “could,” “continue,” “estimate,” “expect,” “intend,” “may,” “should,” “will,” “would,” “plan,” “projected” or the negative of such words or other similar words or phrases. We believe that it is important to communicate our future expectations to our investors. However, there may be events in the future that we are not able to accurately predict or control and that may cause our actual results to differ materially from the expectations we describe in our forward-looking statements. Investors are cautioned not to unduly rely on forward-looking statements because they involve risks and uncertainties, and actual results may differ materially from those discussed as a result of various factors, including, but not limited to:

- the expected funding sources of our planned Samia, Ontario plant and our other planned manufacturing facilities and the expected timing of the completion of construction and the start of commercial operations at each of these facilities;
- our joint venture with Mitsui & Co. Ltd., or Mitsui;
- our take-or-pay agreement with Vinmar International Ltd., or Vinmar, related to bio-based 1, 4 BDO;
- our take-or-pay agreement with PTT MCC Biochem Company Limited, or PTTMCC, related to bio-succinic acid from our planned Samia, Ontario plant;
- the expected applications of our products and the sizes of addressable markets;
- our ability to gain market acceptance for bio-succinic acid, its derivatives and other building block chemicals;
- the benefits of our transition from our *E. coli* bacteria to our yeast;
- our ability to commence commercial sales and execute on our commercial expansion plan, including the timing and volume of our future production and sales;
- the expected cost-competitiveness and relative performance attributes of our bio-succinic acid and the products derived from it;
- our ability to cost-effectively produce and commercialize bio-succinic acid, its derivatives and other building block chemicals;
- customer qualification, approval and acceptance of our products;
- our ability to maintain and advance strategic partnerships and collaborations and the expected benefits and accessible markets related to those partnerships and collaborations;
- our ability to economically obtain feedstock and other inputs;
- the achievement of advances in our technology platform;
- our ability to obtain and maintain intellectual property protection for our products and processes and not infringe on others’ rights;
- government regulatory and industry certification approvals for our facilities and products;
- government policymaking and incentives relating to bio-chemicals;

and other risks and uncertainties referenced under “Risk Factors” below and in any applicable prospectus supplement or free writing prospectus and any documents incorporated by reference herein or therein. You should not place undue reliance on our forward-looking statements. These forward-looking statements speak only as of the date on which the statements were made and are not guarantees of future performance. Except as may be required by applicable law, we do not undertake or intend to update any forward-looking statements after the date of this prospectus or the respective dates of documents incorporated herein or therein that include forward-looking statements.

SUMMARY

This summary highlights selected information from this prospectus or incorporated by reference in this prospectus, and does not contain all of the information that you need to consider in making your investment decision. You should carefully read the entire prospectus, the applicable prospectus supplement and any related free writing prospectus, including the risks of investing in our securities referred to under the heading “Risk Factors” in this prospectus and contained in the applicable prospectus supplement and any related free writing prospectus, and in the other documents that are incorporated by reference into this prospectus. You should also carefully read the information incorporated by reference into this prospectus, including our financial statements, and the exhibits to the registration statement of which this prospectus is a part.

Unless otherwise mentioned or unless the context requires otherwise, throughout this prospectus, any applicable prospectus supplement and any related free writing prospectus, the words “BioAmber,” “we,” “us,” “our,” the “company” or similar references refer to BioAmber Inc. and its subsidiaries; and the term “securities” refers collectively to our common stock, preferred stock, warrants to purchase common stock or preferred stock, debt securities, or any combination of the foregoing securities.

This prospectus and the information incorporated herein by reference includes trademarks, service marks and trade names owned by us or other companies. All trademarks, service marks and trade names included or incorporated by reference into this prospectus, any applicable prospectus supplement or any related free writing prospectus are the property of their respective owners.

Our Company

We are an industrial biotechnology company producing sustainable chemicals. Our proprietary technology platform combines industrial biotechnology and chemical catalysis to convert renewable feedstocks into sustainable chemicals that are cost-competitive replacements for petroleum-derived chemicals, which are used in a wide variety of everyday products including plastics, resins, food additives and personal care products. We currently sell our first product, bio-succinic acid, to customers in a variety of chemical markets. We intend to produce bio-succinic acid that is cost-competitive with succinic acid produced from petroleum at our planned facility in Sarnia, Ontario. We currently produce our bio-succinic acid in a large-scale demonstration facility using a 350,000 liter fermenter in Pomacle, France, which we believe to be among the largest bio-based chemical fermenters in the world. We have produced approximately 3.39 million pounds, or 1.539 metric tons, of bio-succinic acid at this facility as of May 31, 2014.

Succinic acid can be used to manufacture a wide variety of products used every day, including plastics, food additives and personal care products, and can also be used as a building block for a number of derivative chemicals. Today, petroleum-derived succinic acid is not used in many potential applications because of its relatively high production costs and selling price. We believe that our low-cost production capability and our development of next-generation bio-succinic derived products including 1,4 BDO, which is used to produce polyesters, plastics, spandex and other products, will provide us with access to a more than \$10 billion market opportunity. Combining these opportunities with other building block chemicals we are developing, such as adipic acid, which is used in the production of nylons, we believe that our total addressable market is in excess of \$30 billion.

We believe we can produce bio-succinic acid that is cost-competitive with succinic acid produced from oil priced as low as \$35 per barrel, based on management’s estimates of production costs at our planned facility in Sarnia, Ontario and an assumed corn price of \$6.50 per bushel. While we can provide no assurance that we will be able to secure corn at \$6.50 per bushel given the fluctuations in corn prices, we believe this assumption is reasonable given the historic price of corn and management’s expectations as to their ability to manage the cost of glucose from corn and other inputs for our planned facility in Sarnia, Ontario. Over the past five years, the price of corn ranged from a low of \$2.68 per bushel to a high of \$8.44 per bushel. As of May 31, 2014, the spot price was \$4.52 per bushel and the six-month forward price was \$4.58 per bushel. We estimate that a \$1.00 increase or decrease in the per bushel price of corn would result in just a \$0.025 per pound change in our variable cost of our bio-succinic acid. We expect the productivity of our yeast organism and on-going process improvements to further reduce our production costs. Our ability to compete on cost is not dependent on government subsidies or tariffs.

We have signed a take-or-pay supply agreement with PTT-MCC Biochem for the supply of bio-succinic acid for their subsequent production of bio-based polymers. We have entered into strategic relationships with several segment leaders, such as our partnership with LANXESS for phthalate-free plasticizers made with bio-succinic acid, our agreement with Inolex for the development and commercialization of succinic acid esters in personal care applications, and our collaboration with Stahl for the development of coatings made with our bio-succinic acid.

We have also entered into technology partnerships to lower our production costs, expand our product portfolio and enhance our biochemical production platform. For example, we entered into a technology partnership with Cargill through which we exclusively

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license a proprietary yeast organism for use in our fermentation process to produce our products. We refer to the yeast organism that we have licensed from Cargill as “our yeast.” We have also established other technology licenses and collaborations, including with DuPont, Evonik and Celexion.

Our business strategy is to leverage the value of our technology by building and operating production facilities around the world. However, depending on our access to capital and third-party demand for our technology, we may also enter into technology licenses on an opportunistic basis.

In order to support our growth, we plan to rapidly expand our manufacturing capacity beyond the current production at the large-scale demonstration facility we operate in Pomacle, France. We have entered into a joint venture with Mitsui to finance, build and operate a manufacturing facility in Samia, Ontario through our BioAmber Samia subsidiary in which we own a 70% equity interest and Mitsui owns the remaining 30%. The joint venture agreement, which was entered into on November 2, 2011 and amended on January 24, 2014, also establishes our non-binding intent to build and operate a BDO and/or succinic acid production facility with Mitsui, which we expect to occur by the end of 2017. As part of the amendment, Mitsui increased its maximum capital commitment to the project from \$23.7 million to \$45.6 million in order to maintain a 30% equity stake in the joint venture. In exchange, Mitsui obtained the right to sell us back its shares in the Samia joint venture under certain specific circumstances: (i) Mitsui has the right to sell its shares and we have the obligation to purchase those shares at 100% of the investment value if the cost of the Samia facility is greater than \$140 million and we do not provide the additional funds to complete the facility, with a corresponding increase in our prorata share of the joint venture; (ii) in the event of an occurrence of a dissolution event of the joint venture until December 31, 2020, Mitsui has the right to sell its shares and we have the obligation to purchase those shares at 100% of the investment value, with the dissolution event consisting of the Samia plant not being operational by January 31, 2016, cumulative losses accrued from 2016 through 2020 exceeding 75% of paid-in capital, no after-tax profit earned in any three consecutive years from 2016 onwards, and any act of insolvency, bankruptcy, or similar event, and (iii) until December 31, 2018, Mitsui in its sole discretion may sell its shares and we must purchase those shares at a 50% discount to their investment value.

To date, we have entered into several supply agreements and memoranda of understanding, or MOUs, that contemplate, but do not obligate, us to supply approximately 144,000 metric tons of bio-succinic acid, and, as we continue construction of our planned facility in Samia, Ontario, we are actively seeking to enter into definitive supply agreements and form new relationships with potential customers. For example, on April 18, 2014, we entered into a three year supply agreement with PTT MCC Biochem Company Limited, or PTTMCC, a joint venture between PTT Public Company Limited and Mitsubishi Chemical Corporation that was established to produce and sell polybutylene succinate, or PBS, a biodegradable plastic made from succinic acid and 1,4 BDO. PTTMCC is constructing a PBS plant in Thailand that is expected to be operational in the first half of 2015 and consume approximately 14,000 tons of succinic acid per year at full capacity. This supply agreement provides that we will exclusively supply a minimum of 80% of PTTMCC’s total bio-succinic needs until the end of 2017, with approximately 50% of the total purchases under take-or-pay terms. This is one of many potential customers and applications that we are targeting for the bio-succinic acid that we plan to produce at our Samia facility, and we expect to enter into additional definitive supply agreements in advance of mechanical completion in late 2014 or early 2015. These supply agreements reflect our ongoing efforts to expand the succinic acid addressable market into new applications such as PBS.

We also expect to grow our revenue base by developing new value-added applications and derivative products. On January 22, 2014, we entered into a 15 year take-or-pay contract for bio-based 1,4-Butanediol (BDO) with Vinmar International Ltd., a privately held marketing, distribution, and project developed company headquartered in Houston, Texas. Under the terms of the master off-take agreement, Vinmar has committed to purchase 100% of the bio-based 1, 4 BDO produced in a 100,000 metric ton per year capacity plant that we plan to build in North America and commission in 2017. Vinmar also plans to invest in the facility alongside us. While this agreement is binding, our inability to finance and construct the BDO plant would relieve Vinmar of its obligation to purchase BDO under the terms of the take-or-pay agreement.

We are committed to managing our economic, social, environmental and ethical performance through continued sustainable business practices. We have completed a life cycle analysis for our planned facility in Samia that indicates that no carbon dioxide equivalent (or greenhouse gases) will be emitted per kilogram of our bio-succinic acid produced, making our process carbon neutral. This is significantly less carbon intensive than the current petrochemical process for making succinic acid, in which 7.1 kilograms of carbon dioxide equivalent are emitted per kilogram of succinic acid produced. This represents a 100% reduction in greenhouse gases for our bio-succinic acid process, relative to the current petrochemical process for making succinic acid. The life cycle analysis also indicates that our planned facility in Samia will consume 60% less energy than the current petrochemical process.

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We were incorporated in the State of Delaware in October 2008 as DNP Green Technology, Inc. and were established as the result of the spin-off of certain assets from Diversified Natural Products, Inc. In September 2010, we acquired the 50% interest in our joint venture BioAmber S.A.S. that we did not already own, after which, BioAmber S.A.S. became wholly owned by us. Concurrent with this acquisition, we changed our name from DNP Green Technology, Inc. to BioAmber Inc. and changed our fiscal year end from June 30 to December 31.

Our principal executive offices are located at 1250 Rene Levesque West, Suite 4110, Montreal, Quebec, Canada H3B 4W8, and our principal research and development facility is located at 3850 Annapolis Lane North, Suite 180, Plymouth, Minnesota, United States of America, 55447. Our telephone number in the United States is (763) 253-4480 and our telephone number in Canada is (514) 844-8000. Our website address is www.bio-amber.com. We do not incorporate the information on or accessible through our website into this prospectus, and you should not consider any information on, or that can be accessed through, our website as part of this prospectus.

The Securities We May Offer

We may offer shares of our common stock and preferred stock, various series of warrants to purchase common stock or preferred stock and debt securities, in one or more series, as either senior or subordinated debt or as senior or subordinated convertible debt, either individually or in units, with a total value of up to \$100,000,000 from time to time under this prospectus at prices and on terms to be determined at the time of any offering. This prospectus provides you with a general description of the securities we may offer. Each time we offer a type or series of securities under this prospectus, we will provide a prospectus supplement that will describe the specific amounts, prices and other important terms of the securities.

The prospectus supplement and any related free writing prospectus that we may authorize to be provided to you may also add, update or change information contained in this prospectus or in documents we have incorporated by reference. However, no prospectus supplement or free writing prospectus will offer a security that is not registered and described in this prospectus at the time of the effectiveness of the registration statement of which this prospectus is a part.

We may sell the securities directly to investors or to or through agents, underwriters or dealers. We, and our agents or underwriters, reserve the right to accept or reject all or part of any proposed purchase of securities. If we do offer securities to or through agents or underwriters, we will include in the applicable prospectus supplement:

- the names of those agents or underwriters;
- applicable fees, discounts and commissions to be paid to them;
- details regarding over-allotment options, if any; and
- the net proceeds to us.

Common Stock. We may issue shares of our common stock from time to time. Holders of shares of our common stock are entitled to one vote for each share held of record on all matters to be voted on by stockholders and do not have cumulative voting rights. Subject to the preferences that may be applicable to any then outstanding preferred stock, the holders of our outstanding shares of common stock are entitled to receive dividends, if any, as may be declared from time to time by our board of directors out of legally available funds. In the event of our liquidation, dissolution or winding up, holders of our common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities, subject to the satisfaction of any liquidation preference granted to the holders of any outstanding shares of preferred stock.

Preferred Stock. We may issue shares of our preferred stock from time to time, in one or more series. Our board of directors will determine the rights, preferences and privileges of the shares of each wholly unissued series, and any qualifications, limitations or restrictions thereon, including dividend rights, conversion rights, preemptive rights, terms of redemption or repurchase, liquidation preferences, sinking fund terms and the number of shares constituting any series or the designation of any series. Convertible preferred stock will be convertible into our common stock or exchangeable for other securities. Conversion may be mandatory or at your option and would be at prescribed conversion rates.

If we sell any series of preferred stock under this prospectus, we will fix the rights, preferences and privileges of the preferred stock of such series, as well as any qualifications, limitations or restrictions thereon, in the certificate of designation relating to that series. We will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of any certificate of designation that describes the terms of the series of preferred stock we are offering before the issuance of that series of preferred stock. We urge you to read the applicable prospectus supplement and any free writing prospectus that we may authorize to be provided to you related to the series of preferred stock being offered, as well as the complete certificate of designation that contains the terms of the applicable series of preferred stock.

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Debt Securities. We may issue debt securities, in one or more series, as either senior or subordinated debt or as senior or subordinated convertible debt. In this prospectus, we have summarized certain general features of the debt securities. We urge you, however, to read the applicable prospectus supplement and any free writing prospectus that we may authorize to be provided to you related to the particular series of debt securities being offered, as well as the complete indenture that contains the terms of the debt securities. We will file as exhibits to the registration statement of which this prospectus is a part, the form of indenture and any supplemental agreements that describe the terms of the series of debt securities we are offering before the issuance of the related series of debt securities.

We may evidence each series of debt securities by indentures we will issue. Debt securities may be issued under an indenture that we enter into with a trustee. We will indicate the name and address of the trustee, if applicable, in the prospectus supplement relating to the particular series of debt securities being offered.

Warrants. We may issue warrants for the purchase of common stock and/or preferred stock in one or more series. We may issue warrants independently or together with common stock and/or preferred stock and/or debt securities, and the warrants may be attached to or separate from these securities. In this prospectus, we have summarized certain general features of the warrants. We urge you, however, to read the applicable prospectus supplement and any free writing prospectus that we may authorize to be provided to you related to the particular series of warrants being offered, as well as the complete warrant agreements and warrant certificates that contain the terms of the warrants. Forms of the warrant agreements and forms of warrant certificates containing the terms of the warrants being offered will be filed as exhibits to the registration statement of which this prospectus is a part or will be incorporated by reference from reports that we file with the SEC.

We will evidence each series of warrants by warrant certificates that we will issue. Warrants may be issued under an applicable warrant agreement that we enter into with a warrant agent. We will indicate the name and address of the warrant agent, if applicable, in the prospectus supplement relating to the particular series of warrants being offered.

Units. We may issue, in one or more series, units consisting of common stock, preferred stock, debt securities and/or warrants for the purchase of common stock and/or preferred stock in any combination. In this prospectus, we have summarized certain general features of the units. We urge you, however, to read the applicable prospectus supplement (and any free writing prospectus that we may authorize to be provided to you) related to the series of units being offered, as well as the complete unit agreement that contains the terms of the units. We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of unit agreement and any supplemental agreements that describe the terms of the series of units we are offering before the issuance of the related series of units.

We will evidence each series of units by unit certificates that we will issue. Units may be issued under a unit agreement that we enter into with a unit agent. We will indicate the name and address of the unit agent, if applicable, in the prospectus supplement relating to the particular series of units being offered.

RISK FACTORS

Investing in our securities involves a high degree of risk. Before purchasing our securities, you should carefully consider the risks and uncertainties set forth under the heading “Risk Factors” in our Annual Report on Form 10-K for the fiscal year ended December 31, 2013, filed with the SEC on March 28, 2014, and our Quarterly Report on Form 10-Q for the fiscal quarter ended March 31, 2014, filed with SEC on May 13, 2014, which are incorporated by reference in this prospectus, as well as any updates thereto contained in subsequent filings with the SEC or any applicable prospectus supplement or free writing prospectus. If any of these risks were to occur, our business, financial condition or results of operations would likely suffer. In that event, the value of our securities could decline, and you could lose all or part of your investment. The risks and uncertainties we describe are not the only ones facing us. Additional risks not presently known to us or that we currently deem immaterial may also impair our business operations.

RATIO OF EARNINGS TO FIXED CHARGES

Our ratio of earnings to fixed charges for each of the five most recently completed fiscal years and any required interim periods will each be specified in a prospectus supplement or in a document that we file with the SEC and incorporate by reference pertaining to the issuance, if any, by us of preference securities in the future.

USE OF PROCEEDS

Except as described in any prospectus supplement or in any related free writing prospectus that we may authorize to be provided to you, the net proceeds received by us from our sale of the securities described in this prospectus will be added to our general funds and will be used for our general corporate purposes. From time to time, we may engage in additional public or private financings of a character and amount which we may deem appropriate.

DILUTION

If there is a material dilution of the purchasers' equity interest from the sale of common equity securities offered under this prospectus, we will set forth in any prospectus supplement the following information regarding any such material dilution of the equity interests of purchasers securities in an offering under this prospectus:

- the net tangible book value per share of our equity securities before and after the offering;
- the amount of the increase in such net tangible book value per share attributable to the cash payments made by the purchasers in the offering; and
- the amount of the immediate dilution from the public offering price which will be absorbed by such purchasers.

PLAN OF DISTRIBUTION

We may sell the securities from time to time pursuant to underwritten public offerings, negotiated transactions, block trades or a combination of these methods. We may sell the securities to or through underwriters or dealers, through agents, or directly to one or more purchasers. We may distribute securities from time to time in one or more transactions:

- at a fixed price or prices, which may be changed;
- at market prices prevailing at the time of sale;
- at prices related to such prevailing market prices; or
- at negotiated prices.

Each time we offer and sell securities, we will provide a prospectus supplement that will set forth the terms of the offering of the securities, including:

- the name or names of the underwriters, if any;
- the purchase price of the securities and the proceeds we will receive from the sale;
- any over-allotment options under which underwriters may purchase additional securities;
- any agency fees or underwriting discounts and other items constituting agents' or underwriters' compensation;
- any public offering price;
- any discounts or concessions allowed or reallocated or paid to dealers; and
- any securities exchange or market on which the securities may be listed.

If underwriters are used in the sale, they will acquire the securities for their own account and may resell the securities from time to time in one or more transactions at a fixed public offering price or at varying prices determined at the time of sale. The obligations of the underwriters to purchase the securities will be subject to the conditions set forth in the applicable underwriting agreement. We may offer the securities to the public through underwriting syndicates represented by managing underwriters or by underwriters without a syndicate. Subject to certain conditions, the underwriters will be obligated to purchase all of the securities offered by the prospectus supplement, other than securities covered by any over-allotment option. Any public offering price and any discounts or concessions allowed or reallocated or paid to dealers may change from time to time. We may use underwriters with whom we or they have a material relationship. The prospectus supplement, naming the underwriter, will describe the nature of any such relationship.

We may sell securities directly or through agents we or they designate from time to time. The prospectus supplement will name any agent involved in the offering and sale of securities and any commissions we will pay to them. Unless the prospectus supplement states otherwise, any agent will be acting on a best-efforts basis for the period of its appointment.

We may authorize agents or underwriters to solicit offers by certain purchasers to purchase securities from us or them at the public offering price set forth in the prospectus supplement pursuant to delayed delivery contracts providing for payment and delivery on a specified date in the future. The prospectus supplement will set forth the conditions to these contracts and any commissions we must pay for solicitation of these contracts.

We may provide agents and underwriters with indemnification against civil liabilities, including liabilities under the Securities Act, or contribution with respect to payments that the agents or underwriters may make with respect to these liabilities. Agents and underwriters may engage in transactions with, or perform services for, us in the ordinary course of business.

All securities we may offer, other than common stock, will be new issues of securities with no established trading market. Any underwriters may make a market in these securities, but will not be obligated to do so and may discontinue any market making at any time without notice. We cannot guarantee the liquidity of the trading markets for any securities.

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Any underwriter may engage in over-allotment, stabilizing transactions, short-covering transactions and penalty bids in accordance with Regulation M under the Exchange Act. Over-allotment involves sales in excess of the offering size, which create a short position. Stabilizing transactions permit bids to purchase the underlying security so long as the stabilizing bids do not exceed a specified maximum price. Syndicate-covering or other short-covering transactions involve purchases of the securities, either through exercise of the over-allotment option or in the open market after the distribution is completed, to cover short positions. Penalty bids permit the underwriters to reclaim a selling concession from a dealer when the securities originally sold by the dealer are purchased in a stabilizing or covering transaction to cover short positions. Those activities may cause the price of the securities to be higher than it would otherwise be. If commenced, the underwriters may discontinue any of the activities at any time.

Any underwriters that are qualified market makers on the New York Stock Exchange, or NYSE, may engage in passive market making transactions in the common stock on the NYSE in accordance with Regulation M under the Exchange Act, during the business day prior to the pricing of the offering, before the commencement of offers or sales of the common stock. Passive market makers must comply with applicable volume and price limitations and must be identified as passive market makers. In general, a passive market maker must display its bid at a price not in excess of the highest independent bid for such security; if all independent bids are lowered below the passive market maker's bid, however, the passive market maker's bid must then be lowered when certain purchase limits are exceeded. Passive market making may stabilize the market price of the securities at a level above that which might otherwise prevail in the open market and, if commenced, may be discontinued at any time.

DESCRIPTION OF CAPITAL STOCK

General

Our authorized capital stock consists of 250,000,000 shares of common stock, \$0.01 par value per share, and 5,000,000 shares of preferred stock, \$0.01 par value per share. As of May 31, 2014, there were 18,586,299 shares of our common stock outstanding, warrants issued as part of the units in our initial public offering, or IPO warrants, to purchase 4,000,000 shares of our common stock and warrants issued prior to our initial public offering, or legacy warrants, to purchase 1,305,371 shares of our common stock outstanding.

The following summary description of our capital stock is based on the provisions of our amended and restated certificate of incorporation, amended and restated bylaws, form of IPO warrant, legacy warrants and the applicable provisions of the Delaware General Corporation Law. This information is qualified entirely by reference to the applicable provisions of our amended and restated certificate of incorporation, amended and restated bylaws, form of IPO warrant, legacy warrants and the Delaware General Corporation Law. For information on how to obtain copies of our amended and restated certificate of incorporation and amended and restated bylaws, which are exhibits to the registration statement of which this prospectus is a part, see “Where You Can Find Additional Information” and “Incorporation of Certain Information by Reference.”

Common Stock

Holders of our common stock are entitled to one vote for each share of common stock held of record for the election of directors and on all matters submitted to a vote of stockholders. Holders of our common stock do not have cumulative voting rights in the election of directors. Holders of our common stock are entitled to receive dividends ratably, if any, as may be declared by our board of directors out of legally available funds, subject to any preferential dividend rights of any preferred stock then outstanding. Upon our dissolution, liquidation or winding up, holders of our common stock are entitled to share ratably in our net assets legally available after the payment of all our debts and other liabilities, subject to the preferential rights of any preferred stock then outstanding. Holders of our common stock have no preemptive, subscription, redemption or conversion rights. There are no sinking fund provisions applicable to our common stock. The rights, preferences and privileges of holders of common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future. Except as described under “—Antitakeover Effects of Delaware Law, Provisions of our Amended and Restated Certificate of Incorporation and Amended and Restated By-laws and French Law Takeover Regulations” below, a majority vote of the holders of common stock is generally required to take action under our amended and restated certificate of incorporation and amended and restated by-laws.

IPO Warrants

The following description of our IPO warrants is subject to, and qualified in its entirety by, the form of IPO warrant, which filed as an exhibit to our registration statement on Form S-1 file number 333-177917. You should review a copy of the form of IPO warrant for a complete description of the terms and conditions applicable to the IPO warrants.

Term. The IPO warrants are exercisable during the period beginning on August 8, 2013 and ending at 5:30 P.M. on May 9, 2017. The term can also be extended by us at our sole discretion.

Anti-Dilution Protection. The IPO warrants contain full ratchet anti-dilution protection upon the issuance of any common stock, securities convertible into common stock or certain other issuances at a price below the then-existing exercise price of the IPO warrants, with certain exceptions.

Exercise Price. The exercise price of the IPO warrants is \$11.00 per whole share of common stock. The exercise price is subject to appropriate adjustment in the event of certain stock dividends and distributions, stock splits, stock combinations, stock issuances, reclassifications or similar events affecting our common stock, as well as the anti-dilution protection described above. The exercise price can also be lowered by us at our sole discretion.

Exercisability. The IPO warrants became exercisable on August 8, 2013 and are exercisable at any time during the applicable term of the IPO warrant. The IPO warrants are exercisable, at the option of each holder, in whole or in part, by delivering to us a duly executed exercise notice accompanied by payment in full for the number of shares of our common stock purchased upon such exercise.

No Fractional Shares. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of the IPO warrants. As to any fraction of a share which the holder would otherwise be entitled to purchase upon such exercise, we shall, at our election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the exercise price of the IPO warrant or round up to the next whole share.

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Transferability. Subject to applicable laws and the restriction on transfer set forth in the IPO warrants, the IPO warrants may be transferred at the option of the holder upon surrender of the IPO warrants to us together with the appropriate instruments of transfer.

Authorized Shares. During the period the IPO warrants are outstanding, we will reserve from our authorized and unissued common stock a sufficient number of shares to provide for the issuance of shares of common stock underlying the IPO warrants upon the exercise of the IPO warrants.

Exchange Listing. The IPO warrants are listed on NYSE under the symbol “BIOA.WS”.

Fundamental Transactions. In the event of any fundamental transaction, as described in the IPO warrants and generally including any merger with or into another entity, sale of all or substantially all of our assets, tender offer or exchange offer, or reclassification of our common stock, then upon any subsequent exercise of an IPO warrant the holder shall have the right to receive as alternative consideration, for each share of our common stock that would have been issuable upon such exercise immediately prior to the occurrence of such fundamental transaction, the number of shares of common stock of the successor or acquiring corporation or of BioAmber, if it is the surviving corporation, and any additional consideration receivable upon or as a result of such transaction by a holder of the number of shares of our common stock for which the IPO warrant is exercisable immediately prior to such event. In addition, in the event of a fundamental transaction in which the amount of the alternate consideration is less than the exercise price of the warrant, then we or any successor entity shall pay at the holder’s option, exercisable at any time concurrently with or within ninety (90) days after the consummation of the fundamental transaction, an amount of cash equal to the value of the IPO warrant as determined in accordance with the Black Scholes option pricing model.

Right as a Stockholder. Except as otherwise provided in the IPO warrants or by virtue of such holder’s ownership of shares of our common stock, the holders of the IPO warrants do not have the rights or privileges of holders of our common stock, including any voting rights, until they exercise their IPO warrants.

Waivers and Amendments. Any term of the IPO warrants may be amended or waived with our written consent and the written consent of holders representing 66 2/3% of the shares of common stock issuable upon exercise of the IPO warrants then outstanding. The foregoing notwithstanding, we may extend the termination date and reduce the exercise price without the consent of the holders.

Enforceability of Rights by Holders of IPO Warrants. Each IPO warrant agent will act solely as our agent under the applicable IPO warrant agreement and will not assume any obligation or relationship of agency or trust with any holder of any IPO warrant. A single bank or trust company may act as IPO warrant agent for more than one issue of IPO warrants. A IPO warrant agent will have no duty or responsibility in case of any default by us under the applicable IPO warrant agreement or IPO warrant, including any duty or responsibility to initiate any proceedings at law or otherwise, or to make any demand upon us. Any holder of a an IPO warrant may, without the consent of the related IPO warrant agent or the holder of any other IPO warrant, enforce by appropriate legal action its right to exercise, and receive the securities purchasable upon exercise of, its IPO warrants.

Legacy Warrants

As of May 31, 2014, legacy warrants to purchase 334,541 shares of our common stock at an exercise price of \$1.07, legacy warrants to purchase 610,890 shares of our common stock at an exercise price of \$1.43 per share, legacy warrants to purchase 264,670 shares of our common stock at an exercise price of \$5.74 per share, and legacy warrants to purchase 96,576 shares of our common stock at an exercise price of \$10.55 per share were outstanding. Some of these legacy warrants have a net exercise provision under which its holder may, in lieu of payment of the exercise price in cash, surrender the legacy warrant and receive a net amount of shares based on a the fair market value of our common stock at the time of exercise of the legacy warrant after deduction of the aggregate exercise price. Each warrant contains provisions for the adjustment of the exercise price and the number of shares issuable upon the exercise of the legacy warrant in the event of certain stock dividends, stock splits, reorganizations, reclassifications and consolidations. Certain holders of the shares issuable upon exercise of our legacy warrants are entitled to registration rights with respect to such shares as described in greater detail under the heading “—Registration Rights” below.

Preferred Stock

Pursuant to our amended and restated certificate of incorporation, our board of directors has the authority, without further action by the stockholders (unless such stockholder action is required by applicable law or NYSE rules), to designate and issue up to 5,000,000 shares of preferred stock in one or more series, to establish from time to time the number of shares to be included in each such series, to fix the rights, preferences and privileges of the shares of each wholly unissued series, and any qualifications, limitations or restrictions thereon, and to increase or decrease the number of shares of any such series, but not below the number of shares of such series then outstanding.

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We will fix the rights, preferences and privileges of the preferred stock of each such series, as well as any qualifications, limitations or restrictions thereon, in the certificate of designation relating to that series. We will file as an exhibit to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of any certificate of designation that describes the terms of the series of preferred stock we are offering before the issuance of that series of preferred stock. This description will include:

- the title and stated value;
- the number of shares we are offering;
- the liquidation preference per share;
- the purchase price;
- the dividend rate, period and payment date and method of calculation for dividends;
- whether dividends will be cumulative or non-cumulative and, if cumulative, the date from which dividends will accumulate;
- the procedures for any auction and remarketing, if any;
- the provisions for a sinking fund, if any;
- the provisions for redemption or repurchase, if applicable, and any restrictions on our ability to exercise those redemption and repurchase rights;
- any listing of the preferred stock on any securities exchange or market;
- whether the preferred stock will be exchangeable into debt securities, and, if applicable, the exchange price, or how it will be calculated, and the exchange period;
- voting rights, if any, of the preferred stock;
- preemptive rights, if any;
- restrictions on transfer, sale or other assignment, if any;
- whether interests in the preferred stock will be represented by depositary shares;
- a discussion of any material United States federal income tax considerations applicable to the preferred stock;
- the relative ranking and preferences of the preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs;
- any limitations on the issuance of any class or series of preferred stock ranking senior to or on a parity with the series of preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs; and
- any other specific terms, preferences, rights or limitations of, or restrictions on, the preferred stock.

The General Corporation Law of the State of Delaware, the state of our incorporation, provides that the holders of preferred stock will have the right to vote separately as a class (or, in some cases, as a series) on an amendment to our amended and restated certificate of incorporation if the amendment would change the par value, the number of authorized shares of the class or the powers, preferences or special rights of the class or series so as to adversely affect the class or series, as the case may be. This right is in addition to any voting rights that may be provided for in the applicable certificate of designation.

Our board of directors may authorize the issuance of preferred stock with voting or conversion rights that could adversely affect the voting power or other rights of the holders of our common stock. The issuance of preferred stock, while providing flexibility in connection with possible acquisitions and other corporate purposes, could, among other things, have the effect of delaying, deferring or preventing a change in our control and may adversely affect the market price of the common stock and the voting and other rights of the holders of common stock. Additionally, the issuance of preferred stock may have the effect of decreasing the market price of our common stock.

[Table of Contents](#)**Stock and Warrant Issuances**

On June 22, 2009, we issued 35 shares of common stock, a secured convertible promissory note and warrants to purchase 208,985 shares of common stock in a private placement to FCPR Sofinnova Capital VI for gross proceeds of \$4,201,000. The note matured October 30, 2009 and was converted into 696,500 shares of common stock in connection with the October 22, 2009 transaction described below. The warrants are exercisable for 208,985 common stock at \$5.74 per share and have a 10 year term.

On October 22, 2009, we issued an aggregate of 2,089,570 shares of common stock in a private placement at a per share price of \$5.74 for aggregate consideration of \$12 million. The transaction included the issuance of 695,500 shares of common stock upon the conversion of a promissory note issued on June 22, 2009 with an aggregate principal amount of \$4 million and a conversion price of \$5.74 per share. The table below sets forth the purchase price and the shares of common stock issued to our directors, executive officers, beneficial owners of more than 5% of our voting capital stock and their affiliates and other holders of registration rights described below under the caption "Registration Rights" in the transaction.

	<u>Shares of Common Stock</u>	<u>Purchase Price</u>
FCPR Sofinnova Capital VI	1,393,035	\$8,000,102 ⁽¹⁾
MCVP Technology Fund I, LLC	348,250	1,999,950
Clifton Equities Inc.	87,080	499,839

(1) Includes amounts converted from promissory note issued June 22, 2009.

On November 23, 2010, we issued unsecured convertible promissory notes in a private placement for aggregate proceeds of \$4 million. The promissory notes were converted into an aggregate of 379,155 shares of common stock and warrants to purchase 94,745 shares of common stock at an exercise price of \$10.55 with a 10 year term in connection with the April 15, 2011 transaction described below. The table below sets forth the principal amount of the promissory notes issued to our directors, executive officers, beneficial owners of more than 5% of our voting capital stock and their affiliates and other holders of registration rights described below under the caption "Registration Rights" as well as the number of shares of common stock and warrants to purchase common stock into which the promissory notes were converted.

	<u>Principal Amount of Promissory Note</u>	<u>Shares of Common Stock</u>	<u>Warrants to Purchase Common Stock</u>
FCPR Sofinnova Capital VI	\$ 2,932,242	278,005	69,475
MCVP Technology Fund I, LLC	\$ 665,128	63,035	15,750
Jean-François Huc	\$ 25,000	2,345	595
Michael Hartmann	\$ 25,000	2,345	595

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On April 15, 2011, we issued an aggregate of 4,266,640 shares of common stock and warrants for 94,745 shares of common stock in a private placement at a per share price of \$10.55 for aggregate consideration of \$45 million. The table below sets forth the purchase price and number of shares issued to our directors, executive officers and beneficial owners of more than 5% of our voting capital stock and their affiliates in and other holders of registration rights described below under the caption “Registration Rights” in the transaction.

	<u>Shares of Common Stock Purchased</u>	<u>Total Purchase Price</u>
Naxamber S.A.	2,370,375	\$25,000,006.50
FCPR Sofinnova Capital VI	932,050	\$ 9,830,198.20
Mitsui & Co., Ltd.	758,520	\$ 8,000,002.08
MCVP Technology Fund I, LLC	151,690	\$ 1,599,852.76
Jean-François Huc	2,345	\$ 24,732.38
Mike Hartmann	2,345	\$ 24,732.38
Clifton Equities Inc.	24,570	\$ 699,999.30

On November 4, 2011, we issued an aggregate of 702,135 shares of common stock in a private placement at a per share price of \$28.49 for aggregate proceeds of approximately \$20 million. The table below sets forth the shares of common stock issued to and the aggregate price paid by our directors, executive officers, beneficial owners of more than 5% of our voting capital stock and their affiliates and other holders of registration rights described below under the caption “Registration Rights”.

	<u>Shares of Common Stock Purchased</u>	<u>Total Purchase Price</u>
Naxamber S.A.	428,295	\$ 12,200,289
FCPR Sofinnova Capital VI	214,165	\$ 6,100,643
Mitsui & Co., Ltd.	35,105	\$ 999,991
Clifton Equities Inc.	47,425	\$ 500,338

On February 6, 2012, we issued in a private placement an aggregate of 351,050 shares of common stock at a per share cost of \$28.49 to LANXESS Corporation for aggregate consideration of \$10 million.

Registration Rights

The holders of an aggregate of 8,488,213 shares of our common stock, including shares of common stock described above under the caption “Stock and Warrant Issuances,” shares of common stock issuable upon exercise of our legacy warrants, and/or their permitted transferees, are entitled to rights with respect to the registration of these shares under the Securities Act for resale to the public. These shares are referred to as registrable securities. All of these rights are provided under the terms of our amended and restated shareholders’ agreement between us and the holders of these shares, and include demand registration rights, piggyback registration rights and Form S-3 registration rights, in each case as described below.

This registration statement may be used by selling stockholders who acquired shares of our common stock or securities exercisable for shares of our common stock in the transactions described above under the caption “Stock and Warrant Issuances” or upon the exercise of certain of our legacy warrants. Such selling stockholders, if any, will be identified in accordance with rules promulgated under the Securities Act of 1933, as amended.

Demand Registration Rights

The holders of a majority of the registrable securities, or initiating holders, subject to certain limitations, have the right to demand that we file a registration statement covering the registration of at least 10% of the registrable securities then outstanding and having an aggregate price to the public of not less than \$15.0 million. We will not be required to effect a registration if (1) we have effected three registrations that have been declared effective and have remained effective until the holders have completed the distribution related thereto, (2) our board of directors, in its reasonable judgment, determines that it would be detrimental to us and our stockholders for such registration statement to be effected at such time, in which case we have the right to defer such filing for up to 90 days following receipt of the demand request from the holders and (3) the initiating holders propose to dispose of registrable securities that are immediately registrable on Form S-3.

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Piggyback Registration Rights

Subject to certain limitations, if at any time we file a registration statement for a public offering of any of our securities, other than a registration statement relating to our employee benefit plan, a corporate reorganization or other transaction under Rule 145 of the Securities Act, the holders of registrable securities will have the right to include all or any part of their registrable securities in the registration statement. The underwriters of any underwritten offering will have the right to limit the number of shares having registration rights to be included in the registration statement to an amount not below 20% of the total number of shares included in the registration statement.

Form S-3 Registration Rights

At any time after we become eligible to file a registration statement on Form S-3, any holder or holders of registrable securities for which a Form S-3 is available may require us to file such a registration statement having an aggregate price to the public of not less than \$1.0 million. We are not obligated to file more than two Form S-3 registration statements in any twelve-month period. In addition, we will not be obligated to effect a registration if (1) a Form S-3, is not available for such offering by the holder or holders, (2) our board of directors, in its reasonable judgment, determines that it would be detrimental to us and our stockholders for such registration statement to be effected at such time, in which case we have the right to defer such filing for up to 90 days following receipt of the Form S-3 demand request from the holder or holders and (3) with respect to a particular jurisdiction, we would be required to qualify to do business or to execute a general consent to service of process in effecting such registration, qualification or compliance.

Registration Expenses

We are generally required to bear the expenses of all registrations, including the expense of a single special counsel to the holders of each registration not to exceed \$75,000 per registration. However, we will not be required to pay for underwriting discounts and commissions or expenses in connection with the exercise of demand and piggyback registration rights if the request is subsequently withdrawn by the holders of a majority of the registrable securities, subject to limited exceptions.

Antitakeover Effects of Delaware Law, Provisions of our Amended and Restated Certificate of Incorporation and Amended and Restated By-laws and French Law Takeover Regulations

Certain provisions of the Delaware General Corporation Law and of our amended and restated certificate of incorporation and amended and restated by-laws could have the effect of delaying, deferring or discouraging another party from acquiring control of us. These provisions, which are summarized below, are expected to discourage certain types of coercive takeover practices and inadequate takeover bids and, as a consequence, they might also inhibit temporary fluctuations in the market price of our common stock that often result from actual or rumored hostile takeover attempts. These provisions are also designed in part to encourage anyone seeking to acquire control of us to first negotiate with our board of directors. These provisions might also have the effect of preventing changes in our management. It is possible that these provisions could make it more difficult to accomplish transactions that stockholders might otherwise deem to be in their best interests. However, we believe that the advantages gained by protecting our ability to negotiate with any unsolicited and potentially unfriendly acquirer outweigh the disadvantages of discouraging such proposals, including those priced above the then-current market value of our common stock, because, among other reasons, the negotiation of such proposals could improve their terms.

Delaware Takeover Statute

We are subject to the provisions of Section 203 of the Delaware General Corporation Law. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a “business combination” with an “interested stockholder” for a three-year period following the time that this stockholder becomes an interested stockholder, unless the business combination is approved in a prescribed manner. A “business combination” includes, among other things, a merger, asset or stock sale or other transaction resulting in a financial benefit to the interested stockholder. An “interested stockholder” is a person who, together with affiliates and associates, owns, or did own within three years prior to the time of determination of interested stockholder status, 15% or more of the corporation’s outstanding voting stock. Under Section 203, a business combination between a corporation and an interested stockholder is prohibited unless it satisfies one of the following conditions:

- before the time the stockholder became interested, the board of directors approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;

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- upon consummation of the transaction which resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding, shares owned by persons who are directors and also officers, and employee stock plans, in some instances; or
- at or after the time the stockholder became interested, the business combination was approved by the board of directors of the corporation and authorized at an annual or special meeting of the stockholders by the affirmative vote of at least two-thirds of the outstanding voting stock which is not owned by the interested stockholder.

Provisions of Our Amended and Restated Certificate of Incorporation and Amended and Restated By-laws

Our amended and restated certificate of incorporation and amended and restated by-laws to be in effect upon completion of this offering will include a number of provisions that may have the effect of delaying, deferring or discouraging another party from acquiring control of us and encouraging persons considering unsolicited tender offers or other unilateral takeover proposals to negotiate with our board of directors rather than pursue non-negotiated takeover attempts. These provisions include the items described below.

Board composition and filling vacancies. In accordance with our amended and restated certificate of incorporation, our board is divided into three classes serving staggered three-year terms, with one class being elected each year. Our amended and restated certificate of incorporation also provides that directors may be removed only for cause and then only by the affirmative vote of the holders of 75% or more of the shares then entitled to vote at an election of directors. Furthermore, any vacancy on our board of directors, however occurring, including a vacancy resulting from an increase in the size of our board, may only be filled by the affirmative vote of a majority of our directors then in office even if less than a quorum.

No written consent of stockholders. Our amended and restated certificate of incorporation provides that all stockholder actions are required to be taken by a vote of the stockholders at an annual or special meeting, and that stockholders may not take any action by written consent in lieu of a meeting. This limit may lengthen the amount of time required to take stockholder actions and would prevent the amendment of our by-laws or removal of directors by our stockholder without holding a meeting of stockholders.

Meetings of stockholders. Our amended and restated by-laws provide that only a majority of the members of our board of directors then in office may call special meetings of stockholders and only those matters set forth in the notice of the special meeting may be considered or acted upon at a special meeting of stockholders. Our amended and restated by-laws limit the business that may be conducted at an annual meeting of stockholders to those matters properly brought before the meeting.

Advance notice requirements. Our amended and restated by-laws establish advance notice procedures with regard to stockholder proposals relating to the nomination of candidates for election as directors or new business to be brought before meetings of our stockholders. These procedures provide that notice of stockholder proposals must be timely given in writing to our corporate secretary prior to the meeting at which the action is to be taken. Generally, to be timely, notice must be received at our principal executive offices not less than 90 days or more than 120 days prior to the first anniversary date of the annual meeting for the preceding year. The notice must contain certain information specified in our amended and restated by-laws.

Adjournment of stockholders meetings. Our amended and restated by-laws give the presiding officer at the stockholders' meeting the authority to reschedule or adjourn such meeting if: no quorum is present for the transaction of business; the board determines that an adjournment is necessary or appropriate to enable the stockholders to consider fully information which the board determines has not been made sufficiently or timely available to stockholders; or the board determines that adjournment is otherwise in the best interests of the company. This limit may lengthen the amount of time required to take stockholder actions.

Amendment to certificate of incorporation and by-laws. As required by the Delaware General Corporation Law, any amendment of our amended and restated certificate of incorporation must first be approved by a majority of our board of directors, and if required by law or our amended and restated certificate of incorporation, must thereafter be approved by a majority of the outstanding shares entitled to vote on the amendment, and a majority of the outstanding shares of each class entitled to vote thereon as a class, except that the amendment of the provisions relating to stockholder action, directors, limitation of liability, the exclusive jurisdiction of Delaware courts and the amendment of our amended and restated certificate of incorporation or our amended and restated by-laws must be approved by not less than 75% of the outstanding shares entitled to vote on the amendment, and not less than 75% of the outstanding shares of each class entitled to vote thereon as a class. Our amended and restated by-laws may be amended by the affirmative vote of a majority vote of the directors then in office, subject to any limitations set forth in the by-laws; and may also be amended by the affirmative vote of at least 75% of the outstanding shares entitled to vote on the amendment, or, if the board of directors recommends that the stockholders approve the amendment, by the affirmative vote of the majority of the outstanding shares entitled to vote on the amendment, in each case voting together as a single class.

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Undesignated preferred stock. Our amended and restated certificate of incorporation provides for authorized shares of preferred stock. The existence of authorized but unissued shares of preferred stock may enable our board of directors to render more difficult or to discourage an attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise. For example, if in the due exercise of its fiduciary obligations, our board of directors were to determine that a takeover proposal is not in the best interests of us or our stockholders, our board of directors could cause shares of preferred stock to be issued without stockholder approval in one or more private offerings or other transactions that might dilute the voting or other rights of the proposed acquirer or insurgent stockholder or stockholder group. In this regard, our amended and restated certificate of incorporation grants our board of directors broad power to establish the rights and preferences of authorized and unissued shares of preferred stock. The issuance of shares of preferred stock could decrease the amount of earnings and assets available for distribution to holders of shares of common stock. The issuance may also adversely affect the rights and powers, including voting rights, of these holders and may have the effect of delaying, deterring or preventing a change in control of us.

Squeeze-Out Provisions

Section 253 of the Delaware General Corporation Law authorizes the board of directors of a Delaware corporation that owns 90% or more of each of the outstanding classes of stock of a subsidiary that are entitled to vote on a merger to merge the subsidiary into itself without any requirement for action to be taken by the board of directors or the stockholders of the subsidiary.

Exclusive Jurisdiction of Delaware Courts

Our amended and restated certificate of incorporation provides that, unless we consent in writing to an alternative forum, the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for (1) any derivative action or proceeding brought on behalf of our company, (2) any action asserting a claim of breach of a fiduciary duty owed by any director, officer or other employee of our company to the company or the company's stockholders, (3) any action asserting a claim arising pursuant to any provision of the Delaware General Corporation Law or our amended and restated certificate of incorporation or our amended and restated by-laws, or (4) any action asserting a claim against our company or any of our directors or officers governed by the internal affairs doctrine. Any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock shall be deemed to have notice of and consented to the forum provisions in our amended and restated certificate of incorporation. However, the enforceability of similar forum provisions in other companies' certificates of incorporation has been challenged in legal proceedings, and it is possible that a court could find these types of provisions to be unenforceable.

French Law Takeover Regulations

Our shares of common stock are also listed on NYSE Euronext Paris, as a result we expect to be subject to certain takeover regulations of the *Autorité des marchés financiers*, or the AMF, which is the securities regulatory authority in France. Pursuant to Article 231-1 of the AMF General Regulation, the AMF may apply its takeover rules, except for those governing standing market offers, buyout offers with squeeze-outs, and squeeze-outs, to takeovers for securities issued by companies such as ours whose registered offices are not in the European Economic Area.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock and IPO warrants is Computershare Trust Company, N.A.

Paying Agent

The paying agent, for purposes of any shares that trade on NYSE Euronext Paris, is BNP Paribas Securities Services.

Listing

Our common stock is listed on the New York Stock Exchange, or NYSE, under the symbol "BIOA." Our common stock is also listed on the Professional Segment of NYSE Euronext Paris, or NYSE Euronext Paris, under the symbol "BIOA." Our common stock trades simultaneously in U.S. dollars on NYSE and in Euros on NYSE Euronext Paris. NYSE and NYSE Euronext Paris are part of the NYSE Euronext group. The dual listing of our common stock reflects our global focus and is intended to promote additional liquidity for our investors and provide greater access to our common stock among fund managers in Europe who may be required to invest in Euro-zone markets or currencies only.

DESCRIPTION OF OUR DEBT SECURITIES

The following description, together with the additional information we include in any applicable prospectus supplements or free writing prospectuses that we may authorize to be distributed to purchasers, summarizes the material terms and provisions of the debt securities that we may offer under this prospectus. We may issue debt securities, in one or more series, as either senior or subordinated debt or as senior or subordinated convertible debt. We refer to the senior and subordinated debt and senior and subordinated convertible debt collectively as debt securities. While the terms we have summarized below will generally apply to any future debt securities we may offer under this prospectus, a prospectus supplement or free writing prospectus will describe the particular terms of any debt securities that we may offer in more detail in the applicable prospectus supplement or free writing prospectus. The terms of any debt securities we offer under a prospectus supplement or free writing prospectus may differ from the general terms we describe below.

We may issue senior debt securities from time to time, in one or more series, under a senior indenture to be entered into between us and a senior trustee to be named in a prospectus supplement, which we refer to as the senior trustee. We may issue subordinated debt securities from time to time, in one or more series, under a subordinated indenture to be entered into between us and a subordinated trustee to be named in a prospectus supplement, which we refer to as the subordinated trustee. The forms of senior indenture and subordinated indenture are filed as exhibits to this registration statement of which this prospectus forms a part. Together, the senior indenture and the subordinated indenture are referred to as the indentures and, together, the senior trustee and the subordinated trustee are referred to as the trustees. This prospectus briefly outlines some of the provisions of the indentures.

None of the indentures will limit the amount of debt securities that we may issue. The applicable indenture will provide that debt securities may be issued up to an aggregate principal amount authorized from time to time by us and may be payable in any currency or currency unit designated by us or in amounts determined by reference to an index.

The following summaries of material provisions of the senior debt securities, the subordinated debt securities and the indentures are subject to, and qualified in their entirety by reference to, all of the provisions of the indenture applicable to a particular series of debt securities. We urge you to read the applicable prospectus supplement or free writing prospectus and any related free writing prospectuses related to the debt securities that we may offer under this prospectus, as well as the complete applicable indenture that contains the terms of the debt securities.

General

We will describe in the applicable prospectus supplement or free writing prospectus the terms of the series of debt securities being offered, including:

- the title;
- the principal amount being offered, and if a series, the total amount authorized and the total amount outstanding;
- any limit on the amount that may be issued;
- whether or not we will issue the series of debt securities in global form, and, if so, the terms and who the depository will be;
- the maturity date;
- whether and under what circumstances, if any, we will pay additional amounts on any debt securities held by a person who is not a United States person for tax purposes, and whether we can redeem the debt securities if we have to pay such additional amounts;
- the annual interest rate, which may be fixed or variable, or the method for determining the rate and the date interest will begin to accrue, the dates interest will be payable and the regular record dates for interest payment dates or the method for determining such dates;
- whether or not the debt securities will be secured or unsecured, and the terms of any secured debt;
- the terms of the subordination of any series of subordinated debt;

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- the place where payments will be payable;
- restrictions on transfer, sale or other assignment, if any;
- our right, if any, to defer payment of interest and the maximum length of any such deferral period;
- the date, if any, after which, the conditions upon which, and the price at which, we may, at our option, redeem the series of debt securities pursuant to any optional or provisional redemption provisions and the terms of those redemption provisions;
- the date, if any, on which, and the price at which we are obligated, pursuant to any mandatory sinking fund or analogous fund provisions or otherwise, to redeem, or at the holder's option, to purchase, the series of debt securities and the currency or currency unit in which the debt securities are payable;
- whether the indenture will restrict our ability or the ability of our subsidiaries to:
 - incur additional indebtedness;
 - issue additional securities;
 - create liens;
 - pay dividends or make distributions in respect of our capital stock or the capital stock of our subsidiaries;
 - redeem capital stock;
 - place restrictions on our subsidiaries' ability to pay dividends, make distributions or transfer assets;
 - make investments or other restricted payments;
 - sell or otherwise dispose of assets;
 - enter into sale-leaseback transactions;
 - engage in transactions with stockholders or affiliates;
 - issue or sell stock of our subsidiaries; or
 - effect a consolidation or merger;
- whether the indenture will require us to maintain any interest coverage, fixed charge, cash flow-based, asset-based or other financial ratios;
- a discussion of certain material or special United States federal income tax considerations applicable to the debt securities;
- information describing any book-entry features;
- provisions for a sinking fund purchase or other analogous fund, if any;
- the applicability of the provisions in the indenture on discharge;
- whether the debt securities are to be offered at a price such that they will be deemed to be offered at an "original issue discount" as defined in paragraph (a) of Section 1273 of the Internal Revenue Code of 1986, as amended;
- the denominations in which we will issue the series of debt securities, if other than denominations of \$1,000 and any integral multiple thereof;
- the currency of payment of debt securities if other than U.S. dollars and the manner of determining the equivalent amount in U.S. dollars; and
- any other specific terms, preferences, rights or limitations of, or restrictions on, the debt securities, including any additional events of default or covenants provided with respect to the debt securities, and any terms that may be required by us or advisable under applicable laws or regulations or advisable in connection with the marketing of the debt securities.

We may, from time to time, without notice to or the consent of the holders of any series of debt securities, create and issue further debt securities of any such series ranking equally with the debt securities of such series in all respects (or in all respects other than (a) the payment of interest accruing prior to the issue date of such further debt securities or (b) the first payment of interest following the issue date of such further debt securities). Such further debt securities may be consolidated and form a single series with the debt securities of such series and have the same terms as to status, redemption or otherwise as the debt securities of such series.

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Certain Terms of the Senior Debt Securities

Conversion or Exchange Rights. We will set forth in the applicable prospectus supplement or free writing prospectus the terms on which a series of senior debt securities may be convertible into or exchangeable for our common stock, our preferred stock or other securities (including securities of a third-party). We will include provisions as to whether conversion or exchange is mandatory, at the option of the holder or at our option. We may include provisions pursuant to which the number of shares of our common stock, our preferred stock or other securities (including securities of a third-party) that the holders of the series of senior debt securities receive would be subject to adjustment.

Consolidation, Merger or Sale. Unless we provide otherwise in the prospectus supplement or free writing prospectus applicable to a particular series of senior debt securities, the senior debt securities will not contain any covenant that restricts our ability to merge or consolidate, or sell, convey, transfer or otherwise dispose of all or substantially all of our assets. However, any successor to or acquirer of such assets must assume all of our obligations under the senior indentures or the senior debt securities, as appropriate. If the senior debt securities are convertible into or exchangeable for other securities of ours or securities of other entities, the person with whom we consolidate or merge or to whom we sell all of our property must make provisions for the conversion of the senior debt securities into securities that the holders of the senior debt securities would have received if they had converted the senior debt securities before the consolidation, merger or sale.

No Protection in the Event of a Change in Control. Unless we indicate otherwise in a prospectus supplement or free writing prospectus applicable to a particular series of senior debt securities, the senior debt securities will not contain any provisions that may afford holders of the senior debt securities protection in the event we have a change in control or in the event of a highly leveraged transaction (whether or not such transaction results in a change in control).

Events of Default. Unless we provide otherwise in the prospectus supplement or free writing prospectus applicable to a particular series of senior debt securities, the following are events of default under the senior indentures with respect to any series of senior debt securities that we may issue:

- if we fail to pay interest when due and payable and our failure continues for 90 days (or such other period as may be specified for such series) and the time for payment has not been extended;
- if we fail to pay the principal, premium or sinking fund payment, if any, when due and payable at maturity, upon redemption or repurchase or otherwise (and, if specified for such series, the continuance of such failure for a specified period), and the time for payment has not been extended;
- if we fail to observe or perform any other covenant contained in the senior debt securities or the senior indentures, other than a covenant that is specifically dealt with elsewhere in the senior indenture, and our failure continues for 90 days after we receive notice from the trustee or holders of at least 25% in aggregate principal amount of the outstanding senior debt securities of the applicable series; and
- if specified events of bankruptcy, insolvency or reorganization occur.

We will describe in each applicable prospectus supplement or free writing prospectus any additional events of default relating to the relevant series of senior debt securities.

If an event of default with respect to senior debt securities of any series occurs and is continuing, other than an event of default specified in the last bullet point above, the trustee or the holders of at least 25% in aggregate principal amount of the outstanding senior debt securities of that series, by notice to us in writing, and to the trustee if notice is given by such holders, may declare the unpaid principal, premium, if any, and accrued interest, if any, due and payable immediately. If an event of default specified in the last bullet point above occurs with respect to us, the unpaid principal, premium, if any, and accrued interest, if any, of each issue of senior debt securities then outstanding shall be due and payable without any notice or other action on the part of the trustee or any holder.

Unless otherwise specified in the prospectus supplement or free writing prospectus applicable to a particular series of senior debt securities originally issued at a discount, the amount due upon acceleration shall include only the original issue price of the senior debt securities, the amount of original issue discount accrued to the date of acceleration and accrued interest, if any.

The holders of a majority in principal amount of the outstanding senior debt securities of an affected series may waive any default or event of default with respect to the series and its consequences, except defaults or events of default regarding payment of principal, premium, if any, or interest, unless we have cured the default or event of default in accordance with the senior indenture. Any waiver shall cure the default or event of default.

Upon certain conditions, declarations of acceleration may be rescinded and annulled and past defaults may be waived by the holders of a majority in aggregate principal amount of all the senior debt securities of such series affected by the default. Furthermore, prior to a declaration of acceleration and subject to various provisions in the senior indenture, the holders of a majority in aggregate

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principal amount of a series of senior debt securities, by notice to the trustee, may waive an existing default or event of default with respect to such senior debt securities and its consequences, except a default in the payment of principal of, premium, if any, on or interest on such senior debt securities. Upon any such waiver, such default shall cease to exist, and any event of default with respect to such senior debt securities shall be deemed to have been cured, for every purpose of the senior indenture, but no such waiver shall extend to any subsequent or other default or event of default or impair any right consequent thereto.

The holders of a majority in aggregate principal amount of a series of senior debt securities will have the right to direct the time, method and place of conducting any proceeding for any remedy available to the trustee or exercising any trust or power conferred on the trustee with respect to such senior debt securities. However, the trustee may refuse to follow any direction that conflicts with law or the senior indenture that may involve the trustee in personal liability or that the trustee determines in good faith may be unduly prejudicial to the rights of holders of such series of senior debt securities not joining in the giving of such direction and may take any other action it deems proper that is not inconsistent with any such direction received from holders of such series of senior debt securities. A holder of the senior debt securities of any series will have the right to institute a proceeding under the senior indentures or to appoint a receiver or trustee, or to seek other remedies if:

- the holder has given written notice to the trustee of a continuing event of default with respect to that series;
- the holders of at least 25% in aggregate principal amount of the outstanding senior debt securities of that series have made written request, and such holders have offered reasonable indemnity to the trustee or security satisfactory to it against any loss, liability or expense or to be incurred in compliance with instituting the proceeding as trustee; and
- the trustee does not institute the proceeding, and does not receive from the holders of a majority in aggregate principal amount of the outstanding senior debt securities of that series other conflicting directions within 90 days after the notice, request and offer.

These limitations do not apply to a suit instituted by a holder of senior debt securities if we default in the payment of the principal, premium, if any, or interest on, the senior debt securities, or other defaults that may be specified in the applicable prospectus supplement or free writing prospectus.

Modification and Waiver. We and the trustee may amend, supplement or modify a senior indenture or the senior debt securities without the consent of any holders with respect to the following specific matters:

- to fix any ambiguity, defect or inconsistency in the senior indenture or to conform the senior indenture or the senior debt securities to the description of senior debt securities of such series set forth in this prospectus or any applicable prospectus supplement or any free writing supplement;
- to convey, transfer, assign, mortgage or pledge any assets as security for the senior debt securities of one or more series;
- to add to, delete from or revise the conditions, limitations, and restrictions on the authorized amount, terms, or purposes of issue, authentication and delivery of senior debt securities;
- to evidence the succession of another corporation, and the assumption by such successor corporation of our covenants, agreements and obligations under the senior indenture;
- to provide for or add guarantors with respect to the senior debt securities of any series;
- to establish the form of any certifications required to be furnished pursuant to the terms of the senior indenture or any series of senior debt securities, or to add to the rights of the holders of any series of senior debt securities;
- to evidence and provide for the acceptance of appointment hereunder by a successor trustee or to make such changes as shall be necessary to provide for or facilitate the administration of the trusts in the senior indenture by more than one trustee;
- to make any change to the senior debt securities of any series, so long as no senior debt securities of such series are outstanding
- to provide for uncertificated senior debt securities and to make all appropriate changes for such purpose;
- to add to our covenants such new covenants, restrictions, conditions or provisions for the benefit of the holders, to make the occurrence, or the occurrence and the continuance, of a default in any such additional covenants, restrictions, conditions or provisions an event of default or to surrender any right or power conferred to us in the senior indenture; or
- to change anything that does not materially adversely affect the interests of any holder of senior debt securities of any series.

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Other amendments and modifications of the senior indenture or the senior debt securities issued may be made, and our compliance with any provision of the senior indenture with respect to any series of senior debt securities may be waived, with the consent of the holders of a majority of the aggregate principal amount of the outstanding senior debt securities of all series affected by the amendment or modification (voting together as a single class); provided, however, that each affected holder must consent to any modification, amendment or waiver that:

- extends the stated maturity of any senior debt securities;
- reduces the principal amount, reducing the rate of or extending the time of payment of interest, or reducing any premium payable upon the redemption or repurchase of any senior debt securities;
- reduces the rate or extends the time of payment of interest on any senior debt securities; or
- reduces the percentage of senior debt securities, the holders of which are required to consent to any amendment, supplement, modification or waiver.

Satisfaction and Discharge. We can elect satisfy and discharge our obligations with respect to one or more series of senior debt securities, except for specified obligations, including obligations to:

- register the transfer or exchange of debt securities of the series;
- replace stolen, lost or mutilated debt securities of the series;
- maintain paying agencies;
- hold monies for payment in trust;
- recover excess money held by the trustee;
- compensate and indemnify the trustee; and
- appoint any successor trustee.

In order to exercise our rights to be discharged, we must deposit with the trustee money or government obligations sufficient to pay all the principal of, any premium and interest on, the senior debt securities of the series on the dates payments are due.

Under current U.S. federal income tax law, the deposit and our legal release from the senior debt securities would be treated as though we took back a holder's senior debt securities and gave such holder his or her share of the cash and debt securities or bonds deposited in trust. In that event, such holder could recognize gain or loss on the senior debt securities such holder gives back to us. Holders of the senior debt securities should consult their own advisers with respect to the tax consequences to them of such deposit and discharge, including the applicability and effect of tax laws other than the U.S. federal income tax law.

Information Concerning the Trustee. The trustee, other than during the occurrence and continuance of an event of default under a senior indenture, undertakes to perform only those duties as are specifically set forth in the applicable senior indenture. Upon an event of default under a senior indenture, the trustee must use the same degree of care as a prudent person would exercise or use in the conduct of his or her own affairs.

Subject to this provision, the trustee is under no obligation to exercise any of the powers given it by the senior indentures at the request of any holder of senior debt securities unless it is offered reasonable security and indemnity against the costs, expenses and liabilities that it might incur.

We may have normal banking relationships with the trustee in the ordinary course of business.

Certain Terms of the Subordinated Debt Securities

Other than the terms of the subordinated indenture and subordinated debt securities relating to subordination or otherwise as described in the prospectus supplement or free writing prospectus relating to a particular series of subordinated debt securities, the terms of the subordinated indenture and subordinated debt securities are identical in all material respects to the terms of the senior indenture and senior debt securities.

Additional or different subordination terms may be specified in the prospectus supplement applicable to a particular series.

Subordination. The indebtedness evidenced by the subordinated debt securities is subordinate to the prior payment in full of all of our senior indebtedness, as defined in the subordinated indenture. During the continuance beyond any applicable grace period of any default in the payment of principal, premium, interest or any other payment due on any of our senior indebtedness, we may not make any payment of principal of, or premium, if any, on or interest on the subordinated debt securities (except for certain sinking fund payments). In addition, upon any payment or distribution of our assets upon any dissolution, winding-up, liquidation or reorganization,

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the payment of the principal of, or premium, if any, on and interest on the subordinated debt securities will be subordinated to the extent provided in the subordinated indenture in right of payment to the prior payment in full of all our senior indebtedness. Because of this subordination, if we dissolve or otherwise liquidate, holders of our subordinated debt securities may receive less, ratably, than holders of our senior indebtedness. The subordination provisions do not prevent the occurrence of an event of default under the subordinated indenture.

Governing Law

The indentures and the debt securities will be governed by and construed in accordance with the internal laws of the State of New York.

Ranking of Debt Securities

The senior debt securities will rank equally in right of payment to all our other senior unsecured debt. The subordinated debt securities will be subordinate and junior in priority of payment to certain of our other indebtedness (including senior debt securities) to the extent described in a prospectus supplement or free writing prospectus.

DESCRIPTION OF WARRANTS

The following description, together with the additional information we include in any applicable prospectus supplements or free writing prospectuses that we may authorize to be distributed to purchasers, summarizes the material terms and provisions of the warrants that we may offer under this prospectus. Warrants may be offered independently or together with common stock, preferred stock and/or debt securities offered by any prospectus supplement or free writing prospectus, and may be attached to or separate from those securities. While the terms we have summarized below will generally apply to any future warrants we may offer under this prospectus, we will describe the particular terms of any warrants that we may offer in more detail in the applicable prospectus supplement or free writing prospectus. The terms of any warrants we offer under a prospectus supplement or free writing prospectus may differ from the general terms we describe below.

We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of warrant agreement, including a form of warrant certificate, that describes the terms of the particular series of warrants we are offering before the issuance of the related series of warrants. The following summaries of material provisions of the warrants and the warrant agreements are subject to, and qualified in their entirety by reference to, all the provisions of the warrant agreement and warrant certificate applicable to the particular series of warrants that we may offer under this prospectus. We urge you to read the applicable prospectus supplements related to the particular series of warrants that we may offer under this prospectus, as well as any related free writing prospectuses, and the complete warrant agreements and warrant certificates that contain the terms of the warrants.

General

We will describe in the applicable prospectus supplement the terms of the series of warrants being offered. If warrants for the purchase of debt securities are offered, the prospectus supplement or free writing prospectus will describe the following terms, to the extent applicable:

- the offering price and the aggregate number of warrants offered;
- the currencies in which the warrants are being offered;
- the designation, aggregate principal amount, currencies, denominations and terms of the series of debt securities that can be purchased if a holder exercises a warrant;
- the designation and terms of any series of debt securities with which the warrants are being offered and the number of warrants offered with each such debt security;
- the date on and after which the holder of the warrants can transfer them separately from the related series of debt securities;
- the principal amount of the series of debt securities that can be purchased if a holder exercises a warrant and the price at which and currencies in which such principal amount may be purchased upon exercise;
- the terms of any rights to redeem or call the warrants;
- the date on which the right to exercise the warrants begins and the date on which such right expires;
- federal income tax consequences of holding or exercising the warrants; and
- any other specific terms, preferences, rights or limitations of, or restrictions on, the warrants.

Warrants for the purchase of debt securities will be in registered form only.

If warrants for the purchase of common stock or preferred stock are offered, the prospectus supplement or free writing prospectus will describe the following terms, to the extent applicable:

- the offering price and aggregate number of warrants offered;
- the currency for which the warrants may be purchased;
- if applicable, the designation and terms of the securities with which the warrants are issued and the number of warrants issued with each such security or each principal amount of such security;
- if applicable, the date on and after which the warrants and the related securities will be separately transferable;

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- the number of shares of common stock or preferred stock, as the case may be, purchasable upon the exercise of one warrant and the price at which these shares may be purchased upon such exercise;
- the effect of any merger, consolidation, sale or other disposition of our business on the warrant agreements and the warrants;
- the terms of any rights to redeem or call the warrants;
- any provisions for changes to or adjustments in the exercise price or number of securities issuable upon exercise of the warrants;
- the dates on which the right to exercise the warrants will commence and expire;
- the manner in which the warrant agreements and warrants may be modified;
- the terms of the securities issuable upon exercise of the warrants; and
- any other specific terms, preferences, rights or limitations of or restrictions on the warrants.

Before exercising their warrants, holders of warrants will not have any of the rights of holders of the securities purchasable upon such exercise, including the right to receive dividends, if any, or, payments upon our liquidation, dissolution or winding up or to exercise voting rights, if any

Exercise of Warrants

Each warrant will entitle the holder to purchase the securities that we specify in the applicable prospectus supplement at the exercise price that we describe in the applicable prospectus supplement. Unless we otherwise specify in the applicable prospectus supplement, holders of the warrants may exercise the warrants at any time up to the specified time on the expiration date that we set forth in the applicable prospectus supplement. After the close of business on the expiration date, unexercised warrants will become void.

Holders of the warrants may exercise the warrants by delivering the warrant certificate representing the warrants to be exercised together with specified information, and paying the required amount to the warrant agent in immediately available funds, as provided in the applicable prospectus supplement. We will set forth on the reverse side of the warrant certificate and in the applicable prospectus supplement the information that the holder of the warrant will be required to deliver to the warrant agent.

Upon receipt of the required payment and the warrant certificate properly completed and duly executed at the corporate trust office of the warrant agent or any other office indicated in the applicable prospectus supplement, we will issue and deliver the securities purchasable upon such exercise. If fewer than all of the warrants represented by the warrant certificate are exercised, then we will issue a new warrant certificate for the remaining amount of warrants. If we so indicate in the applicable prospectus supplement, holders of the warrants may surrender securities as all or part of the exercise price for warrants.

Governing Law

Unless we provide otherwise in the applicable prospectus supplement, the warrants and warrant agreements will be governed by and construed in accordance with the laws of the State of New York.

Enforceability of Rights by Holders of Warrants

Each warrant agent will act solely as our agent under the applicable warrant agreement and will not assume any obligation or relationship of agency or trust with any holder of any warrant. A single bank or trust company may act as warrant agent for more than one issue of warrants. A warrant agent will have no duty or responsibility in case of any default by us under the applicable warrant agreement or warrant, including any duty or responsibility to initiate any proceedings at law or otherwise, or to make any demand upon us. Any holder of a warrant may, without the consent of the related warrant agent or the holder of any other warrant, enforce by appropriate legal action its right to exercise, and receive the securities purchasable upon exercise of, its warrants.

DESCRIPTION OF UNITS

The following description, together with the additional information that we include in any applicable prospectus supplements or free writing prospectuses that we may authorize to be distributed to purchasers, summarizes the material terms and provisions of the units that we may offer under this prospectus. We may issue, in one more series, units consisting of common stock, preferred stock, debt securities and/or warrants for the purchase of common stock and/or preferred stock in any combination. While the terms we have summarized below will generally apply to any future series of units we may offer under this prospectus, we will describe the particular terms of any series of units that we may offer in more detail in the applicable prospectus supplement or free writing prospectus. The terms of any series of units we offer under a prospectus supplement or free writing prospectus may differ from the general of terms we described below.

We will file as exhibits to the registration statement of which this prospectus is a part, or will incorporate by reference from reports that we file with the SEC, the form of unit agreement that describes the terms of the series of units we are offering, and any supplemental agreements, before the issuance of the related series of units. The following summaries of material terms and provisions of the units are subject to, and qualified in their entirety by reference to, all the provisions of the unit agreement and any supplemental agreements applicable to a particular series of units. We urge you to read the applicable prospectus supplements related to the particular series of units that we may offer under this prospectus, as well as any related free writing prospectuses and the complete unit agreement and any supplemental agreements that contain the terms of the units.

General

Each unit will be issued so that the holder of the unit is also the holder of each security included in the unit. Thus, the holder of a unit will have the rights and obligations of a holder of each included security. The unit agreement under which a unit is issued may provide that the securities included in the unit may not be held or transferred separately, at any time or at any time before a specified date.

We will describe in the applicable prospectus supplement the terms of the series of units being offered, including:

- the designation and terms of the units and of the securities comprising the units, including whether and under what circumstances those securities may be held or transferred separately;
- any provisions of the governing unit agreement that differ from those described below in this section; and
- any provisions for the issuance, payment, settlement, transfer or exchange of the units or of the securities comprising the units.

The provisions described in this section, as well as those described under “Description of Capital Stock” and “Description of Warrants” will apply to each unit and to any common stock, preferred stock or warrant included in each unit, respectively.

Issuance in Series

We may issue units in such amounts and in such numerous distinct series as we determine.

Enforceability of Rights by Holders of Units

Each unit agent will act solely as our agent under the applicable unit agreement and will not assume any obligation or relationship of agency or trust with any holder of any unit. A single bank or trust company may act as unit agent for more than one series of units. A unit agent will have no duty or responsibility in case of any default by us under the applicable unit agreement or unit, including any duty or responsibility to initiate any proceedings at law or otherwise, or to make any demand upon us. Any holder of a unit may, without the consent of the related unit agent or the holder of any other unit, enforce by appropriate legal action its rights as holder under any security included in the unit.

Title

We, and any unit agent and any of their agents, may treat the registered holder of any unit certificate as an absolute owner of the units evidenced by that certificate for any purpose and as the person entitled to exercise the rights attaching to the units so requested, despite any notice to the contrary.

FORMS OF SECURITIES

General

Each debt security, unit and warrant will be represented either by a certificate issued in definitive form to a particular purchaser or by one or more global securities representing the entire issuance of securities. Unless the applicable prospectus supplement provides otherwise, certificated securities in definitive form and global securities will be issued in registered form. Definitive securities name you or your nominee as the owner of the security, and in order to transfer or exchange these securities or to receive payments other than interest or other interim payments, you or your nominee must physically deliver the securities to the trustee, registrar, paying agent or other agent, as applicable. Global securities name a depositary or its nominee as the owner of the debt securities, units or warrants represented by these global securities. The depositary maintains a computerized system that will reflect each purchaser's beneficial ownership of the securities through an account maintained by the purchaser with its broker/dealer, bank, trust company or other representative, as we explain more fully below.

Registered Global Securities

We may issue the registered debt securities, units and warrants in the form of one or more fully registered global securities that will be deposited with a depositary or its nominee identified in the applicable prospectus supplement and registered in the name of that depositary or nominee. In those cases, one or more registered global securities will be issued in a denomination or aggregate denominations equal to the portion of the aggregate principal or face amount of the securities to be represented by registered global securities. Unless and until it is exchanged in whole for securities in definitive registered form, a registered global security may not be transferred except as a whole by and among the depositary for the registered global security, the nominees of the depositary or any successors of the depositary or those nominees.

If not described below, any specific terms of the depositary arrangement with respect to any securities to be represented by a registered global security will be described in the prospectus supplement relating to those securities. We anticipate that the following provisions will apply to all depositary arrangements.

Ownership of beneficial interests in a registered global security will be limited to persons, called participants, that have accounts with the depositary or persons that may hold interests through participants. Upon the issuance of a registered global security, the depositary will credit, on its book-entry registration and transfer system, the participants' accounts with the respective principal or face amounts of the securities beneficially owned by the participants. Any dealers, underwriters or agents participating in the distribution of the securities will designate the accounts to be credited. Ownership of beneficial interests in a registered global security will be shown on, and the transfer of ownership interests will be effected only through, records maintained by the depositary, with respect to interests of participants, and on the records of participants, with respect to interests of persons holding through participants. The laws of some states may require that some purchasers of securities take physical delivery of these securities in definitive form. These laws may impair such purchasers' abilities to own, transfer or pledge beneficial interests in registered global securities.

So long as the depositary, or its nominee, is the registered owner of a registered global security, that depositary or its nominee, as the case may be, will be considered the sole owner or holder of the securities represented by the registered global security for all purposes under the applicable indenture, unit agreement or warrant agreement. Except as described below, owners of beneficial interests in a registered global security will not be entitled to have the securities represented by the registered global security registered in their names, will not receive or be entitled to receive physical delivery of the securities in definitive form and will not be considered the owners or holders of the securities under the applicable indenture, unit agreement or warrant agreement. Accordingly, each person owning a beneficial interest in a registered global security must rely on the procedures of the depositary for that registered global security and, if that person is not a participant, on the procedures of the participant through which the person owns its interest, to exercise any rights of a holder under the applicable indenture, unit agreement or warrant agreement. We understand that under existing industry practices, if we request any action of holders or if an owner of a beneficial interest in a registered global security desires to give or take any action that a holder is entitled to give or take under the applicable indenture, unit agreement or warrant agreement, the depositary for the registered global security would authorize the participants holding the relevant beneficial interests to give or take that action, and the participants would authorize beneficial owners owning through them to give or take that action or would otherwise act upon the instructions of beneficial owners holding through them.

Principal, premium, if any, on and interest payments on debt securities, and any payments to holders with respect to warrants, or units, represented by a registered global security registered in the name of a depositary or its nominee will be made to the depositary

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or its nominee, as the case may be, as the registered owner of the registered global security. None of us, the trustees, the warrant agents, the unit agents or any other agent of ours, agent of the trustees or agent of the warrant agents or unit agents will have any responsibility or liability for any aspect of the records relating to payments made on account of beneficial ownership interests in the registered global security or for maintaining, supervising or reviewing any records relating to those beneficial ownership interests.

We expect that the depositary for any of the securities represented by a registered global security, upon receipt of any payment of principal, premium, interest or other distribution of underlying securities or other property to holders on that registered global security, will immediately credit participants' accounts in amounts proportionate to their respective beneficial interests in that registered global security as shown on the records of the depositary. We also expect that payments by participants to owners of beneficial interests in a registered global security held through participants will be governed by standing customer instructions and customary practices, as is now the case with the securities held for the accounts of customers or registered in "street name," and will be the responsibility of those participants.

If the depositary for any of the securities represented by a registered global security is at any time unwilling or unable to continue as depositary or ceases to be a clearing agency registered under the Securities Exchange Act of 1934, as amended, or Exchange Act, and a successor depositary registered as a clearing agency under the Exchange Act is not appointed by us within 90 days, we will issue securities in definitive form in exchange for the registered global security that had been held by the depositary. Any securities issued in definitive form in exchange for a registered global security will be registered in the name or names that the depositary gives to the relevant trustee, warrant agent, unit agent or other relevant agent of ours or theirs. It is expected that the depositary's instructions will be based upon directions received by the depositary from participants with respect to ownership of beneficial interests in the registered global security that had been held by the depositary.

LEGAL MATTERS

The validity of the securities being offered by this prospectus will be passed upon by Goodwin Procter LLP, Boston, Massachusetts.

EXPERTS

The consolidated financial statements of BioAmber Inc. and subsidiaries (a development stage company) as at December 31, 2013 and 2012, and for each of the three years in the period ended December 31, 2013, and the period from October 15, 2008 (date of inception) to December 31, 2013, incorporated by reference in this Prospectus have been audited by Deloitte LLP, an independent registered public accounting firm, as stated in their report which is incorporated herein by reference from the Annual Report on Form 10-K (which report expresses an unqualified opinion and includes an explanatory paragraph relating to the company's development stage status). Such financial statements have been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.



\$100,000,000

Common Stock

Preferred Stock

Debt Securities

Warrants

Units

PROSPECTUS

, 2014

We have not authorized any dealer, salesperson or other person to give any information or represent anything not contained in this prospectus. You must not rely on any unauthorized information. If anyone provides you with different or inconsistent information, you should not rely on it. This prospectus does not offer to sell any shares in any jurisdiction where it is unlawful. Neither the delivery of this prospectus, nor any sale made hereunder, shall create any implication that the information in this prospectus is correct after the date hereof.

PART II

INFORMATION NOT REQUIRED IN THE PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

The following table sets forth the estimated costs and expenses, other than underwriting discounts and commissions, payable by the registrant in connection with the offering of the securities being registered. All the amounts shown are estimates, except for the SEC registration fee.

SEC registration fee	\$12,880
NYSE listing fee	*
Accounting fees and expenses	*
Legal fees and expenses	*
Transfer Agent fees and expenses	*
Printing and miscellaneous expenses	*
Total	<u>\$</u> *

* The amount of securities and number of offerings are indeterminable and the expenses cannot be estimated at this time.

Item 15. Indemnification of Directors and Officers.

In accordance with Section 145 of the Delaware General Corporation Law, Article VII of our amended and restated certificate of incorporation provides that no director of BioAmber shall be personally liable to BioAmber or its stockholders for monetary damages for breach of fiduciary duty as a director, except for liability (1) for any breach of the director's duty of loyalty to BioAmber or its stockholders, (2) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (3) in respect of unlawful dividend payments or stock redemptions or repurchases, or (4) for any transaction from which the director derived an improper personal benefit. In addition, our amended and restated certificate of incorporation provides that if the Delaware General Corporation Law is amended to authorize the further elimination or limitation of the liability of directors, then the liability of a director of the corporation shall be eliminated or limited to the fullest extent permitted by the Delaware General Corporation Law, as so amended.

Article V of our amended and restated by-laws provides for indemnification by BioAmber of its officers and certain non-officer employees under certain circumstances against expenses, including attorneys fees, judgments, fines and amounts paid in settlement, reasonably incurred in connection with the defense or settlement of any threatened, pending or completed legal proceeding in which any such person is involved by reason of the fact that such person is or was an officer or employee of the registrant if such person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of BioAmber, and, with respect to criminal actions or proceedings, if such person had no reasonable cause to believe his or her conduct was unlawful.

In addition, we have entered into indemnification agreements with each of our directors. The indemnification agreements require, among other matters, that we indemnify our directors to the fullest extent permitted by law and advance to the director's all related expenses, subject to reimbursement if it is subsequently determined that indemnification is not permitted. Under these agreements, we must also indemnify and advance all expenses incurred by directors seeking to enforce their rights under the indemnification agreements and may cover directors under directors' and officers' liability insurance.

[Table of Contents](#)**Item 16. Exhibits.**

<u>Exhibit Number</u>	<u>Description of the Document</u>	<u>Form or Schedule</u>	<u>SEC File No.</u>	<u>Filing Date</u>	<u>Exhibit Number in Original Filing</u>
1.1(1)	Form of Underwriting Agreement				
3.1	Amended and Restated Certificate of Incorporation	S-1	333-177917	4/11/2013	3.1
3.2	Amended and Restated By-Laws	S-1	333-177917	4/11/2013	3.2
4.1	Form of Common Stock certificate of the Registrant	S-1	333-177917	4/11/2013	4.1
4.2	Form of IPO Common Stock Purchase Warrant	S-1	333-177917	5/9/2013	4.6
4.3(1)	Form of Common Stock Warrant Agreement and Warrant Certificate				
4.4(1)	Form of Preferred Stock Warrant Agreement and Warrant Certificate				
4.5(1)	Form of Unit Agreement				
4.5	Form of Indenture for Senior Debt Securities				
4.6	Form of Indentures for Subordinated Debt Securities				
5.1	Opinion of Goodwin Procter LLP				
10.1	Legacy Warrant to purchase shares of common stock dated April 17, 2009 issued by the Registrant to Dilum Dunuwila (Certificate No. LW-41)	S-1	1333-177917	12/22/2011	10.4
10.2	Legacy Warrant to purchase shares of common stock dated April 17, 2009 issued by the Registrant to Dilum Dunuwila (Certificate No. LW-42)	S-1	1333-177917	12/22/2011	10.5
10.3	Legacy Warrant to purchase shares of common stock dated April 17, 2009 issued by the Registrant to Jean-François Huc (Certificate No. LW-16)	S-1	1333-177917	12/22/2011	10.6
10.4	Legacy Warrant to purchase shares of common stock dated April 17, 2009 issued by the Registrant to Jean-François Huc (Certificate No. LW-17)	S-1	1333-177917	12/22/2011	10.7
10.5	Legacy Warrant to purchase shares of common stock dated April 17, 2009 issued by the Registrant to Roger Laurent Bernier (Certificate No. LW-38)	S-1	1333-177917	12/22/2011	10.8
10.6	Warrant to purchase shares of common stock dated February 6, 2009 issued by the Registrant to Jean- François Huc	S-1	333-177917	12/22/2011	10.10
10.7	Warrant to purchase shares of common stock dated February 6, 2009 issued by the Registrant to Dilum Dunuwila	S-1	333-177917	12/22/2011	10.12
10.8	Warrant to purchase shares of common stock dated February 6, 2009 issued by the Registrant to Kurt Briner	S-1	333-177917	12/22/2011	10.14
10.9	Warrant to purchase shares of common stock dated February 6, 2009 issued by the Registrant to Michael Hartmann	S-1	333-177917	12/22/2011	10.16
10.10	Warrant to purchase shares of common stock dated February 6, 2009 issued by the Registrant to Roger Laurent Bernier	S-1	333-177917	12/22/2011	10.18
10.11	Common Stock Purchase Warrant to purchase shares of common stock dated June 22, 2009 issued by the Registrant to FCPR Sofinnova Capital VI	S-1	333-177917	12/22/2011	10.20
10.12	Shares of Common Stock Purchase Warrant to purchase shares of common stock dated April 15, 2011 issued by the Registrant to FCPR Sofinnova Capital VI.	S-1	333-177917	12/22/2011	10.25

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<u>Exhibit Number</u>	<u>Description of the Document</u>	<u>Form or Schedule</u>	<u>SEC File No.</u>	<u>Filing Date</u>	<u>Exhibit Number in Original Filing</u>
10.13	Shares of Common Stock Purchase Warrant to purchase shares of common stock dated April 15, 2011 issued by the Registrant to MCVF Technology Fund I, LLC	S-1	333-177917	12/22/2011	10.26
10.14	Shares of Common Stock Purchase Warrant to purchase shares of common stock dated April 15, 2011 issued by the Registrant to Jean-François Huc	S-1	333-177917	12/22/2011	10.27
10.15	Shares of Common Stock Purchase Warrant to purchase shares of common stock dated April 15, 2011 issued by the Registrant to Michael Hartmann	S-1	333-177917	12/22/2011	10.28
10.16	Shares of Common Stock Purchase Warrant to purchase shares of common stock dated April 15, 2011 issued by the Registrant to Roger Laurent Bemier	S-1	333-177917	12/22/2011	10.29
12.1(1)	Statement of Computation of Earnings to Fixed Charges				
23.1	Consent of Deloitte LLP, Independent Registered Public Accounting Firm				
23.2	Consent of Goodwin Procter LLP (included in Exhibit 5.1)				
24.1	Power of Attorney (included on signature page)				
25.1(2)	Form T-1 Statement of Eligibility of Trustee for Senior Indenture under the Trust Indenture Act of 1939				
25.2(2)	Form T-1 Statement of Eligibility of Trustee for Subordinated Indenture under the Trust Indenture Act of 1939				
(1)	To be filed, if necessary, subsequent to the effectiveness of this registration by an amendment to this registration statement or incorporation by reference pursuant to a Current Report on Form 8-K in connection with an offering of securities.				
(2)	To be filed pursuant to Section 305(b)(2) of the Trust Indenture Act of 1939.				

Item 17. Undertakings.

The undersigned registrant hereby undertakes:

- (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
 - (i) To include any prospectus required by Section 10(a)(3) of the Securities Act;
 - (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in the volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be

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reflected in the form of prospectus filed with the Securities and Exchange Commission, or the Commission, pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

- (iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided, however, that paragraphs (1)(i), (1)(ii) and (1)(iii) above do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the Commission by the registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

- (2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.
- (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
- (4) That, for the purpose of determining liability under the Securities Act to any purchaser:
 - (A) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
 - (B) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof. *Provided, however*, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.
- (5) That, for the purpose of determining liability of the registrant under the Securities Act to any purchaser in the initial distribution of the securities, the undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:
 - (i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;

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- (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
 - (iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
 - (iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.
- (6) That, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of the securities at that time shall be deemed to be the initial *bona fide* offering thereof.
- (7) That, for purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b) (1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.
- (8) That, for the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial *bona fide* offering thereof.
- (9) To file an application for the purpose of determining the eligibility of the trustee to act under subsection (a) of Section 310 of the Trust Indenture Act in accordance with the rules and regulations prescribed by the Commission under Section 305(b)(2) of the Trust Indenture Act.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Montreal, Province of Quebec, Canada, on the 2nd day of June, 2014.

BIOAMBER INC.

By: /s/ Jean-François Huc
Jean-François Huc
President and Chief Executive Officer
and Director

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby severally constitutes and appoints Jean-François Huc and Andrew P. Ashworth, and each of them, as such person's true and lawful attorneys in fact and agents, with full power of substitution and resubstitution, for such person and in such persons's name, place, and stead, in any and all capacities, to sign any and all amendments (including post effective amendments, exhibits thereto and other documents in connection therewith) to this registration statement and any subsequent registration statement filed by the registrant pursuant to Rule 462(b) of the Securities Act of 1933, as amended, which relates to this registration statement, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys in fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as such person might or could do in person, hereby ratifying and confirming all that said attorneys in fact and agents, or any of them, or their or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement has been signed by the following persons in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Jean-François Huc</u> Jean-François Huc	President, Chief Executive Officer and Director (Principal Executive Officer)	June 2, 2014
<u>/s/ Andrew P. Ashworth</u> Andrew P. Ashworth	Chief Financial Officer (Principal Financial Officer)	June 2, 2014
<u>/s/ Raymond Land</u> Raymond Land	Chairman of the Board of Directors	June 2, 2014
<u>/s/ Kurt Briner</u> Kurt Briner	Director	June 2, 2014
<u>/s/ Henry Linsert, Jr.</u> Henry Linsert, Jr.	Director	June 2, 2014

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<u>/s/ Denis Lucquin</u> Denis Lucquin	Director	June 2, 2014
<u>/s/ Heinz Haller</u> Heinz Haller	Director	June 2, 2014
<u>/s/ Ellen B. Richstone</u> Ellen B. Richstone	Director	June 2, 2014
<u>/s/ Kenneth W. Wall</u> Kenneth W. Wall	Director	June 2, 2014

EXHIBIT INDEX

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4.4(1)	Form of Preferred Stock Warrant Agreement and Warrant Certificate				
4.5(1)	Form of Unit Agreement				
4.5	Form of Indenture for Senior Debt Securities				
4.6	Form of Indenture for Subordinated Debt Securities				
5.1	Opinion of Goodwin Procter LLP				
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10.10	Warrant to purchase shares of common stock dated February 6, 2009 issued by the Registrant to Roger Laurent Bernier	S-1	333-177917	12/22/2011	10.18
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<u>Exhibit Number</u>	<u>Description of the Document</u>	<u>Form or Schedule</u>	<u>SEC File No.</u>	<u>Filing Date</u>	<u>Exhibit Number in Original Filing</u>
10.13	Shares of Common Stock Purchase Warrant to purchase shares of common stock dated April 15, 2011 issued by the Registrant to MCVF Technology Fund I, LLC	S-1	333-177917	12/22/2011	10.26
10.14	Shares of Common Stock Purchase Warrant to purchase shares of common stock dated April 15, 2011 issued by the Registrant to Jean-François Huc	S-1	333-177917	12/22/2011	10.27
10.15	Shares of Common Stock Purchase Warrant to purchase shares of common stock dated April 15, 2011 issued by the Registrant to Michael Hartmann	S-1	333-177917	12/22/2011	10.28
10.16	Shares of Common Stock Purchase Warrant to purchase shares of common stock dated April 15, 2011 issued by the Registrant to Roger Laurent Bemier	S-1	333-177917	12/22/2011	10.29
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23.1	Consent of Deloitte LLP, Independent Registered Public Accounting Firm				
23.2	Consent of Goodwin Procter LLP (included in Exhibit 5.1)				
24.1	Power of Attorney (included on signature page)				
25.1(2)	Form T-1 Statement of Eligibility of Trustee for Senior Indenture under the Trust Indenture Act of 1939				
25.2(2)	Form T-1 Statement of Eligibility of Trustee for Subordinated Indenture under the Trust Indenture Act of 1939				

-
- (1) To be filed, if necessary, subsequent to the effectiveness of this registration by an amendment to this registration statement or incorporation by reference pursuant to a Current Report on Form 8-K in connection with an offering of securities.
- (2) To be filed pursuant to Section 305(b)(2) of the Trust Indenture Act of 1939.

SENIOR INDENTURE

BIOAMBER INC.

ISSUER

and

TRUSTEE

Dated as of

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BIOAMBER INC.
Reconciliation and tie between Trust Indenture Act of 1939 and
Indenture, dated as of

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(a)(2)	7.10
(a)(3)	NOT APPLICABLE
(a)(4)	NOT APPLICABLE
(a)(5)	7.10
(b)	7.10
Section 311 (a)	7.11
(b)	7.11
(c)	NOT APPLICABLE
Section 312 (a)	2.06
(b)	10.03
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(c)(1)	7.06
(d)	7.06
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(b)	NOT APPLICABLE
(c)(1)	10.04
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(c)(3)	NOT APPLICABLE
(d)	NOT APPLICABLE
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(f)	NOT APPLICABLE
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(a)(2)	6.04
(b)	2.05
Section 318 (a)	10.01

Senior Indenture dated as of between BioAmber Inc., a Delaware corporation (“*Company*”), and _____, as trustee (“*Trustee*”).

Each party agrees as follows for the benefit of the other party and for the equal and ratable benefit of the Holders of the Securities issued under this Indenture.

ARTICLE I
DEFINITIONS AND INCORPORATION BY REFERENCE

Section 1.01 Definitions

“*Additional Amounts*” means any additional amounts which are required hereby or by any Security, under circumstances specified herein or therein, to be paid by the Company in respect of certain taxes imposed on Holders specified herein or therein and which are owing to such Holders.

“*Affiliate*” of any specified person means any other person directly or indirectly controlling or controlled by or under direct or indirect common control with such specified person. For the purposes of this definition, “control” (including, with correlative meanings, the terms “controlled by” and “under common control with”), as used with respect to any person, shall mean the possession, directly or indirectly, of the power to direct or cause the direction of the management or policies of such person, whether through the ownership of voting securities or by agreement or otherwise.

“*Agent*” means any Registrar, Paying Agent or Service Agent.

“*Applicable Procedures*” means, with respect to any transfer or transaction involving a Global Security or beneficial interest therein, the rules and procedures of DTC or any successor Depository, in each case to the extent applicable to such transaction and as in effect from time to time.

“*Authorized Newspaper*” means a newspaper in an official language of the country of publication customarily published at least once a day for at least five days in each calendar week and of general circulation in the place in connection with which the term is used.

“*Bearer*” means anyone in possession from time to time of a Bearer Security.

“*Bearer Security*” means any Security, including any interest coupon appertaining thereto, that does not provide for the identification of the Holder thereof.

“*Board of Directors*” means the Board of Directors of the Company or any duly authorized committee thereof.

“*Board Resolution*” means a copy of a resolution certified by the Secretary or an Assistant Secretary of the Company to have been adopted by the Board of Directors or pursuant to authorization by the Board of Directors and to be in full force and effect on the date of the certificate and delivered to the Trustee.

“*Business Day*” means any day other than a Saturday, Sunday or other day on which banking institutions are authorized or required by law, regulation or executive order to close or be closed in the State of New York, the State of Colorado or in the City of the Corporate Trust Office.

“*Capital Interests*” means any and all shares, interests, participations, rights or other equivalents (however designated) of capital stock, including, without limitation, with respect to partnerships, partnership interests (whether general or limited) and any other interest or participation that confers on a person the right to receive a share of the profits and losses of, or distributions of assets of, such partnership.

“*Company*” means the party named as such above until a successor replaces it and thereafter means the successor.

“*Company Order*” means a written order signed in the name of the Company by two Officers, and delivered to the Trustee.

“*Company Request*” means a written request signed in the name of the Company by its Chief Executive Officer, Chief Financial Officer or a Vice President, and by its Treasurer, an Assistant Treasurer, its Secretary or an Assistant Secretary, and delivered to the Trustee.

“*Corporate Trust Office*” means the address of the Trustee specified in Section 10.02, or such other address as to which the Trustee may give notice to the Holders and the Company.

“*Default*” means any event which is, or after notice or passage of time or both would be, an Event of Default.

“*Depository*” means, with respect to the Securities of any Series issuable or issued in whole or part in the form of one or more Global Securities, the person designated as Depository for such Series by the Company, which Depository shall be a clearing agency registered under the Exchange Act; and if at any time there is more than one such person, “*Depository*” as used with respect to the Securities of any Series shall mean the Depository with respect to the Securities of such Series.

“*Discount Security*” means any Security that provides for an amount less than the stated principal amount thereof to be due and payable upon declaration of acceleration of the maturity thereof pursuant to Section 6.02.

“*Dollars*” and “\$” means the currency of The United States of America.

“*DTC*” means The Depository Trust Company, a New York corporation.

“*Exchange Act*” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

“*Foreign Currency*” means any currency or currency unit issued by a government other than the government of The United States of America.

“*Foreign Government Obligations*” means, with respect to Securities of any Series that are denominated in a Foreign Currency, (i) direct obligations of the government that issued or caused to be issued such currency for the payment of which obligations its full faith and credit is pledged or (ii) obligations of a person controlled or supervised by or acting as an agency or instrumentality of such government the timely payment of which is unconditionally guaranteed as a full faith and credit obligation by such government, which, in either case under clauses (i) or (ii), are not callable or redeemable at the option of the issuer thereof.

“*GAAP*” means generally accepted accounting principles set forth in the opinions and pronouncements of the Accounting Principles Board of the American Standards Board or in such other statements by such other entity as have been approved by a significant segment of the accounting profession.

“*Global Security*” or “*Global Securities*” means a Security or Securities, as the case may be, in the form established pursuant to Section 2.02 evidencing all or part of a Series of Securities, issued to the Depository for such Series or its nominee, and registered in the name of such Depository or nominee.

“*Holder*” means a person in whose name a Security is registered in the records of the Registrar or the Bearer of a Bearer Security.

“*Indenture*” means this Indenture as amended or supplemented from time to time and shall include the form and terms of particular Series of Securities established as contemplated hereunder.

“*interest*” with respect to any Discount Security which by its terms bears interest only after Maturity means interest payable after Maturity.

“*Maturity*,” when used with respect to any Security or installment of principal thereof, means the date on which the principal of such Security or such installment of principal becomes due and payable as therein or herein provided, whether at the Stated Maturity or by declaration of acceleration, call for redemption or otherwise.

“*Officer*” means the Chief Executive Officer, Chief Financial Officer, any Vice-President, the Treasurer, the Secretary, any Assistant Treasurer or any Assistant Secretary of the Company.

“*Officers’ Certificate*” means a certificate signed by two Officers, and delivered to the Trustee.

“*Opinion of Counsel*” means a written opinion of legal counsel who is reasonably acceptable to the Trustee. The counsel may be an employee of or counsel to the Company.

“*person*” means any individual, corporation, partnership, joint venture, association, limited liability company, joint-stock company, trust, unincorporated organization or government or any agency or political subdivision thereof.

“*principal*” of a Security means the principal of the Security plus, when appropriate, the premium, if any, on, and any Additional Amounts in respect of, the Security.

“*Responsible Officer*” means any officer of the Trustee in its Corporate Trust Office with direct responsibility for the administration of this Indenture and also means, with respect to a particular corporate trust matter, any other officer to whom any corporate trust matter is referred because of his or her knowledge of and familiarity with a particular subject.

“*SEC*” means the Securities and Exchange Commission.

“*Securities*” means the debentures, notes or other debt instruments of the Company of any Series authenticated and delivered under this Indenture.

“*Series*” or “*Series of Securities*” means each series of debentures, notes or other debt instruments of the Company created pursuant to Sections 2.01 and 2.02 hereof.

“*Stated Maturity*” means when used with respect to any Security or any installment of principal thereof or interest thereon, the date specified in such Security as the fixed date on which the principal of such Security or such installment of principal or interest is due and payable.

“*Subsidiary*” means, with respect to any person, any corporation, association or other business entity of which more than 50% of the total voting power of shares of Capital Interests entitled (without regard to the occurrence of any contingency) to vote in the election of directors, managers or trustees thereof or, in the case of a partnership, more than 50% of the partners’ Capital Interests (considering all partners’ Capital Interests as a single class), is at the time owned or controlled, directly or indirectly, by such person or one or more of the other Subsidiaries of such person or combination thereof.

“*TIA*” means the Trust Indenture Act of 1939 (15 U.S. Code Sections 77aaa-77bbb) as in effect on the date of this Indenture and the rules and regulations promulgated thereunder; provided, however, that in the event the Trust Indenture Act of 1939 is amended after such date, “*TIA*” means, to the extent required by any such amendment, the Trust Indenture Act as so amended.

“*Trustee*” means the person named as the “Trustee” in the first paragraph of this instrument until a successor Trustee shall have become such pursuant to the applicable provisions of this Indenture, and thereafter “Trustee” shall mean each person who is then a Trustee hereunder, and if at any time there is more than one such person, “Trustee” as used with respect to the Securities of any Series shall mean the Trustee with respect to Securities of that Series.

“*U.S. Government Obligations*” means securities which are (i) direct obligations of The United States of America for the payment of which its full faith and credit is pledged or (ii) obligations of a person controlled or supervised by and acting as an agency or instrumentality of The United States of America the payment of which is unconditionally guaranteed as a full faith and credit obligation by The United States of America, and which are not callable or redeemable at the option of the issuer thereof, and shall also include a depository receipt issued by a bank or trust company as custodian with respect to any such U.S. Government Obligation or a specific payment of interest on or principal of any such U.S. Government Obligation held by such custodian for the account of the holder of a depository receipt, provided that (except as required by law) such custodian is not authorized to make any deduction

from the amount payable to the holder of such depository receipt from any amount received by the custodian in respect of the U.S. Government Obligation evidenced by such depository receipt.

Section 1.02 Other Definitions.

<u>TERM</u>	<u>DEFINED IN SECTION</u>
<i>Bankruptcy Law</i>	6.01
<i>Custodian</i>	6.01
<i>Event of Default</i>	6.01
<i>Judgment Currency</i>	10.16
<i>Legal Holiday</i>	10.07
<i>mandatory sinking fund payment</i>	11.01
<i>Market Exchange Rate</i>	10.15
<i>New York Banking Day</i>	10.16
<i>optional sinking fund payment</i>	11.01
<i>Paying Agent</i>	2.04
<i>Registrar</i>	2.04
<i>Required Currency</i>	10.16
<i>Service Agent</i>	2.04
<i>successor person</i>	5.01

Section 1.03 Incorporation by Reference of Trust Indenture Act.

Whenever this Indenture refers to a provision of the TIA, the provision is incorporated by reference in and made a part of this Indenture. The following TIA terms used in this Indenture have the following meanings:

“*Commission*” means the SEC.

“*indenture securities*” means the Securities.

“*indenture security holder*” means a Holder.

“*indenture to be qualified*” means this Indenture.

“*indenture trustee*” or “*institutional trustee*” means the Trustee.

“*obligor*” on the indenture securities means the Company and any successor obligor upon the Securities.

All other terms used in this Indenture that are defined by the TIA, defined by TIA reference to another statute or defined by SEC rule under the TIA and not otherwise defined herein are used herein as so defined.

Section 1.04 Rules of Construction.

Unless the context otherwise requires:

(a) a term has the meaning assigned to it;

(b) an accounting term not otherwise defined has the meaning assigned to it in accordance with generally accepted accounting principles;

(c) references to “generally accepted accounting principles” and “GAAP” shall mean generally accepted accounting principles in effect as of the time when and for the period as to which such accounting principles are to be applied;

-
- (d) “or” is not exclusive;
 - (e) words in the singular include the plural, and in the plural include the singular; and
 - (f) provisions apply to successive events and transactions.

ARTICLE II THE SECURITIES

Section 2.01 Issuable in Series. The aggregate principal amount of Securities that may be authenticated and delivered under this Indenture is unlimited. The Securities may be issued in one or more Series. All Securities of a Series shall be identical except as may be set forth or determined in the manner provided in a Board Resolution, supplemental indenture or Officers’ Certificate detailing the adoption of the terms thereof pursuant to authority granted under a Board Resolution. In the case of Securities of a Series to be issued from time to time, the Board Resolution, Officers’ Certificate or supplemental indenture detailing the adoption of the terms thereof pursuant to authority granted under a Board Resolution may provide for the method by which specified terms (such as interest rate, maturity date, record date or date from which interest shall accrue) are to be determined. Securities may differ between Series in respect of any matters, provided that all Series of Securities shall be equally and ratably entitled to the benefits of this Indenture.

Section 2.02 Establishment of Terms of Series of Securities. At or prior to the issuance of any Securities within a Series, the following shall be established (as to the Series generally, in the case of Subsection 2.02(a) and either as to such Securities within the Series or as to the Series generally in the case of Subsections 2.02(b) through 2.02(s)) by or pursuant to a Board Resolution, and set forth or determined in the manner provided in a Board Resolution, supplemental indenture or an Officers’ Certificate:

- (a) the form and title of the Series (which shall distinguish the Securities of that particular Series from the Securities of any other Series);
- (b) the price or prices (expressed as a percentage of the principal amount thereof) at which the Securities of the Series will be issued;
- (c) any limit upon the aggregate principal amount of the Securities of the Series which may be authenticated and delivered under this Indenture (except for Securities authenticated and delivered upon registration of transfer of, or in exchange for, or in lieu of, other Securities of the Series pursuant to Section 2.07, 2.08, 2.11, 3.06 or 9.06);
- (d) the date or dates on which the principal of the Securities of the Series is payable;
- (e) the rate or rates (which may be fixed or variable) per annum or, if applicable, the method used to determine such rate or rates (including, but not limited to, any commodity, commodity index, stock exchange index or financial index) at which the Securities of the Series shall bear interest, if any, the date or dates from which such interest, if any, shall accrue, the date or dates on which such interest, if any, shall commence and be payable and any regular record date for the interest payable on any interest payment date;
- (f) the place or places where the principal of and interest, if any, on the Securities of the Series shall be payable, where the Securities of such Series may be surrendered for registration of transfer or exchange and where notices and demands to or upon the Company in respect of the Securities of such Series and this Indenture may be served, and the method of such payment, if by wire transfer, mail or other means;
- (g) if applicable, the period or periods within which, the price or prices at which and the terms and conditions upon which the Securities of the Series may be redeemed, in whole or in part, at the option of the Company;

(h) the obligation, if any, of the Company to redeem or purchase the Securities of the Series pursuant to any sinking fund or analogous provisions or at the option of a Holder thereof and the period or periods within which, the price or prices at which and the terms and conditions upon which Securities of the Series shall be redeemed or purchased, in whole or in part, pursuant to such obligation;

(i) the dates, if any, on which and the price or prices at which the Securities of the Series will be repurchased by the Company at the option of the Holders thereof and other detailed terms and provisions of such repurchase obligations;

(j) if other than denominations of \$1,000 and any integral multiple thereof, the denominations in which the Securities of the Series shall be issuable;

(k) if other than the principal amount thereof, the portion of the principal amount of the Securities of the Series that shall be payable upon declaration of acceleration of the maturity thereof pursuant to Section 6.02;

(l) the currency of denomination of the Securities of the Series, which may be Dollars or any Foreign Currency, and the agency or organization, if any, responsible for overseeing such composite currency and the Paying Agent for such Foreign Currency Securities (which shall not be the Trustee without the consent of the Trustee);

(m) the provisions, if any, relating to any security provided for the Securities of the Series;

(n) any addition to or change in the Events of Default which applies to any Securities of the Series and any change in the right of the Trustee or the requisite Holders of such Securities to declare the principal amount thereof due and payable pursuant to Section 6.02;

(o) any addition to or change in the covenants set forth in Articles IV or V which applies to Securities of the Series;

(p) the provisions, if any, relating to conversion of any Securities of such Series, including, if applicable, the securities into which the Securities are convertible, the conversion price, the conversion period, provisions as to whether conversion will be mandatory, at the option of the Holders or at the option of the Company, the events requiring an adjustment of the conversion price and provisions affecting conversion if such Series of Securities are redeemed;

(q) whether the Securities of such Series will be senior debt securities or subordinated debt securities and, if applicable, a description of the subordination terms thereof;

(r) any depositaries, interest rate calculation agents, exchange rate calculation agents or other agents with respect to Securities of such Series if other than those appointed herein; and

(s) any other terms of the Securities of the Series (which may modify or delete any provision of this Indenture insofar as it applies to such Series), but which shall not affect the rights, duties, obligations or immunities of the Trustee without the consent of the Trustee.

All Securities of any one Series need not be issued at the same time and may be issued from time to time, consistent with the terms of this Indenture, if so provided by or pursuant to the Board Resolution, supplemental indenture hereto or Officers' Certificate referred to above, and, unless otherwise provided, a Series may be reopened, without the consent of the Holders, for increases in the aggregate principal amount of such Series and issuances of additional Securities of such Series.

Section 2.03 Execution and Authentication. At least one Officer shall sign the Securities for the Company by manual or facsimile signature. If an Officer whose signature is on a Security no longer holds that

office at the time the Security is authenticated, the Security shall nevertheless be valid. A Security shall not be valid until authenticated by the manual signature of the Trustee or an authenticating agent. The signature of the Trustee shall be conclusive evidence that the Security has been authenticated under this Indenture. At any time after the execution and delivery of this Indenture, the Company may deliver Securities executed by the Company to the Trustee for authentication and the Trustee shall authenticate and deliver Securities for original issue in the principal amount provided in a Company Order. Such Company Order may authorize authentication and delivery pursuant to electronic instructions in PDF from the Company or its duly authorized agent or agents. Each Security shall be dated the date of its authentication unless otherwise provided by a Board Resolution, a supplemental indenture hereto or an Officers' Certificate. The aggregate principal amount of Securities of any Series outstanding at any time may not exceed any limit upon the maximum principal amount for such Series set forth in the Board Resolution, supplemental indenture hereto or Officers' Certificate delivered pursuant to Section 2.02, except as provided in Section 2.02 or 2.08. Prior to the first issuance of Securities of any Series, the Trustee shall have received and (subject to Section 7.02) shall be fully protected in relying on: (a) the Board Resolution, supplemental indenture hereto or Officers' Certificate establishing the form of the Securities of that Series or of Securities within that Series and the terms of the Securities of that Series or of Securities within that Series, (b) an Officers' Certificate complying with Section 10.04 relating to the issuance, authentication and delivery of the Securities and (c) an Opinion of Counsel complying with Section 10.04 relating to the issuance, authentication and delivery of the Securities. The Trustee shall have the right to decline to authenticate and deliver any Securities of such Series: (a) if the Trustee, being advised by counsel, determines that such action may not be taken lawfully; (b) if the Trustee shall determine in good faith that such action would expose the Trustee to personal liability to Holders of any then outstanding Series of Securities; or (c) if the issuance of such Securities will affect the rights, powers, duties or immunities under the Securities and this Indenture or otherwise in a manner which is not reasonably acceptable to the Trustee. The Trustee may appoint an authenticating agent acceptable to the Company to authenticate Securities. An authenticating agent may authenticate Securities whenever the Trustee may do so. Each reference in this Indenture to authentication by the Trustee includes authentication by such agent. An authenticating agent has the same rights as an Agent to deal with the Company or an Affiliate of the Company.

Section 2.04 Registrar and Paying Agent. The Company shall maintain, with respect to each Series of Securities, at the place or places specified with respect to such Series pursuant to Section 2.02, an office or agency where Securities of such Series may be presented or surrendered for payment ("*Paying Agent*"), where Securities of such Series may be surrendered for registration of transfer or exchange ("*Registrar*") and where notices and demands to or upon the Company in respect of the Securities of such Series and this Indenture may be served ("*Service Agent*"). The Registrar shall keep a register with respect to each Series of Securities and to their transfer and exchange. The Company will give prompt written notice to the Trustee of the name and address, and any change in the name or address, of each Registrar, Paying Agent or Service Agent. The Company may also from time to time designate one or more co-registrars, additional paying agents or additional service agents and may from time to time rescind such designations; provided, however, that no such designation or rescission shall in any manner relieve the Company of its obligations to maintain a Registrar, Paying Agent and Service Agent in each place so specified pursuant to Section 2.02 for Securities of any Series for such purposes. The Company will give prompt written notice to the Trustee of any such designation or rescission and of any change in the name or address of any such co-registrar, additional paying agent or additional service agent. The term "Registrar" includes any co-registrar; the term "Paying Agent" includes any additional paying agent; and the term "Service Agent" includes any additional service agent. The Company hereby appoints the Trustee the initial Registrar, Paying Agent and Service Agent for each Series unless another Registrar, Paying Agent or Service Agent, as the case may be, is appointed prior to the time Securities of that Series are first issued.

Section 2.05 Paying Agent to Hold Money in Trust. The Company shall require each Paying Agent other than the Trustee to agree in writing that the Paying Agent will hold in trust, for the benefit of Holders of any Series of Securities, or the Trustee, all money held by the Paying Agent for the payment of principal of or interest on the Series of Securities, and will notify the Trustee of any default by the Company in making any such payment. While any such default continues, the Trustee may require a Paying Agent to pay all money held by it to the Trustee. The Company at any time may require a Paying Agent to pay all money held by it to the Trustee. Upon payment over to the Trustee, the Paying Agent (if other than the Company or a Subsidiary of the Company) shall have no further liability for the money. If the Company or a Subsidiary of the Company acts as Paying Agent, it shall

segregate and hold in a separate trust fund for the benefit of Holders of any Series of Securities all money held by it as Paying Agent.

Section 2.06 Holder Lists. The Trustee shall preserve in as current a form as is reasonably practicable the most recent list available to it of the names and addresses of Holders of each Series of Securities and shall otherwise comply with TIA Section 312(a). If the Trustee is not the Registrar, the Company shall furnish to the Trustee at least ten (10) days before each interest payment date and at such other times as the Trustee may request in writing a list, in such form and as of such date as the Trustee may reasonably require, of the names and addresses of Holders of each Series of Securities.

Section 2.07 Transfer and Exchange. Where Securities of a Series are presented to the Registrar or a co-registrar with a request to register a transfer or to exchange them for an equal principal amount of Securities of the same Series, the Registrar shall register the transfer or make the exchange if its requirements for such transactions are met. To permit registrations of transfers and exchanges, the Company shall execute, and the Trustee shall authenticate and deliver the Securities at the Company's request upon receipt of a Company Order. No service charge shall be made for any registration of transfer or exchange (except as otherwise expressly permitted herein), but the Company may require payment of a sum sufficient to cover any tax or similar charge payable in connection therewith (other than any such tax or similar charge payable upon exchanges pursuant to Sections 2.11, 3.06 or 9.06). Neither the Company nor the Registrar shall be required (a) to issue, register the transfer of, or exchange Securities of any Series for the period beginning at the opening of business fifteen days immediately preceding the mailing of a notice of redemption of Securities of that Series selected for redemption and ending at the close of business on the day of such mailing, or (b) to register the transfer of or exchange Securities of any Series selected, called or being called for redemption as a whole or the portion being redeemed of any such Securities selected, called or being called for redemption in part. All Securities issued upon any transfer or exchange of Securities shall be the valid obligations of the Company, evidencing the same debt, and entitled to the same benefits under this Indenture, as the Securities surrendered upon such transfer or exchange. Every Security presented or surrendered for transfer or exchange shall (if so required by the Company or the Trustee) be duly endorsed, or be accompanied by a written instrument of transfer in form satisfactory to the Company and the Registrar duly executed, by the Holder thereof or its attorney duly authorized in writing.

Section 2.08 Mutilated, Destroyed, Lost and Stolen Securities.

(a) If any mutilated Security is surrendered to the Trustee, the Company shall execute and the Trustee shall, upon receipt of a Company Order, authenticate and make available for delivery in exchange therefor a new Security of the same Series and of like tenor and principal amount and bearing a number not contemporaneously outstanding. If there shall be delivered to the Company and the Trustee (i) evidence to their satisfaction of the destruction, loss or theft of any Security and (ii) such security or indemnity as may be required by them to save each of them and any agent of either of them harmless, then, in the absence of notice to the Company or the Trustee that such Security has been acquired by a protected purchaser, the Company shall execute and upon receipt of a Company Order, the Trustee shall authenticate and make available for delivery, in lieu of any such destroyed, lost or stolen Security, a new Security of the same Series and of like tenor and principal amount and bearing a number not contemporaneously outstanding. In case any such mutilated, destroyed, lost or stolen Security has become or is about to become due and payable, the Company in its discretion may, instead of issuing a new Security, pay such Security.

(b) Upon the issuance of any new Security under this Section, the Company may require the payment of a sum sufficient to cover any tax or other charge that may be imposed in relation thereto and any other expenses (including the fees and expenses of the Trustee) connected therewith. Every new Security of any Series issued pursuant to this Section in lieu of any destroyed, lost or stolen Security shall constitute an original additional contractual obligation of the Company, whether or not the destroyed, lost or stolen Security shall be at any time enforceable by anyone, and shall be entitled to all the benefits of this Indenture equally and proportionately with any and all other Securities of that Series duly issued hereunder. The provisions of this Section are exclusive and shall preclude (to the extent lawful) all other rights and remedies with respect to the replacement or payment of mutilated, destroyed, lost or stolen Securities.

Section 2.09 Outstanding Securities. The Securities outstanding at any time are all the Securities authenticated by the Trustee except for those canceled by it, those delivered to it for cancellation, those reductions in the interest on a Global Security effected by the Trustee in accordance with the provisions hereof and those described in this Section as not outstanding. If a Security is replaced pursuant to Section 2.08, it ceases to be outstanding until the Trustee receives proof satisfactory to it that the replaced Security is held by a protected purchaser. If the Paying Agent (other than the Company, a Subsidiary of the Company or an Affiliate of the Company) holds on the Maturity of Securities of a Series money sufficient to pay such Securities payable on that date, then on and after that date such Securities of the Series cease to be outstanding and interest on them ceases to accrue. A Security does not cease to be outstanding because the Company or an Affiliate of the Company holds the Security. In determining whether the Holders of the requisite principal amount of outstanding Securities have given any request, demand, authorization, direction, notice, consent or waiver hereunder, the principal amount of a Discount Security that shall be deemed to be outstanding for such purposes shall be the amount of the principal thereof that would be due and payable as of the date of such determination upon a declaration of acceleration of the Maturity thereof pursuant to Section 6.02.

Section 2.10 Treasury Securities. In determining whether the Holders of the required principal amount of Securities of a Series have concurred in any request, demand, authorization, direction, notice, consent or waiver, Securities of a Series owned by the Company shall be disregarded, except that for the purposes of determining whether the Trustee shall be protected in relying on any such request, demand, authorization, direction, notice, consent or waiver, only Securities of a Series that a Responsible Officer of the Trustee knows are so owned shall be so disregarded.

Section 2.11 Temporary Securities. Until definitive Securities are ready for delivery, the Company may prepare and execute and the Trustee shall authenticate temporary Securities upon receipt of a Company Order. Temporary Securities shall be substantially in the form of definitive Securities but may have variations that the Company considers appropriate for temporary Securities. Without unreasonable delay, the Company shall prepare and execute and the Trustee, upon receipt of a Company Order, shall authenticate definitive Securities of the same Series and date of maturity in exchange for temporary Securities. Until so exchanged, temporary securities shall have the same rights under this Indenture as the definitive Securities.

Section 2.12 Cancellation. The Company at any time may deliver Securities to the Trustee for cancellation. The Registrar and the Paying Agent shall forward to the Trustee any Securities surrendered to them for registration of transfer, exchange or payment. The Trustee shall cancel all Securities surrendered for registration of transfer, exchange, payment, replacement or cancellation in accordance with its customary procedures. The Company may not issue new Securities to replace Securities that it has paid or delivered to the Trustee for cancellation.

Section 2.13 Defaulted Interest. If the Company defaults in a payment of interest on a Series of Securities, it shall pay the defaulted interest at the rate established for the particular Series, if any, plus, to the extent permitted by law, any interest payable on the defaulted interest, to the persons who are Holders of the Series on a subsequent special record date. The Company shall fix the special record date and payment date. At least ten (10) days before the special record date, the Company shall mail to the Trustee and to each Holder of the Series a notice that states the record date, the related payment date and the amount of interest to be paid. The Company may also pay defaulted interest in any other lawful manner.

Section 2.14 Global Securities.

(a) Terms of Securities. A Board Resolution, a supplemental indenture hereto or an Officers' Certificate shall establish whether the Securities of a Series shall be issued in whole or in part in the form of one or more Global Securities and the Depository for such Global Security or Securities.

(b) Transfer and Exchange. Notwithstanding any provisions to the contrary contained in Section 2.07 of the Indenture and in addition thereto, any Global Security shall be exchangeable pursuant to Section 2.07 of the Indenture for Securities registered in the names of Holders other than the Depository for such Security or its nominee only if (i) such Depository notifies the Company that it is unwilling or unable to continue as Depository

for such Global Security or if at any time such Depository ceases to be a clearing agency registered under the Exchange Act, and, in either case, the Company fails to appoint a successor Depository registered as a clearing agency under the Exchange Act within 90 days of such event, (ii) the Company executes and delivers to the Trustee an Officers' Certificate stating that such Global Security shall be so exchangeable or (iii) an Event of Default with respect to the Securities represented by such Global Security shall have happened and be continuing and the Depository request the Company to exchange the Securities. Any Global Security that is exchangeable pursuant to the preceding sentence shall be exchangeable for Securities registered in such names as the Depository shall direct in writing in an aggregate principal amount equal to the principal amount of the Global Security with like tenor and terms.

(c) A Global Security may not be transferred except as a whole by the Depository with respect to such Global Security to a nominee of such Depository, by a nominee of such Depository to such Depository or another nominee of such Depository or by the Depository or any such nominee to a successor Depository or a nominee of such a successor Depository.

(d) Legend. Any Global Security issued hereunder shall bear a legend in substantially the following form:

"This Security is a Global Security within the meaning of the Indenture hereinafter referred to and is registered in the name of the Depository or a nominee of the Depository. This Security is exchangeable for Securities registered in the name of a person other than the Depository or its nominee only in the limited circumstances described in the Indenture, and may not be transferred except as a whole by the Depository to a nominee of the Depository, by a nominee of the Depository to the Depository or another nominee of the Depository or by the Depository or any such nominee to a successor Depository or a nominee of such a successor Depository."

(e) Acts of Holders. The Depository, as a Holder, may appoint agents and otherwise authorize participants to give or take any request, demand, authorization, direction, notice, consent, waiver or other action which a Holder is entitled to give or take under the Indenture.

(f) Payments. Notwithstanding the other provisions of this Indenture, unless otherwise specified as contemplated by Section 2.02, payment of the principal of and interest, if any, on any Global Security shall be made to the Holder thereof.

(g) [Reserved].

(h) The Depository or its nominee, as registered owner of a Global Security, shall be the Holder of such Global Security for all purposes under the Indenture and the Securities, and owners of beneficial interests in a Global Security shall hold such interests pursuant to the Applicable Procedures. Accordingly, any such owner's beneficial interest in a Global Security will be shown only on, and the transfer of such interest shall be effected only through, records maintained by the Depository or its nominee and such owners of beneficial interests in a Global Security will not be considered the owners or holders thereof. Notwithstanding any other provision of this Indenture or any Security, where this Indenture or any Global Security provides for notice of any event (including any notice of redemption or repurchase) to a Holder of a Global Security (whether by mail or otherwise), such notice shall be sufficiently given if given to the Depository (or its designee) pursuant to the standing instructions from the Depository or its designee, including by electronic mail in accordance with applicable Depository procedures.

Section 2.15 CUSIP Numbers. The Company in issuing the Securities may use "CUSIP" numbers (if then generally in use), and, if so, "CUSIP" numbers shall be used in notices of redemption as a convenience to Holders; provided that any such notice may state that no representation is made as to the correctness of such numbers either as printed on the Securities or as contained in any notice of a redemption and that reliance may be placed only on the other elements of identification printed on the Securities, and any such redemption shall not be affected by any defect in or omission of such numbers. The Company shall promptly notify the Trustee of any change in "CUSIP" numbers of which the Company becomes aware.

**ARTICLE III
REDEMPTION**

Section 3.01 Notice to Trustee. The Company may, with respect to any Series of Securities, reserve the right to redeem and pay the Series of Securities or may covenant to redeem and pay the Series of Securities or any part thereof prior to the Stated Maturity thereof at such time and on such terms as provided for in such Securities. If a Series of Securities is redeemable and the Company wants or is obligated to redeem prior to the Stated Maturity thereof all or part of the Series of Securities pursuant to the terms of such Securities, it shall notify the Trustee of the redemption date and the principal amount of the Series of Securities to be redeemed at least 40, and not more than 60 days before the redemption date.

Section 3.02 Selection of Securities to be Redeemed. Unless otherwise indicated for a particular Series by a Board Resolution, a supplemental indenture or an Officers' Certificate, if less than all the Securities of a Series are to be redeemed, the Trustee shall select the Securities of the Series to be redeemed in any manner that the Trustee deems fair and appropriate or in accordance with the procedures of the applicable Depository. The Trustee shall make the selection from Securities of the Series outstanding not previously called for redemption. Securities of a Series and portions selected for redemption shall be in amounts of \$1,000 or whole multiples of \$1,000 or, with respect to Securities of any Series issuable in other denominations pursuant to Section 2.02(j), the minimum principal denomination for each Series and integral multiples thereof. Provisions of this Indenture that apply to Securities of a Series called for redemption also apply to portions of Securities of that Series called for redemption. The Trustee shall not be liable for the selection made in accordance with this Section 3.02. For all purposes of this Indenture, unless the context otherwise requires, all provisions relating to the redemption of Securities shall relate, in the case of any Security redeemed or to be redeemed only in part, to the portion of the principal of such Security which has been or is to be redeemed.

Section 3.03 Notice of Redemption.

(a) At least 30 days but not more than 60 days before a redemption date, the Company shall mail a notice of redemption by first-class mail to each Holder whose Securities are to be redeemed and, if any Bearer Securities are outstanding, publish on one occasion a notice in an Authorized Newspaper. The notice shall identify the Securities of the Series to be redeemed and shall state:

(i) the redemption date;

(ii) the redemption price or the manner of the calculation of the redemption price;

(iii) the name and address of the Paying Agent;

(iv) that Securities of the Series called for redemption must be surrendered to the Paying Agent to collect the redemption price;

(v) that interest on Securities of the Series called for redemption ceases to accrue on and after the redemption date;

(vi) the CUSIP number, if any; and

(vii) any other information as may be required by the terms of the particular Series or the Securities of a Series being redeemed.

At the Company's request, the Trustee shall give the notice of redemption in the Company's name and at its expense; provided that the Company shall have delivered to the Trustee, at least five Business Days (or such shorter period as the Trustee may consent to in writing) before notice of redemption is required to be mailed or caused to be mailed to Holders pursuant to this Section 3.03, an Officers' Certificate of the Company requesting that the Trustee give such notice and setting forth the information to be stated in such notice as provided in the preceding paragraph.

Section 3.04 Effect of Notice of Redemption. Once notice of redemption is mailed or published as provided in Section 3.03, Securities of a Series called for redemption become due and payable on the redemption date and at the redemption price. A notice of redemption may not be conditional. Upon surrender to the Paying Agent, such Securities shall be paid at the redemption price plus accrued interest to the redemption date; provided that installments of interest whose Stated Maturity is on or prior to the redemption date shall be payable to the Holders of such Securities (or one or more predecessor Securities) registered at the close of business on the relevant record date therefor according to their terms and the terms of this Indenture.

Section 3.05 Deposit of Redemption Price. On or before 10:00 a.m., New York City time, on the redemption date, the Company shall deposit with the Paying Agent money sufficient to pay the redemption price of and accrued interest, if any, on all Securities to be redeemed on that date.

Section 3.06 Securities Redeemed in Part. Upon surrender of a Security that is redeemed in part, the Company shall issue and execute and the Trustee, upon receipt of a Company Order, shall authenticate for the Holder a new Security of the same Series and the same maturity equal in principal amount to the unredeemed portion of the Security surrendered.

ARTICLE IV COVENANTS

Section 4.01 Payment of Principal and Interest. The Company covenants and agrees for the benefit of the Holders of each Series of Securities that it will duly and punctually pay the principal of and interest, if any, on the Securities of that Series in accordance with the terms of such Securities and this Indenture by 10:00 a.m., New York City time on the due date.

Section 4.02 SEC Reports. The Company shall, so long as any of the Securities are outstanding, electronically file with the Commission the annual, quarterly and other periodic reports that the Company is required to file (or would be otherwise required to file) with the Commission pursuant to Sections 13 and 15(d) of the Exchange Act. The Company also shall comply with the other provisions of TIA Section 314(a). Delivery of any reports, information and documents to the Trustee is for informational purposes only and the Trustee's receipt of such shall not constitute constructive notice of any information contained therein or determinable from information contained therein, including the Company's compliance with any of its covenants hereunder (as to which the Trustee is entitled to rely exclusively on an Officers' Certificate).

Section 4.03 Compliance Certificate. The Company shall, so long as any of the Securities are outstanding, deliver to the Trustee, within 120 days after the end of each fiscal year (which on the date hereof ends on December 31) of the Company, an Officers' Certificate stating whether or not to the knowledge of the signers thereof the Company is in default in the performance and observance of any of the terms, provisions and conditions hereof (without regard to any period of grace or requirement of notice provided hereunder), and if a Default or Event of Default shall have occurred, specifying all such Defaults or Events of Default and the nature and status thereof of which they may have knowledge.

The Company shall, so long as any of the Securities are outstanding, deliver to the Trustee, within thirty (30) days after becoming aware of any Default or Event of Default, an Officers' Certificate specifying such Default or Event of Default and what action the Company is taking or proposes to take with respect thereto; provided that no notice shall be required to the extent that the event that would constitute a Default or Event of Default has been cured or waived.

Section 4.04 Stay, Extension and Usury Laws. The Company covenants (to the extent that it may lawfully do so) that it will not at any time insist upon, plead or in any manner whatsoever claim or take the benefit or advantage of, any stay, extension or usury law wherever enacted, now or at any time hereafter in force, which may affect the covenants or the performance of this Indenture or the Securities and the Company (to the extent it may lawfully do so) hereby expressly waives all benefit or advantage of any such law and covenants that it will not, by resort to any such law, hinder, delay or impede the execution of any power herein granted to the Trustee, but will suffer and permit the execution of every such power as though no such law has been enacted.

Section 4.05 Maintenance of Office or Agency. The Company will maintain an office or agency required under Section 2.04. The Company will give prompt written notice to the Trustee of the location, and of any change in location, of such office or agency. If at any time the Company shall fail to maintain any such required office or agency or shall fail to furnish the Trustee with the address thereof, such presentations, surrenders, notices and demands may be made or served at the Corporate Trust Office of the Trustee, and the Company hereby appoints the Trustee as its agent to receive all such presentations, surrenders, notices and demands.

ARTICLE V SUCCESSORS

Section 5.01 When Company May Merge, Etc. The Company shall not consolidate with or merge with or into, or convey, transfer or lease all or substantially all of its properties and assets to, another person (a “*successor person*”) unless:

(a) the Company is the surviving person or the successor person (if other than the Company) is organized and validly existing under the laws of any U.S. domestic jurisdiction and expressly assumes the Company’s obligations on the Securities and under this Indenture pursuant to a supplemental indenture; and

(b) immediately after giving effect to the transaction, no Default or Event of Default shall have occurred and be continuing.

For the avoidance of doubt, notwithstanding the foregoing, the sale, conveyance or transfer of intellectual property and similar or related assets and the Company’s equity ownership interests in foreign Subsidiaries to one or more of its Subsidiaries, in each case, in connection with its global tax optimization strategies in conjunction with business operations will not be considered “all or substantially all of its properties and assets.”

The Company shall deliver to the Trustee prior to the consummation of the proposed transaction an Officers’ Certificate and an Opinion of Counsel, each stating that the proposed transaction and any supplemental indenture comply with this Indenture.

Section 5.02 Successor Person Substituted. Upon any consolidation or merger, or any sale, lease, conveyance or other disposition of all or substantially all of the assets of the Company in accordance with Section 5.01, the successor person formed by such consolidation or into or with which the Company is merged or to which such sale, lease, conveyance or other disposition is made shall succeed to, and be substituted for, and may exercise every right and power of, the Company under this Indenture with the same effect as if such successor person has been named as the Company herein; provided, however, that the predecessor Company in the case of a sale, conveyance or other disposition (other than a lease) shall be released from all obligations and covenants under this Indenture and the Securities.

ARTICLE VI DEFAULTS AND REMEDIES

Section 6.01 Events of Default.

“*Event of Default*,” wherever used herein with respect to Securities of any Series, means any one of the following events, unless in the establishing Board Resolution, supplemental indenture or Officers’ Certificate, it is provided that such Series shall not have the benefit of said Event of Default:

(a) default in the payment of any interest on any Security of that Series when it becomes due and payable, and continuance of such default for a period of 30 days; or

(b) default in the payment of principal of (or premium, if any, on) any Security of that Series at its Maturity; or

(c) default in the performance or breach of any covenant or warranty of the Company in this Indenture (other than a covenant or warranty for which the consequences of nonperformance or breach are addressed elsewhere in this Section 6.01 and other than a covenant or warranty that has been included in this Indenture solely for the benefit of a Series of Securities other than that Series), which default continues uncured for a period of 90 days after there has been given, by registered or certified mail, to the Company by the Trustee or to the Company and the Trustee by the Holders of not less than a majority in principal amount of the outstanding Securities of that Series a written notice specifying such default or breach and requiring it to be remedied and stating that such notice is a “Notice of Default” hereunder; or

(d) the Company pursuant to or within the meaning of any Bankruptcy Law:

- (i) commences a voluntary case or proceeding;
- (ii) consents to the entry of an order for relief against it in an involuntary case,
- (iii) consents to the appointment of a Custodian of it or for all or substantially all of its property,
- (iv) makes a general assignment for the benefit of its creditors, or
- (v) makes an admission in writing that it is generally unable to pay its debts as the same become due; or

(e) a court of competent jurisdiction enters an order or decree under any Bankruptcy Law that:

- (i) is for relief against the Company in an involuntary case,
- (ii) appoints a Custodian of the Company or for all or substantially all of its property, or
- (iii) orders the liquidation of the Company, and the order or decree remains unstayed and in effect for 90 days; or

(f) any other Event of Default provided with respect to Securities of that Series, which is specified in a Board Resolution, a supplemental indenture hereto or an Officers’ Certificate, in accordance with Section 2.02(n).

The term “*Bankruptcy Law*” means Title 11 of the U.S. Code or any similar federal or state law for the relief of debtors. The term “*Custodian*” means any receiver, trustee, assignee, liquidator or similar official under any Bankruptcy Law.

Section 6.02 Acceleration of Maturity; Rescission and Annulment. If an Event of Default with respect to Securities of any Series at the time outstanding occurs and is continuing (other than an Event of Default referred to in Section 6.01(d) or (e)), then in every such case the Trustee or the Holders of not less than a majority in principal amount of the outstanding Securities of that Series may declare the principal amount (or, if any Securities of that Series are Discount Securities, such portion of the principal amount as may be specified in the terms of such Securities) of and accrued and unpaid interest, if any, on all of the Securities of that Series to be due and payable immediately, by a notice in writing to the Company (and to the Trustee if given by Holders), and upon any such declaration such principal amount (or specified amount) and accrued and unpaid interest, if any, shall become immediately due and payable. If an Event of Default specified in Section 6.01(d) or (e) shall occur, the principal amount (or specified amount) of and accrued and unpaid interest, if any, on all outstanding Securities shall be immediately due and payable without any declaration or other act on the part of the Trustee or any Holder. At any time after such a declaration of acceleration with respect to any Series has been made and before a judgment or

decree for payment of the money due has been obtained by the Trustee as hereinafter in this Article provided, the Holders of a majority in principal amount of the outstanding Securities of that Series, by written notice to the Company and the Trustee, may rescind and annul such declaration and its consequences if (a) the Company has paid and deposited with the Trustee a sum sufficient to pay (1) all overdue instalments of interest on all Securities of that Series, (2) the principal of (and premium, if any, on) any Securities of that Series which have become due otherwise than by such declaration of acceleration and interest thereon at the rate borne by the Securities of that Series, (3) to the extent that payment of such interest is lawful, interest upon overdue instalments of interest at the rate borne by the Securities of that Series, and (4) all sums paid or advanced by the Trustee hereunder and the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel; and (b) all Events of Default with respect to Securities of that Series, other than the non-payment of the principal and interest, if any, of Securities of that Series which have become due solely by such declaration of acceleration, have been cured or waived as provided in Section 6.13. No such rescission shall affect any subsequent Default or impair any right consequent thereon.

Section 6.03 Collection of Indebtedness and Suits for Enforcement by Trustee.

The Company covenants that if:

(a) default is made in the payment of any interest on any Security when such interest becomes due and payable and such default continues for a period of 30 days, or

(b) default is made in the payment of principal of any Security at the Maturity thereof, then the Company will, upon demand of the Trustee, pay to it, for the benefit of the Holders of such Securities, the whole amount then due and payable on such Securities for principal and interest and, to the extent that payment of such interest shall be legally enforceable, interest on any overdue principal and any overdue interest at the rate or rates prescribed therefor in such Securities and, in addition thereto, such further amount as shall be sufficient to cover the costs and expenses of collection, including the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel.

If the Company fails to pay such amounts forthwith upon such demand, the Trustee, in its own name and as trustee of an express trust, may institute a judicial proceeding for the collection of the sums so due and unpaid, may prosecute such proceeding to judgment or final decree and may enforce the same against the Company or any other obligor upon such Securities and collect the moneys adjudged or deemed to be payable in the manner provided by law out of the property of the Company or any other obligor upon such Securities, wherever situated.

If an Event of Default with respect to any Securities of any Series occurs and is continuing, the Trustee may in its discretion proceed to protect and enforce its rights and the rights of the Holders of Securities of such Series by such appropriate judicial proceedings as the Trustee shall deem most effectual to protect and enforce any such rights, whether for the specific enforcement of any covenant or agreement in this Indenture or in aid of the exercise of any power granted herein, or to enforce any other proper remedy.

Section 6.04 Trustee May File Proofs of Claim. In case of the pendency of any receivership, insolvency, liquidation, bankruptcy, reorganization, arrangement, adjustment, composition or other judicial proceeding relative to the Company or any other obligor upon the Securities or the property of the Company or of such other obligor or their creditors, the Trustee (irrespective of whether the principal of the Securities shall then be due and payable as therein expressed or by declaration or otherwise and irrespective of whether the Trustee shall have made any demand on the Company for the payment of overdue principal or interest) shall be entitled and empowered, by intervention in such proceeding or otherwise, (a) to file and prove a claim for the whole amount of principal (and premium, if any) and interest owing and unpaid in respect of the Securities and to file such other papers or documents as may be necessary or advisable in order to have the claims of the Trustee (including any claim for the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel) and of the Holders allowed in such judicial proceeding, and (b) to collect and receive any moneys or other property payable or deliverable on any such claims and to distribute the same, and any custodian, receiver, assignee, trustee, liquidator, sequestrator or other similar official in any such judicial proceeding is hereby authorized by each Holder to make such payments to the Trustee and, in the event that the Trustee shall consent to the making of such

payments directly to the Holders, to pay to the Trustee any amount due it for the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel, and any other amounts due the Trustee under Section 7.07. Nothing herein contained shall be deemed to authorize the Trustee to authorize or consent to or accept or adopt on behalf of any Holder any plan of reorganization, arrangement, adjustment or composition affecting the Securities or the rights of any Holder thereof or to authorize the Trustee to vote in respect of the claim of any Holder in any such proceeding.

Section 6.05 Trustee May Enforce Claims Without Possession of Securities. All rights of action and claims under this Indenture or the Securities may be prosecuted and enforced by the Trustee without the possession of any of the Securities or the production thereof in any proceeding relating thereto, and any such proceeding instituted by the Trustee shall be brought in its own name as trustee of an express trust, and any recovery of judgment shall, after provision for the payment of the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel, be for the ratable benefit of the Holders of the Securities in respect of which such judgment has been recovered.

Section 6.06 Application of Money Collected. Any money collected by the Trustee pursuant to this Article shall be applied in the following order, at the date or dates fixed by the Trustee and, in case of the distribution of such money on account of principal or interest, upon presentation of the Securities and the notation thereon of the payment if only partially paid and upon surrender thereof if fully paid:

First: To the payment of all amounts due the Trustee under Section 7.07; and

Second: To the payment of the amounts then due and unpaid for principal (and premium, if any) of and interest on the Securities in respect of which or for the benefit of which such money has been collected, ratably, without preference or priority of any kind, according to the amounts due and payable on such Securities for principal and interest, respectively; and

Third: To the Company.

Section 6.07 Limitation on Suits. No Holder of any Security of any Series shall have any right to institute any proceeding, judicial or otherwise, with respect to this Indenture, or for the appointment of a receiver or trustee, or for any other remedy hereunder, unless:

(a) such Holder has previously given written notice to the Trustee of a continuing Event of Default with respect to the Securities of that Series;

(b) the Holders of at least a majority in principal amount of the outstanding Securities of that Series shall have made written request to the Trustee to institute proceedings in respect of such Event of Default in its own name as Trustee hereunder;

(c) such Holder or Holders shall have offered to the Trustee security or indemnity reasonably satisfactory to the Trustee against the costs, expenses and liabilities to be incurred in compliance with such request;

(d) the Trustee for 60 days after its receipt of such notice, request and offer of indemnity has failed to institute any such proceeding; and

(e) no direction inconsistent with such written request has been given to the Trustee during such 60-day period by the Holders of a majority in principal amount of the outstanding Securities of that Series;

it being understood and intended that no one or more of such Holders shall have any right in any manner whatever by virtue of, or by availing of, any provision of this Indenture to affect, disturb or prejudice the rights of any other of such Holders, or to obtain or to seek to obtain priority or preference over any other of such Holders or to enforce any right under this Indenture, except in the manner herein provided and for the equal and ratable benefit of all such Holders.

Section 6.08 Unconditional Right of Holders to Receive Principal and Interest. Notwithstanding any other provision in this Indenture, the Holder of any Security shall have the right, which is absolute and unconditional, to receive payment of the principal of (and premium, if any) and interest, if any, on such Security on the Stated Maturity or Stated Maturities expressed in such Security (or, in the case of redemption, on the redemption date) and to institute suit for the enforcement of any such payment, and such rights shall not be impaired without the consent of such Holder.

Section 6.09 Restoration of Rights and Remedies. If the Trustee or any Holder has instituted any proceeding to enforce any right or remedy under this Indenture and such proceeding has been discontinued or abandoned for any reason, or has been determined adversely to the Trustee or to such Holder, then and in every such case, subject to any determination in such proceeding, the Company, the Trustee and the Holders shall be restored severally and respectively to their former positions hereunder and thereafter all rights and remedies of the Trustee and the Holders shall continue as though no such proceeding had been instituted.

Section 6.10 Rights and Remedies Cumulative. Except as otherwise provided with respect to the replacement or payment of mutilated, destroyed, lost or stolen Securities in Section 2.08, no right or remedy herein conferred upon or reserved to the Trustee or to the Holders is intended to be exclusive of any other right or remedy, and every right and remedy shall, to the extent permitted by law, be cumulative and in addition to every other right and remedy given hereunder or now or hereafter existing at law or in equity or otherwise. The assertion or employment of any right or remedy hereunder, or otherwise, shall not, to the extent permitted by law, prevent the concurrent assertion or employment of any other appropriate right or remedy.

Section 6.11 Delay or Omission Not Waiver. No delay or omission of the Trustee or of any Holder of any Securities to exercise any right or remedy accruing upon any Event of Default shall impair any such right or remedy or constitute a waiver of any such Event of Default or acquiescence therein. Every right and remedy given by this Article or by law to the Trustee or to the Holders may be exercised from time to time, and as often as may be deemed expedient, by the Trustee or by the Holders, as the case may be.

Section 6.12 Control by Holders. Subject to Section 7.02(f), the Holders of a majority in principal amount of the outstanding Securities of any Series shall have the right to direct the time, method and place of conducting any proceeding for any remedy available to the Trustee, or exercising any trust or power conferred on the Trustee, with respect to the Securities of such Series, provided that:

(a) such direction shall not be in conflict with any rule of law or with this Indenture, expose the Trustee to personal liability or be unduly prejudicial to Holders not joining therein, and

(b) the Trustee may take any other action deemed proper by the Trustee which is not inconsistent with such direction.

Section 6.13 Waiver of Past Defaults. The Holders of not less than a majority in principal amount of the outstanding Securities of any Series may on behalf of the Holders of all the Securities of such Series waive any past Default hereunder with respect to such Series and its consequences, except a Default (i) in the payment of the principal of (or premium, if any) or interest on any Security of such Series (provided, however, that the Holders of a majority in principal amount of the outstanding Securities of any Series may rescind an acceleration and its consequences, including any related payment default that resulted from such acceleration) or (ii) in respect of a covenant or provision hereof which cannot be modified or amended without the consent of the Holder of each outstanding Security of such Series affected. Upon any such waiver, such Default shall cease to exist, and any Event of Default arising therefrom shall be deemed to have been cured, for every purpose of this Indenture; but no such waiver shall extend to any subsequent or other Default or impair any right consequent thereon.

Section 6.14 Undertaking for Costs. All parties to this Indenture agree, and each Holder of any Security by its acceptance thereof shall be deemed to have agreed, that any court may in its discretion require, in any suit for the enforcement of any right or remedy under this Indenture, or in any suit against the Trustee for any action taken, suffered or omitted by it as Trustee, the filing by any party litigant in such suit of an undertaking to pay the costs of such suit, and that such court may in its discretion assess reasonable costs, including reasonable attorneys'

fees, against any party litigant in such suit, having due regard to the merits and good faith of the claims or defenses made by such party litigant; but the provisions of this Section shall not apply to any suit instituted by the Company, to any suit instituted by the Trustee, to any suit instituted by any Holder, or group of Holders, holding in the aggregate more than 10% in principal amount of the outstanding Securities of any Series, or to any suit instituted by any Holder for the enforcement of the payment of the principal of or interest on any Security on or after the Stated Maturity or Stated Maturities expressed in such Security (or, in the case of redemption, on the redemption date).

Section 6.15 Waiver of Stay or Extension Laws. The Company covenants (to the extent it may lawfully do so) that it will not at any time insist upon, or plead, or in any manner whatsoever claim or take the benefit or advantage of, any stay or extension law wherever enacted, now or at any time hereafter in force, which may affect the covenants or the performance of this Indenture; and the Company (to the extent that it may lawfully do so) hereby expressly waives all benefit or advantage of any such law, and covenants that it will not hinder, delay or impede the execution of any power herein granted to the Trustee, but will suffer and permit the execution of every such power as though no such law had been enacted.

ARTICLE VII TRUSTEE

Section 7.01 Duties of Trustee.

(a) If an Event of Default has occurred and is continuing, the Trustee shall exercise such of the rights and powers vested in it by this Indenture, and use the same degree of care and skill in their exercise, as a prudent man would exercise or use under the circumstances in the conduct of such person's own affairs.

(b) Except during the continuance of an Event of Default:

(i) The Trustee need perform only those duties that are specifically set forth in this Indenture and no others and no implied covenants or obligations shall be read into this Indenture against the Trustee.

(ii) In the absence of bad faith on its part, the Trustee may conclusively rely and is fully protected, as to the truth of the statements and the correctness of the opinions expressed therein, upon certificates or opinions furnished to the Trustee and conforming to the requirements of this Indenture; however, in the case of any such certificates or opinions which by any provisions hereof are specifically required to be furnished to the Trustee, the Trustee shall examine such certificates and opinions to determine whether or not they conform to the requirements of this Indenture (but need not confirm or investigate the accuracy of mathematical calculations or other facts stated therein).

(c) The Trustee may not be relieved from liability for its own negligent action, its own negligent failure to act or its own willful misconduct, except that:

(i) This paragraph does not limit the effect of paragraph (b) of this Section.

(ii) The Trustee shall not be liable for any error of judgment made in good faith by a Responsible Officer, unless it is proved that the Trustee was negligent in ascertaining the pertinent facts.

(iii) The Trustee shall not be liable with respect to any action taken, suffered or omitted to be taken by it with respect to Securities of any Series in good faith in accordance with the direction of the Holders of a majority in principal amount of the outstanding Securities of such Series relating to the time, method and place of conducting any proceeding for any remedy available to the Trustee, or exercising any trust or power conferred upon the Trustee, under this Indenture with respect to the Securities of such Series.

(iv) No provision of this Indenture shall require the Trustee to expend or risk its own funds or otherwise incur any financial liability in the performance of any of its duties hereunder, or in the exercise of

any of its rights or powers, if it shall have reasonable grounds for believing that repayment of such funds or adequate indemnity against such risk or liability is not reasonably assured to it.

(d) Whether or not therein expressly so provided, every provision of this Indenture that in any way relates to the conduct or affects the liability of or affords protection to the Trustee is subject to paragraph (a), (b), (c) and (d) of this Section.

(e) The Trustee may refuse to perform any duty or exercise any right or power at the request or direction of any Holder unless it receives indemnity reasonably satisfactory to the Trustee against any loss, liability or expense.

(f) The Trustee shall not be liable for interest on any money received by it except as the Trustee may agree in writing with the Company. Money held in trust by the Trustee need not be segregated from other funds except to the extent required by law.

(g) No provision of this Indenture shall require the Trustee to risk its own funds or otherwise incur any financial liability in the performance of any of its duties, or in the exercise of any of its rights or powers, if it shall have reasonable grounds for believing that repayment of such funds or adequate indemnity against such risk is not reasonably assured to it.

(h) The rights, privileges, protections, immunities and benefits given to the Trustee, including the right to be indemnified, are extended to, and shall be enforceable by the Trustee in each of its capacities hereunder and to its agents. The provisions set forth in paragraphs (a), (b), (c) and (d) of this Section shall apply to the Trustee in each of its capacities hereunder and its agents.

Section 7.02 Rights of Trustee.

(a) The Trustee may rely on and shall be protected in acting or refraining from acting upon any document believed by it to be genuine and to have been signed or presented by the proper person. The Trustee need not investigate any fact or matter stated in the document.

(b) Before the Trustee acts or refrains from acting at the direction of the Company, it may require an Officers' Certificate. The Trustee shall not be liable for any action it takes or omits to take in good faith in reliance on such Officers' Certificate. Any request or direction of the Company mentioned herein shall be sufficiently evidenced by a Company Request or a Company Order and any resolution of the Board of Directors may be sufficiently evidenced by a Board Resolution.

(c) The Trustee may act through agents and shall not be responsible for the misconduct or negligence of any agent appointed with due care. No Depositary shall be deemed an agent of the Trustee, and the Trustee shall not be responsible for any act or omission by any Depositary.

(d) The Trustee shall not be liable for any action it takes or omits to take in good faith which it believes to be authorized or within its rights or powers, provided that the Trustee's conduct does not constitute negligence or bad faith.

(e) The Trustee may consult with counsel, and the advice of such counsel or any Opinion of Counsel shall be full and complete authorization and protection in respect of any action taken, suffered or omitted by it hereunder without negligence and in good faith and in reliance thereon.

(f) The Trustee shall be under no obligation to exercise any of the rights or powers vested in it by this Indenture at the request or direction of any of the Holders of Securities unless such Holders shall have offered to the Trustee security or indemnity reasonably satisfactory to the Trustee against the costs, expenses and liabilities which might be incurred by the Trustee in compliance with such request or direction.

(g) The Trustee shall not be bound to make any investigation into the facts or matters stated in any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order, bond, debenture, note, other evidence of indebtedness or other paper or document believed by the Trustee to be genuine and to have been signed or delivered by the proper person.

(h) The Trustee shall not be deemed to have notice of any Default or Event of Default, other than a failure by the Company to make any payment hereunder when due, unless written notice is received by a Responsible Officer of the Trustee at the Corporate Trust Office, and such notice references the Securities generally or the Securities of a particular Series and this Indenture and states that it is a notice of Default or Event of Default.

(i) The permissive rights of the Trustee enumerated herein shall not be construed as duties.

(j) In no event shall the Trustee be responsible or liable for any special, indirect, punitive, incidental or consequential loss or damage of any kind whatsoever (including, but not limited to, lost profits) irrespective of whether the Trustee has been advised of the likelihood of such loss or damage and regardless of the form of action.

(k) Neither the Trustee nor any Agent shall be responsible or liable for any failure or delay in the performance of its obligations under this Indenture arising out of or caused, directly or indirectly, by circumstances beyond its reasonable control, including, without limitation, acts of God; earthquakes; fire; flood; wars; acts of terrorism; civil or military disturbances; sabotage; epidemic; riots; interruptions, loss or malfunctions of utilities, computer (hardware or software) or communications services; accidents; labor disputes; acts of civil or military authority or governmental action; it being understood that each of the Trustee and Agents shall use commercially reasonable efforts which are consistent with accepted practices in the banking industry to resume performance as soon as reasonably practicable under the circumstances.

(l) The Trustee shall not be required to give any bond or surety in respect of the performance of its powers and duties hereunder.

(m) The Trustee may request that the Company deliver an Officers' Certificate setting forth the names of the individuals and/or titles of Officers (with specimen signatures) authorized at such times to take specific actions pursuant to this Indenture.

Section 7.03 Individual Rights of Trustee. The Trustee in its individual or any other capacity may become the owner or pledgee of Securities and may otherwise deal with the Company or an Affiliate of the Company with the same rights it would have if it were not Trustee. Any Agent may do the same with like rights. The Trustee is also subject to Sections 7.10 and 7.11.

Section 7.04 Trustee's Disclaimer. The Trustee makes no representation as to the validity or adequacy of this Indenture or the Securities, it shall not be accountable for the Company's use of the proceeds from the Securities, and it shall not be responsible for any statement in the Securities other than its authentication.

Section 7.05 Notice of Defaults. If a Default or Event of Default occurs and is continuing with respect to the Securities of any Series and if it is known to a Responsible Officer of the Trustee, the Trustee shall mail to each Holder of the Securities of that Series and, if any Bearer Securities are outstanding, publish on one occasion in an Authorized Newspaper, notice of a Default or Event of Default within 90 days after it occurs or, if later, after a Responsible Officer of the Trustee has knowledge of such Default or Event of Default. Except in the case of a Default or Event of Default in payment of principal of or interest on any Security of any Series, the Trustee may withhold the notice if and so long as it in good faith determines that withholding the notice is in the interests of Holders of that Series.

Section 7.06 Reports by Trustee to Holders. Within 60 days after May 15 in each year, the Trustee shall transmit by mail to all Holders, as their names and addresses appear on the register kept by the Registrar and, if any Bearer Securities are outstanding, publish in an Authorized Newspaper, a brief report dated as of such May 15,

in accordance with, and to the extent required under, TIA Section 313. A copy of each report at the time of its mailing to Holders of any Series shall be filed with the SEC and each stock exchange on which the Securities of that Series are listed. The Company shall promptly notify the Trustee when Securities of any Series are listed on any stock exchange.

Section 7.07 Compensation and Indemnity. The Company shall pay to the Trustee from time to time compensation for its services as the Company and the Trustee shall from time to time agree upon in writing. The Trustee's compensation shall not be limited by any law on compensation of a trustee of an express trust. The Company shall reimburse the Trustee upon request for all reasonable expenses, disbursements and advances incurred or made by the Trustee. Such expenses shall include the reasonable compensation and expenses of the Trustee's agents and counsel. The Company shall indemnify each of the Trustee and any predecessor Trustee and hold each of them harmless against any loss, liability or expense, including taxes (other than taxes based upon, measured by or determined by the income of the Trustee) incurred by it arising out of or in connection with the acceptance or administration of this trust, including the costs and expenses of defending itself against any claim or liability in connection with the exercise or performance of any of its powers or duties hereunder. This indemnification shall apply to officers, directors, employees, shareholders and agents of the Trustee. The Company need not reimburse any expense or indemnify against any loss or liability incurred by the Trustee or by any officer, director, employee, shareholder or agent of the Trustee through the negligence or bad faith of any such persons. To secure the Company's obligations in this Section, the Trustee shall have a lien prior to the Securities of any Series on all money or property held or collected by the Trustee, except that held in trust to pay principal of and interest on particular Securities of that Series. When the Trustee incurs expenses or renders services after an Event of Default specified in Section 6.01(d) or (e) occurs, the expenses and the compensation for the services are intended to constitute expenses of administration under any insolvency, bankruptcy or similar law. The provisions of this Section shall survive the resignation or removal of the Trustee and the termination of this Indenture.

Section 7.08 Replacement of Trustee. A resignation or removal of the Trustee and appointment of a successor Trustee shall become effective only upon the successor Trustee's acceptance of appointment as provided in this Section. The Trustee may resign with respect to the Securities of one or more Series by so notifying the Company at least 30 days prior to the date of the proposed resignation. The Holders of a majority in principal amount of the Securities of any Series may remove the Trustee with respect to that Series by so notifying the Trustee and the Company. The Company may remove the Trustee with respect to Securities of one or more Series if:

- (a) the Trustee fails to comply with Section 7.10;
- (b) the Trustee is adjudged bankrupt or insolvent or an order for relief is entered with respect to the Trustee under any insolvency, bankruptcy or similar law;
- (c) a custodian or public officer takes charge of the Trustee or its property; or
- (d) the Trustee becomes incapable of acting.

If the Trustee resigns or is removed or if a vacancy exists in the office of Trustee for any reason, the Company shall promptly appoint a successor Trustee.

If a successor Trustee with respect to the Securities of any one or more Series does not take office within 60 days after the retiring Trustee resigns or is removed, the retiring Trustee, the Company or the Holders of at least a majority in principal amount of the Securities of the applicable Series may petition any court of competent jurisdiction for the appointment of a successor Trustee.

If a successor trustee is appointed with respect to the Securities of one or more (but not all) series, the Issuer, the predecessor trustee and each successor trustee with respect to the Securities of any applicable series shall execute and deliver an indenture supplemental hereto which shall contain such provisions as shall be deemed necessary or desirable to confirm that all the rights, powers, trusts and duties of the predecessor trustee with respect to the Securities of any series as to which the predecessor trustee is not retiring shall continue to be vested in the predecessor trustee, and shall add to or change any of the provisions of this Indenture as shall be necessary to

provide for or facilitate the administration of the trusts hereunder by more than one trustee, it being understood that nothing herein or in such supplemental indenture shall constitute such trustees co-trustees of the same trust and that each such trustee shall be trustee of a trust or trusts under separate indentures.

No successor trustee with respect to any series of Securities shall accept appointment as provided in this Section 7.08 unless at the time of such acceptance such successor trustee shall be qualified under the provisions of Section 310(b) of the Trust Indenture Act of 1939 and eligible under the provisions of Section 310(a) of the Trust Indenture Act of 1939.

A successor Trustee shall deliver a written acceptance of its appointment to the retiring Trustee and to the Company. Immediately after that, the retiring Trustee shall transfer all property held by it as Trustee to the successor Trustee subject to the lien provided for in Section 7.07, the resignation or removal of the retiring Trustee shall become effective, and the successor Trustee shall have all the rights, powers and duties of the Trustee with respect to each Series of Securities for which it is acting as Trustee under this Indenture. A successor Trustee shall mail a notice of its succession to each Holder of each such Series and, if any Bearer Securities are outstanding, publish such notice on one occasion in an Authorized Newspaper. Notwithstanding replacement of the Trustee pursuant to this Section 7.08, the Company's obligations under Section 7.07 hereof shall continue for the benefit of the retiring Trustee with respect to expenses and liabilities incurred by it prior to the date of such replacement.

Section 7.09 Successor Trustee by Merger, etc. If the Trustee consolidates with, merges or converts into, or transfers all or substantially all of its corporate trust business (including administration of this Indenture) to, another person, the successor person without any further act shall be the successor Trustee.

Section 7.10 Eligibility; Disqualification. This Indenture shall always have a Trustee who satisfies the requirements of TIA Section 310(a)(1), (2) and (5) and has a combined capital and surplus (together with its Affiliates) of at least \$50,000,000. The Trustee shall comply with TIA Section 310(b).

Section 7.11 Preferential Collection of Claims Against Company. The Trustee is subject to TIA Section 311(a), excluding any creditor relationship listed in TIA Section 311(b). A Trustee who has resigned or been removed shall be subject to TIA Section 311(a) to the extent indicated.

ARTICLE VIII SATISFACTION AND DISCHARGE; DEFEASANCE

Section 8.01 Satisfaction and Discharge of Indenture.

This Indenture shall upon Company Order cease to be of further effect (except as hereinafter provided in this Section 8.01), and the Trustee, upon Company Request and at the expense of the Company, shall execute proper instruments acknowledging satisfaction and discharge of this Indenture, when

(a) any of the following shall have occurred:

(i) no Securities have been issued hereunder;

(ii) all Securities theretofore authenticated and delivered (other than Securities that have been destroyed, lost or stolen and that have been replaced or paid) have been delivered to the Trustee for cancellation; or

(iii) all such Securities not theretofore delivered to the Trustee for cancellation (1) have become due and payable, or (2) will become due and payable at their Stated Maturity within one year, or (3) are to be called for redemption within one year under arrangements satisfactory to the Trustee for the giving of notice of redemption by the Trustee in the name, and at the expense, of the Company;

and the Company has irrevocably deposited or caused to be deposited with the Trustee as trust funds in trust an amount sufficient for the purpose of paying and discharging the entire indebtedness on such Securities not

theretofore delivered to the Trustee for cancellation, for principal and interest to the date of such deposit (in the case of Securities which have become due and payable on or prior to the date of such deposit) or to the Stated Maturity or redemption date, as the case may be;

(b) the Company has paid or caused to be paid all other sums payable hereunder by the Company; and

(c) the Company has delivered to the Trustee an Officers' Certificate and an Opinion of Counsel, each stating that all conditions precedent herein provided for relating to the satisfaction and discharge of this Indenture have been complied with.

Notwithstanding the satisfaction and discharge of this Indenture, the obligations of the Company to the Trustee under Section 7.07 and, if money shall have been deposited with the Trustee pursuant to clause (a) of this Section, the provisions of Sections 2.04, 2.05, 2.07, 2.08, 8.01, 8.02 and 8.05 shall survive.

Section 8.02 Application of Trust Funds; Indemnification.

(a) Subject to the provisions of Section 8.05, all money deposited with the Trustee pursuant to Section 8.01, all money and U.S. Government Obligations or Foreign Government Obligations deposited with the Trustee pursuant to Section 8.03 or 8.04 and all money received by the Trustee in respect of U.S. Government Obligations or Foreign Government Obligations deposited with the Trustee pursuant to Section 8.03 or 8.04, shall be held in trust and applied by it, in accordance with the provisions of the Securities and this Indenture, to the payment, either directly or through any Paying Agent (other than the Company acting as its own Paying Agent) as the Trustee may determine, to the persons entitled thereto, of the principal and interest for whose payment such money has been deposited with or received by the Trustee or analogous payments as contemplated by Sections 8.03 or 8.04; but such money need not be segregated from other funds except to the extent required by law.

(b) The Company shall pay and shall indemnify the Trustee against any tax, fee or other charge imposed on or assessed against U.S. Government Obligations or Foreign Government Obligations deposited pursuant to Sections 8.03 or 8.04 or the interest and principal received in respect of such obligations other than any payable by or on behalf of Holders.

(c) The Trustee shall deliver or pay to the Company from time to time upon Company Request any U.S. Government Obligations or Foreign Government Obligations or money held by it as provided in Sections 8.03 or 8.04 which, in the opinion of a nationally recognized firm of independent certified public accountants expressed in a written certification thereof delivered to the Trustee, are then in excess of the amount thereof which then would have been required to be deposited for the purpose for which such U.S. Government Obligations or Foreign Government Obligations or money were deposited or received. This provision shall not authorize the sale by the Trustee of any U.S. Government Obligations or Foreign Government Obligations held under this Indenture.

(d) Notwithstanding anything to the contrary herein, if the Trustee cannot reasonably deal with such Foreign Government Obligations, upon notification by the Trustee of such inability, the Company shall appoint a Paying Agent with respect to such Foreign Government Obligations. The Trustee shall have no duty to supervise, and shall in no event be liable for, the acts or omissions of such Paying Agent.

Section 8.03 Legal Defeasance of Securities of any Series. Unless this Section 8.03 is otherwise specified, pursuant to Section 2.02(s), to be inapplicable to Securities of any Series, the Company shall be deemed to have paid and discharged the entire indebtedness on all the outstanding Securities of any Series on the 91st day after the date of the deposit referred to in subparagraph (d) hereof, and the provisions of this Indenture, as it relates to such outstanding Securities of such Series, shall no longer be in effect (and the Trustee, at the expense of the Company, shall, at Company Request, execute proper instruments acknowledging the same), except as to:

(a) the rights of Holders of Securities of such Series to receive, from the trust funds described in subparagraph (d) hereof, (i) payment of the principal of (and premium, if any) and each installment of principal of and interest on the outstanding Securities of such Series on the Stated Maturity of such principal or installment of principal (and premium, if any) or interest, and (ii) the benefit of any mandatory sinking fund payments applicable to the Securities of such Series on the day on which such payments are due and payable in accordance with the terms of this Indenture and the Securities of such Series; and

(b) the provisions of Sections 2.04, 2.05, 2.07, 2.08, 8.02, 8.03 and 8.05; and

(c) the rights and immunities of the Trustee hereunder;

provided that, the following conditions shall have been satisfied:

(i) with reference to this Section 8.03, the Company shall have deposited or caused to be irrevocably deposited (except as provided in Section 8.02(c)) with the Trustee as trust funds in trust for the purpose of making the following payments, specifically pledged as security for and dedicated solely to the benefit of the Holders of such Securities (i) in the case of Securities of such Series denominated in Dollars, cash in Dollars and/or U.S. Government Obligations, or (ii) subject to Section 8.02(d) herein, in the case of Securities of such Series denominated in a Foreign Currency (other than a composite currency), money and/or Foreign Government Obligations, which through the payment of interest and principal (and premium, if any) in respect thereof in accordance with their terms, will provide (and without reinvestment and assuming no tax liability will be imposed on such Trustee), not later than one day before the due date of any payment of money, an amount in cash, sufficient, in the opinion of a nationally recognized firm of independent public accountants expressed in a written certification thereof delivered to the Trustee, to pay and discharge each installment of principal of and interest, if any, on and any mandatory sinking fund payments in respect of all the Securities of such Series on the dates such installments of interest or principal (and premium, if any) and such sinking fund payments are due;

(ii) such deposit will not result in a breach or violation of, or constitute a default under, this Indenture or any other agreement or instrument to which the Company is a party or by which it is bound;

(iii) no Default or Event of Default with respect to the Securities of such Series shall have occurred and be continuing on the date of such deposit or during the period ending on the 91st day after such date;

(iv) the Company shall have delivered to the Trustee an Officers' Certificate and an Opinion of Counsel to the effect that (i) the Company has received from, or there has been published by, the Internal Revenue Service a ruling, or (ii) since the date of execution of this Indenture, there has been a change in the applicable Federal income tax law, in either case to the effect that, and based thereon such Opinion of Counsel shall confirm that, the Holders of the Securities of such Series will not recognize income, gain or loss for Federal income tax purposes as a result of such deposit, defeasance and discharge and will be subject to Federal income tax on the same amounts and in the same manner and at the same times as would have been the case if such deposit, defeasance and discharge had not occurred;

(v) the Company shall have delivered to the Trustee an Officers' Certificate stating that the deposit was not made by the Company with the intent of preferring the Holders of the Securities of such Series over any other creditors of the Company or with the intent of defeating, hindering, delaying or defrauding any other creditors of the Company;

(vi) the Company shall have delivered to the Trustee an Officers' Certificate and an Opinion of Counsel, each stating that all conditions precedent provided for relating to the defeasance contemplated by this Section have been complied with; and

(vii) such defeasance shall not result in the trust arising from such deposit constituting an investment company within the meaning of the Investment Company Act of 1940, as amended, unless such trust shall be registered under such Act or exempt from registration thereunder.

Section 8.04 Covenant Defeasance. Unless this Section 8.04 is otherwise specified, pursuant to Section 2.02(s), to be inapplicable to Securities of any Series, on and after the 91st day after the date of the deposit referred to in subparagraph (a) hereof, the Company may omit to comply with respect to the Securities of any Series with any term, provision or condition set forth under Sections 4.02, 4.03, and 5.01 as well as any additional covenants specified in a supplemental indenture for such Series of Securities or a Board Resolution or an Officers' Certificate delivered pursuant to Section 2.02 (and the failure to comply with any such covenants shall not constitute a Default or Event of Default with respect to such Series under Section 6.01) and the occurrence of any event specified in a supplemental indenture for such Series of Securities or a Board Resolution or an Officers' Certificate delivered pursuant to Section 2.02 and designated as an Event of Default shall not constitute a Default or Event of Default hereunder, with respect to the Securities of such Series, provided that the following conditions shall have been satisfied:

(a) with reference to this Section 8.04, the Company has deposited or caused to be irrevocably deposited (except as provided in Section 8.02(c)) with the Trustee as trust funds in trust for the purpose of making the following payments specifically pledged as security for, and dedicated solely to, the benefit of the Holders of such Securities (i) in the case of Securities of such Series denominated in Dollars, cash in Dollars and/or U.S. Government Obligations, or (ii) in the case of Securities of such Series denominated in a Foreign Currency (other than a composite currency), money and/or, subject to Section 8.02(d) herein, Foreign Government Obligations, which through the payment of interest and principal (and premium, if any) in respect thereof in accordance with their terms, will provide (and without reinvestment and assuming no tax liability will be imposed on such Trustee), not later than one day before the due date of any payment of money, an amount in cash, sufficient, in the opinion of a nationally recognized firm of independent certified public accountants expressed in a written certification thereof delivered to the Trustee, to pay and discharge each installment of principal (and premium, if any) of and interest, if any, on and any mandatory sinking fund payments in respect of the Securities of such Series on the dates such installments of interest or principal (and premium, if any) and such sinking fund payments are due;

(b) such deposit will not result in a breach or violation of, or constitute a default under, this Indenture or any other agreement or instrument to which the Company is a party or by which it is bound;

(c) no Default or Event of Default with respect to the Securities of such Series shall have occurred and be continuing on the date of such deposit or during the period ending on the 91st day after such date;

(d) the Company shall have delivered to the Trustee an Opinion of Counsel to the effect that Holders of the Securities of such Series will not recognize income, gain or loss for federal income tax purposes as a result of such deposit and covenant defeasance and will be subject to federal income tax on the same amounts, in the same manner and at the same times as would have been the case if such deposit and covenant defeasance had not occurred;

(e) the Company shall have delivered to the Trustee an Officers' Certificate and an Opinion of Counsel, each stating that all conditions precedent herein provided for relating to the covenant defeasance contemplated by this Section have been complied with; and

(f) Such defeasance shall not result in the trust arising from such deposit constituting an investment company within the meaning of the Investment Company Act of 1940, as amended, unless such trust shall be registered under such Act or exempt from registration thereunder.

Section 8.05 Repayment to Company. The Trustee and the Paying Agent shall pay to the Company, upon Company Request, any money held by them for the payment of principal (and premium, if any) and interest that remains unclaimed for two years, and after such time, Holders entitled to the money must look to the Company for payment as general creditors unless an applicable abandoned property law designates another person.

Section 8.06 Section 8. 06 Reinstatement. If the Trustee or the Paying Agent is unable to apply any money deposited with respect to Securities of any series in accordance with Section 8.01 by reason of any legal proceeding or by reason of any order or judgment of any court or governmental authority enjoining, restraining or otherwise prohibiting such application, the obligations of the Company under this Indenture with respect to the Securities of such series and under the Securities of such series shall be revived and reinstated as though no deposit had occurred pursuant to Section 8.01 until such time as the Trustee or the Paying Agent is permitted to apply all such money in accordance with Section 8.01; provided, however, that if the Company has made any payment of principal of, premium (if any) or interest on any Additional Amounts with respect to any Securities because of the reinstatement of its obligations, the Company shall be subrogated to the rights of the Holders of such Securities to receive such payment from the money held by the Trustee or the Paying Agent; provided, however, that the Trustee shall not be responsible for monitoring or enforcing the accuracy of sufficiency of such Additional Amounts. The Company shall provide the Trustee and Paying Agent with an Officers' Certificate describing any Additional Amounts to be included in any payment.

ARTICLE IX AMENDMENTS AND WAIVERS

Section 9.01 Without Consent of Holders. The Company and the Trustee may amend or supplement this Indenture or the Securities of one or more Series without the consent of any Holder:

(a) to evidence the succession of another person to the Company under this Indenture and the Securities and the assumption by any such successor person of the obligations of the Company hereunder and under the Securities;

(b) to add or remove covenants of the Company for the benefit of the Holders of all or any Series of Securities (and if such covenants are to be for the benefit of less than all Series of Securities, stating that such covenants are expressly being included for the benefit of such Series) or to surrender any right or power herein conferred upon the Company provided such action does not adversely affect the interests of the Holders;

(c) to add any additional Events of Default;

(d) to add to or change any of the provisions of this Indenture to such extent as shall be necessary to permit or facilitate the issuance of Securities in bearer form, registrable or not registrable as to principal, and with or without interest coupons, or to permit or facilitate the issuance of Securities in uncertificated form;

(e) to add to, change or eliminate any of the provisions of this Indenture in respect of one or more Series of Securities, provided that any such addition, change or elimination (A) shall neither (i) apply to any Security of any Series created prior to the execution of such supplemental indenture and entitled to the benefit of such provision nor (ii) modify the rights of the Holder of any such Security with respect to such provision or (B) shall become effective only when there is no such Security Outstanding;

(f) to establish the forms or terms of the Securities of any Series issued pursuant to the terms hereof;

(g) to cure any ambiguity or correct any inconsistency in this Indenture;

(h) to evidence and provide for the acceptance of appointment hereunder by a successor Trustee with respect to the Securities of one or more Series and to add to or change any of the provisions of this Indenture as shall be necessary to provide for or facilitate the administration of the trusts hereunder by more than one Trustee;

(i) to qualify this Indenture under the Trust Indenture Act;

(j) to provide for uncertificated Securities in addition to certificated Securities;

(k) [Reserved]; and

(l) to comply with the rules or regulations of any securities exchange or automated quotation system on which any of the Securities may be listed or traded.

Section 9.02 With Consent of Holders. The Company and the Trustee may enter into a supplemental indenture with the written consent of the Holders of at least a majority in principal amount of the outstanding Securities of each Series affected by such supplemental indenture (including consents obtained in connection with a tender offer or exchange offer for the Securities of such Series), for the purpose of adding any provisions to or changing in any manner or eliminating any of the provisions of this Indenture or of any supplemental indenture or of modifying in any manner the rights of the Holders of each such Series. Except as provided in Section 6.13, the Holders of at least a majority in principal amount of the outstanding Securities of any Series by notice to the Trustee (including consents obtained in connection with a tender offer or exchange offer for the Securities of such Series) may waive compliance by the Company with any provision of this Indenture or the Securities with respect to such Series. It shall not be necessary for the consent of the Holders of Securities under this Section 9.02 to approve the particular form of any proposed supplemental indenture or waiver, but it shall be sufficient if such consent approves the substance thereof. After a supplemental indenture or waiver under this section becomes effective, the Company shall mail to the Holders of Securities affected thereby and, if any Bearer Securities affected thereby are outstanding, publish on one occasion in an Authorized Newspaper, a notice briefly describing the supplemental indenture or waiver. Any failure by the Company to mail or publish such notice, or any defect therein, shall not, however, in any way impair or affect the validity of any such supplemental indenture or waiver.

Section 9.03 Limitations. Without the consent of each Holder affected, an amendment or waiver may not:

(a) reduce the amount of Securities whose Holders must consent to an amendment, supplement or waiver;

(b) reduce the rate of or extend the time for payment of interest (including default interest) on any Security;

(c) reduce the principal or change the Stated Maturity of any Security or reduce the amount of, or postpone the date fixed for, the payment of any sinking fund;

(d) reduce the principal amount of Discount Securities payable upon acceleration of the maturity thereof;

(e) waive a Default or Event of Default in the payment of the principal of (or premium, if any) or interest, if any, on any Security (except a rescission of acceleration of the Securities of any Series by the Holders of at least a majority in principal amount of the outstanding Securities of such Series and a waiver of the payment default that resulted from such acceleration);

(f) make the principal of or interest, if any, on any Security payable in any currency other than that stated in the Security;

(g) make any change in Sections 6.08, 6.13, or 9.03; or

(h) waive a redemption payment with respect to any Security.

Section 9.04 Compliance with Trust Indenture Act. Every amendment to this Indenture or the Securities of one or more Series shall be set forth in a supplemental indenture hereto that complies with the TIA as then in effect.

Section 9.05 Revocation and Effect of Consents. Until an amendment is set forth in a supplemental indenture or a waiver becomes effective, a consent to it by a Holder of a Security is a continuing consent by the Holder and every subsequent Holder of a Security or portion of a Security that evidences the same debt as the consenting Holder's Security, even if notation of the consent is not made on any Security. However, any such Holder or subsequent Holder may revoke the consent as to his Security or portion of a Security if the Trustee receives the notice of revocation before the date of the supplemental indenture or the date the waiver becomes effective. Any amendment or waiver once effective shall bind every Holder of each Series affected by such amendment or waiver unless it is of the type described in any of clauses (a) through (h) of Section 9.03. In that case, the amendment or waiver shall bind each Holder of a Security who has consented to it and every subsequent Holder of a Security or portion of a Security that evidences the same debt as the consenting Holder's Security.

Section 9.06 Notation on or Exchange of Securities. The Trustee may place an appropriate notation about an amendment or waiver on any Security of any Series thereafter authenticated. The Company in exchange for Securities of that Series may issue and execute and the Trustee shall authenticate, upon Company Order, new Securities of that Series that reflect the amendment or waiver.

Section 9.07 Trustee Protected. In executing, or accepting the additional trusts created by, any supplemental indenture permitted by this Article or the modifications thereby of the trusts created by this Indenture, the Trustee shall receive, in addition to the documents required by Section 10.04, and (subject to Section 7.01) shall be fully protected in relying upon, an Opinion of Counsel stating that all conditions precedent in this Indenture to the execution of such supplemental indenture, under this Indenture, have been complied with, such supplemental indenture is authorized under this Indenture, and, such supplemental indenture is the valid and legally binding obligation of the Company. The Trustee may, but shall not be obligated to, sign any supplemental indenture that affects the Trustee's own rights, duties, powers, liabilities or immunities under this Indenture or otherwise.

ARTICLE X MISCELLANEOUS

Section 10.01 Trust Indenture Act Controls. If any provision of this Indenture limits, qualifies or conflicts with another provision which is required or deemed to be included in this Indenture by the TIA, such required or deemed provision shall control.

Section 10.02 Notices.

(a) Any notice or communication by the Company or the Trustee to the other, or by a Holder to the Company or the Trustee, is duly given if in writing and delivered in person or mailed by first-class mail or sent by facsimile addressed as follows:

if to the Company:

BioAmber Inc.
1250 Rene Levesque West, Suite 4110
Montreal, Quebec
Canada H3B 4W8
Attn: Chief Financial Officer
Fax: 514-844-1414

With a copy to:

Goodwin Procter LLP
Exchange Place
Boston, MA 02109
Attn: Jocelyn M. Arel and Michael J. Minahan
Fax: 617-523-1231

if to the Trustee:

(b) The Company or the Trustee by notice to the other may designate additional or different addresses for subsequent notices or communications. Any notice or communication to a Holder shall be mailed by first-class mail to its address shown on the register kept by the Registrar and, if any Bearer Securities are outstanding, published in an Authorized Newspaper. Failure to mail a notice or communication to a Holder of any Series or any defect in it shall not affect its sufficiency with respect to other Holders of that or any other Series. If a notice or communication is mailed or published in the manner provided above, within the time prescribed, it is duly given, whether or not the Holder receives it. If the Company mails a notice or communication to Holders, it shall mail a copy to the Trustee and each Agent at the same time.

(c) Unless otherwise provided in this Indenture, any notice or demand that by any provision of this Indenture is required or permitted to be given or served by the Company may, upon Company Request received by the Trustee not fewer than ten (10) Business Days prior (or such shorter period of time as may be acceptable to the Trustee) to the date on which such notice must be given or served, be given or served by the Trustee in the name of and at the expense of the Company.

Section 10.03 Communication by Holders with Other Holders. Holders of any Series may communicate pursuant to TIA Section 312(b) with other Holders of that Series or any other Series with respect to their rights under this Indenture or the Securities of that Series or all Series. The Company, the Trustee, the Registrar and anyone else shall have the protection of TIA Section 312(c).

Section 10.04 Certificate and Opinion as to Conditions Precedent. Upon any request or application by the Company to the Trustee to take any action under this Indenture, the Company shall furnish to the Trustee:

(a) an Officers' Certificate (which shall include the statements set forth in Section 10.05 hereof) stating that, in the opinion of the signers, all conditions precedent, if any, provided for in this Indenture relating to the proposed action have been complied with; and

(b) an Opinion of Counsel (which shall include the statements set forth in Section 10.05 hereof) stating that, in the opinion of such counsel, all such conditions precedent have been complied with.

Section 10.05 Statements Required in Certificate or Opinion. Each certificate or opinion with respect to compliance with a condition or covenant provided for in this Indenture (other than a certificate provided pursuant to TIA Section 314(a)(4)) shall comply with the provisions of TIA Section 314(e) and shall include:

(a) a statement that the person making such certificate or opinion has read such covenant or condition and the definitions relating thereto;

(b) a brief statement as to the nature and scope of the examination or investigation upon which the statements or opinions contained in such certificate or opinion are based;

(c) a statement that, in the opinion of such person, he has made such examination or investigation as is necessary to enable him to express an informed opinion as to whether or not such covenant or condition has been complied with; and

(d) a statement as to whether or not, in the opinion of such person, such condition or covenant has been complied with.

Section 10.06 Rules by Trustee and Agents. The Trustee may make reasonable rules for action by or a meeting of Holders of one or more Series. Any Agent may make reasonable rules and set reasonable requirements for its functions.

Section 10.07 Legal Holidays. Unless otherwise provided by Board Resolution, Officers' Certificate or supplemental indenture hereto for a particular Series, a "Legal Holiday" is any day that is not a Business Day. If a payment date is a Legal Holiday at a place of payment, payment may be made at that place on the next succeeding day that is not a Legal Holiday, and no interest shall accrue for the intervening period.

Section 10.08 No Recourse Against Others. A director, officer, employee or stockholder, as such, of the Company shall not have any liability for any obligations of the Company under the Securities or the Indenture or for any claim based on, in respect of or by reason of such obligations or their creation. Each Holder by accepting a Security waives and releases all such liability. The waiver and release are part of the consideration for the issue of the Securities.

Section 10.09 Counterparts. This Indenture may be executed in any number of counterparts and by the parties hereto in separate counterparts, each of which when so executed shall be deemed to be an original and all of which taken together shall constitute one and the same agreement. The exchange of copies of this Indenture and of signature pages by facsimile or PDF transmission shall constitute effective execution and delivery of this Indenture as to the parties hereto and may be used in lieu of the original Indenture for all purposes. Signatures of the parties hereto transmitted by facsimile or PDF shall be deemed to be their original signatures for all purposes.

Section 10.10 Governing Laws. This Indenture and the Securities will be governed by, and construed in accordance with, the internal laws of the State of New York, without regard to conflict of law principles that would result in the application of any law other than the laws of the State of New York.

Section 10.11 No Adverse Interpretation of Other Agreements. This Indenture may not be used to interpret another indenture, loan or debt agreement of the Company or a Subsidiary of the Company. Any such indenture, loan or debt agreement may not be used to interpret this Indenture.

Section 10.12 Successors. All agreements of the Company in this Indenture and the Securities shall bind its successor. All agreements of the Trustee in this Indenture shall bind its successor.

Section 10.13 Severability. In case any provision in this Indenture or in the Securities shall be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

Section 10.14 Table of Contents, Headings, Etc. The Table of Contents, Cross-Reference Table, and headings of the Articles and Sections of this Indenture have been inserted for convenience of reference only, are not to be considered a part hereof, and shall in no way modify or restrict any of the terms or provisions hereof.

Section 10.15 Securities in a Foreign Currency. Unless otherwise specified in a Board Resolution, a supplemental indenture hereto or an Officers' Certificate delivered pursuant to Section 2.02 of this Indenture with respect to a particular Series of Securities, whenever for purposes of this Indenture any action may be taken by the Holders of a specified percentage in aggregate principal amount of Securities of all Series or all Series affected by a particular action at the time outstanding and, at such time, there are outstanding Securities of any Series which are denominated in a coin or currency other than Dollars, then the principal amount of Securities of such Series which shall be deemed to be outstanding for the purpose of taking such action shall be that amount of Dollars that could be obtained for such amount at the Market Exchange Rate at such time. For purposes of this Section 10.15, "Market Exchange Rate" shall mean the noon Dollar buying rate in New York City for cable transfers of that currency as published by the Federal Reserve Bank of New York. If such Market Exchange Rate is not available for any reason with respect to such currency, the Company shall use, in its sole discretion and without liability on its part, such quotation of the Federal Reserve Bank of New York as of the most recent available date, or quotations from one or more major banks in The City of New York or in the country of issue of the currency in question or such other quotations as the Company, shall deem appropriate. The provisions of this paragraph shall apply in determining the

equivalent principal amount in respect of Securities of a Series denominated in currency other than Dollars in connection with any action taken by Holders of Securities pursuant to the terms of this Indenture. All decisions and determinations of the Company regarding the Market Exchange Rate or any alternative determination provided for in the preceding paragraph shall be in its sole discretion and shall, in the absence of manifest error, to the extent permitted by law, be conclusive for all purposes and irrevocably binding upon the Company, the Trustee and all Holders. The Trustee shall be fully justified and protected and shall incur no liability in relying and acting upon information received by it from the Company and shall not otherwise have any duty or obligation to determine the accuracy or validity of such information independent of the Company. Notwithstanding anything to the contrary herein, if the Trustee cannot reasonably process a payment in a Foreign Currency, upon notification by the Trustee of such inability, the Company shall appoint a Paying Agent for such payment in Foreign Currency. The Trustee shall have no duty to supervise, and shall in no event be liable for, the acts or omissions of such Paying Agent.

Section 10.16 Judgment Currency. The Company agrees, to the fullest extent that it may effectively do so under applicable law, that (a) if for the purpose of obtaining judgment in any court it is necessary to convert the sum due in respect of the principal of or interest or other amount on the Securities of any Series (the “*Required Currency*”) into a currency in which a judgment will be rendered (the “*Judgment Currency*”), the rate of exchange used shall be the rate at which in accordance with normal banking procedures the Company could purchase in The City of New York the Required Currency with the Judgment Currency on the day on which final unappealable judgment is entered, unless such day is not a New York Banking Day, then the rate of exchange used shall be the rate at which in accordance with normal banking procedures the Company could purchase in The City of New York the Required Currency with the Judgment Currency on the New York Banking Day preceding the day on which final unappealable judgment is entered and (b) its obligations under this Indenture to make payments in the Required Currency (i) shall not be discharged or satisfied by any tender, any recovery pursuant to any judgment (whether or not entered in accordance with subsection (a)), in any currency other than the Required Currency, except to the extent that such tender or recovery shall result in the actual receipt, by the payee, of the full amount of the Required Currency expressed to be payable in respect of such payments, (ii) shall be enforceable as an alternative or additional cause of action for the purpose of recovering in the Required Currency the amount, if any, by which such actual receipt shall fall short of the full amount of the Required Currency so expressed to be payable, and (iii) shall not be affected by judgment being obtained for any other sum due under this Indenture. For purposes of the foregoing, “*New York Banking Day*” means any day except a Saturday, Sunday or a legal holiday in The City of New York on which banking institutions are authorized or required by law, regulation or executive order to close.

Section 10.17 U.S.A. Patriot Act. The Company acknowledges that in accordance with Section 326 of the U.S.A. Patriot Act, the Trustee, like all financial institutions, and in order to help fight the funding of terrorism and money laundering, is required to obtain, verify, and record information that identifies each person or legal entity that establishes a relationship or opens an account with the Trustee. The Company agrees that it will provide the Trustee with such information as it may reasonably request as required in order for the Trustee to satisfy the requirements of the U.S.A. Patriot Act.

Section 10.18 Waiver of Jury Trial. EACH OF THE COMPANY AND THE TRUSTEE HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING AS BETWEEN THE COMPANY AND THE TRUSTEE ONLY ARISING OUT OF OR RELATING TO THIS INDENTURE OR THE SECURITIES.

ARTICLE XI SINKING FUNDS

Section 11.01 Applicability of Article. The provisions of this Article shall be applicable to any sinking fund for the retirement of the Securities of a Series, except as otherwise permitted or required by any form of Security of such Series issued pursuant to this Indenture. The minimum amount of any sinking fund payment provided for by the terms of the Securities of any Series is herein referred to as a “*mandatory sinking fund payment*” and any other amount provided for by the terms of Securities of such Series is herein referred to as an “*optional sinking fund payment*.” If provided for by the terms of Securities of any Series, the cash amount of any sinking fund payment may be subject to reduction as provided in Section 11.02. Each sinking fund payment shall be applied to the redemption of Securities of any Series as provided for by the terms of the Securities of such Series.

Section 11.02 Satisfaction of Sinking Fund Payments with Securities. The Company may, in satisfaction of all or any part of any sinking fund payment with respect to the Securities of any Series to be made pursuant to the terms of such Securities (1) deliver outstanding Securities of such Series to which such sinking fund payment is applicable (other than any of such Securities previously called for mandatory sinking fund redemption) and (2) apply as credit Securities of such Series to which such sinking fund payment is applicable and which have been repurchased by the Company or redeemed either at the election of the Company pursuant to the terms of such Series of Securities (except pursuant to any mandatory sinking fund) or through the application of permitted optional sinking fund payments or other optional redemptions pursuant to the terms of such Securities, provided that such Securities have not been previously so credited. Such Securities shall be received by the Trustee, together with an Officers' Certificate with respect thereto, not later than 15 days prior to the date on which the Trustee begins the process of selecting Securities for redemption, and shall be credited for such purpose by the Trustee at the price specified in such Securities for redemption through operation of the sinking fund and the amount of such sinking fund payment shall be reduced accordingly. If as a result of the delivery or credit of Securities in lieu of cash payments pursuant to this Section 11.02, the principal amount of Securities of such Series to be redeemed in order to exhaust the aforesaid cash payment shall be less than \$100,000, the Trustee need not call Securities of such Series for redemption, except upon receipt of a Company Order that such action be taken, and such cash payment shall be held by the Trustee or a Paying Agent and applied to the next succeeding sinking fund payment, provided, however, that the Trustee or such Paying Agent shall from time to time upon receipt of a Company Order pay over and deliver to the Company any cash payment so being held by the Trustee or such Paying Agent upon delivery by the Company to the Trustee of Securities of that Series purchased by the Company having an unpaid principal amount equal to the cash payment required to be released to the Company.

Section 11.03 Redemption of Securities for Sinking Fund. Not less than 45 days prior to each sinking fund payment date for any Series of Securities, the Company will deliver to the Trustee an Officers' Certificate specifying the amount of the next ensuing mandatory sinking fund payment for that Series pursuant to the terms of that Series, the portion thereof, if any, which is to be satisfied by payment of cash and the portion thereof, if any, which is to be satisfied by delivering and crediting of Securities of that Series pursuant to Section 11.02, and the optional amount, if any, to be added in cash to the next ensuing mandatory sinking fund payment, and the Company shall thereupon be obligated to pay the amount therein specified. Not less than 30 days (unless otherwise indicated in the Board Resolution, Officers' Certificate or supplemental indenture in respect of a particular Series of Securities) before each such sinking fund payment date the Trustee shall select the Securities to be redeemed upon such sinking fund payment date in the manner specified in Section 3.02 and cause notice of the redemption thereof to be given in the name of and at the expense of the Company in the manner provided in Section 3.03. Such notice having been duly given, the redemption of such Securities shall be made upon the terms and in the manner stated in Sections 3.04, 3.05 and 3.06. Prior to any sinking fund payment date, the Company shall pay to the Trustee or a Paying Agent (or, if the Company is acting as its own Paying Agent, segregate and hold in trust) in cash a sum equal to any interest that will accrue to the date fixed for redemption of Securities or portions thereof to be redeemed on such sinking fund payment date pursuant to this Section.

[Remainder of page intentionally left blank]

IN WITNESS WHEREOF, the parties hereto have caused this Indenture to be duly executed and attested, all as of the day and year first above written.

BIOAMBER INC.

By: _____
Name:
Title:

COMPUTERSHARE TRUST COMPANY, N.A., as Trustee

By: _____
Name:
Title:

[Signature Page to Indenture]

SUBORDINATED INDENTURE

BIOAMBER INC.

ISSUER

and

TRUSTEE

Dated as of

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BIOAMBER INC.
Reconciliation and tie between Trust Indenture Act of 1939 and
Indenture, dated as of

Section 310 (a)(1)	7.10
(a)(2)	7.10
(a)(3)	NOT APPLICABLE
(a)(4)	NOT APPLICABLE
(a)(5)	7.10
(b)	7.10
Section 311 (a)	7.11
(b)	7.11
(c)	NOT APPLICABLE
Section 312 (a)	2.06
(b)	10.03
(c)	10.03
Section 313 (a)	7.06
(b)(1)	7.06
(b)(2)	7.06
(c)(1)	7.06
(d)	7.06
Section 314 (a)	4.02, 10.05
(b)	NOT APPLICABLE
(c)(1)	10.04
(c)(2)	10.04
(c)(3)	NOT APPLICABLE
(d)	NOT APPLICABLE
(e)	10.05
(f)	NOT APPLICABLE
Section 315 (a)	7.01
(b)	7.05
(c)	7.01
(d)	7.01
(e)	6.14
Section 316 (a)	2.10
(a)(1)(a)	6.12
(a)(1)(b)	6.13
(b)	6.08
Section 317 (a)(1)	6.03
(a)(2)	6.04
(b)	2.05
Section 318 (a)	10.01

Subordinated Indenture dated as of between BioAmber Inc., a Delaware corporation (“*Company*”), and _____, _____, as trustee (“*Trustee*”).

Each party agrees as follows for the benefit of the other party and for the equal and ratable benefit of the Holders of the Securities issued under this Indenture.

ARTICLE I
DEFINITIONS AND INCORPORATION BY REFERENCE

Section 1.01 Definitions

“*Additional Amounts*” means any additional amounts which are required hereby or by any Security, under circumstances specified herein or therein, to be paid by the Company in respect of certain taxes imposed on Holders specified herein or therein and which are owing to such Holders.

“*Affiliate*” of any specified person means any other person directly or indirectly controlling or controlled by or under direct or indirect common control with such specified person. For the purposes of this definition, “control” (including, with correlative meanings, the terms “controlled by” and “under common control with”), as used with respect to any person, shall mean the possession, directly or indirectly, of the power to direct or cause the direction of the management or policies of such person, whether through the ownership of voting securities or by agreement or otherwise.

“*Agent*” means any Registrar, Paying Agent or Service Agent.

“*Applicable Procedures*” means, with respect to any transfer or transaction involving a Global Security or beneficial interest therein, the rules and procedures of DTC or any successor Depository, in each case to the extent applicable to such transaction and as in effect from time to time.

“*Authorized Newspaper*” means a newspaper in an official language of the country of publication customarily published at least once a day for at least five days in each calendar week and of general circulation in the place in connection with which the term is used.

“*Bearer*” means anyone in possession from time to time of a Bearer Security.

“*Bearer Security*” means any Security, including any interest coupon appertaining thereto, that does not provide for the identification of the Holder thereof.

“*Board of Directors*” means the Board of Directors of the Company or any duly authorized committee thereof.

“*Board Resolution*” means a copy of a resolution certified by the Secretary or an Assistant Secretary of the Company to have been adopted by the Board of Directors or pursuant to authorization by the Board of Directors and to be in full force and effect on the date of the certificate and delivered to the Trustee.

“*Business Day*” means any day other than a Saturday, Sunday or other day on which banking institutions are authorized or required by law, regulation or executive order to close or be closed in the State of New York, the State of Colorado or in the City of the Corporate Trust Office.

“*Capital Interests*” means any and all shares, interests, participations, rights or other equivalents (however designated) of capital stock, including, without limitation, with respect to partnerships, partnership interests (whether general or limited) and any other interest or participation that confers on a person the right to receive a share of the profits and losses of, or distributions of assets of, such partnership.

“*Company*” means the party named as such above until a successor replaces it and thereafter means the successor.

“*Company Order*” means a written order signed in the name of the Company by two Officers, and delivered to the Trustee.

“*Company Request*” means a written request signed in the name of the Company by its Chief Executive Officer, Chief Financial Officer or a Vice President, and by its Treasurer, an Assistant Treasurer, its Secretary or an Assistant Secretary, and delivered to the Trustee.

“*Corporate Trust Office*” means the address of the Trustee specified in Section 10.02, or such other address as to which the Trustee may give notice to the Holders and the Company.

“*Default*” means any event which is, or after notice or passage of time or both would be, an Event of Default.

“*Depository*” means, with respect to the Securities of any Series issuable or issued in whole or part in the form of one or more Global Securities, the person designated as Depository for such Series by the Company, which Depository shall be a clearing agency registered under the Exchange Act; and if at any time there is more than one such person, “*Depository*” as used with respect to the Securities of any Series shall mean the Depository with respect to the Securities of such Series.

“*Discount Security*” means any Security that provides for an amount less than the stated principal amount thereof to be due and payable upon declaration of acceleration of the maturity thereof pursuant to Section 6.02.

“*Dollars*” and “\$” means the currency of The United States of America.

“*DTC*” means The Depository Trust Company, a New York corporation.

“*Exchange Act*” means the Securities Exchange Act of 1934, as amended, and the rules and regulations promulgated thereunder.

“*Foreign Currency*” means any currency or currency unit issued by a government other than the government of The United States of America.

“*Foreign Government Obligations*” means, with respect to Securities of any Series that are denominated in a Foreign Currency, (i) direct obligations of the government that issued or caused to be issued such currency for the payment of which obligations its full faith and credit is pledged or (ii) obligations of a person controlled or supervised by or acting as an agency or instrumentality of such government the timely payment of which is unconditionally guaranteed as a full faith and credit obligation by such government, which, in either case under clauses (i) or (ii), are not callable or redeemable at the option of the issuer thereof.

“*GAAP*” means generally accepted accounting principles set forth in the opinions and pronouncements of the Accounting Principles Board of the American Standards Board or in such other statements by such other entity as have been approved by a significant segment of the accounting profession.

“*Global Security*” or “*Global Securities*” means a Security or Securities, as the case may be, in the form established pursuant to Section 2.02 evidencing all or part of a Series of Securities, issued to the Depository for such Series or its nominee, and registered in the name of such Depository or nominee.

“*Holder*” means a person in whose name a Security is registered in the records of the Registrar or the Bearer of a Bearer Security.

“*Indenture*” means this Indenture as amended or supplemented from time to time and shall include the form and terms of particular Series of Securities established as contemplated hereunder.

“*interest*” with respect to any Discount Security which by its terms bears interest only after Maturity means interest payable after Maturity.

“*Maturity*,” when used with respect to any Security or installment of principal thereof, means the date on which the principal of such Security or such installment of principal becomes due and payable as therein or herein provided, whether at the Stated Maturity or by declaration of acceleration, call for redemption or otherwise.

“*Officer*” means the Chief Executive Officer, Chief Financial Officer, any Vice-President, the Treasurer, the Secretary, any Assistant Treasurer or any Assistant Secretary of the Company.

“*Officers’ Certificate*” means a certificate signed by two Officers, and delivered to the Trustee.

“*Opinion of Counsel*” means a written opinion of legal counsel who is reasonably acceptable to the Trustee. The counsel may be an employee of or counsel to the Company.

“*person*” means any individual, corporation, partnership, joint venture, association, limited liability company, joint-stock company, trust, unincorporated organization or government or any agency or political subdivision thereof.

“*principal*” of a Security means the principal of the Security plus, when appropriate, the premium, if any, on, and any Additional Amounts in respect of, the Security.

“*Responsible Officer*” means any officer of the Trustee in its Corporate Trust Office with direct responsibility for the administration of this Indenture and also means, with respect to a particular corporate trust matter, any other officer to whom any corporate trust matter is referred because of his or her knowledge of and familiarity with a particular subject.

“*SEC*” means the Securities and Exchange Commission.

“*Securities*” means the debentures, notes or other debt instruments of the Company of any Series authenticated and delivered under this Indenture.

“*Senior Indebtedness*” of a Person means the principal of, premium, if any, interest on, and any other payment due pursuant to any of the following, whether outstanding at the date hereof or hereafter incurred or created:

- (a) all of the indebtedness of that Person for money borrowed;
- (b) all of the indebtedness of that Person evidenced by notes, debentures, bonds or other securities sold by that Person for money;
- (c) all of the lease obligations which are capitalized on the books of that Person in accordance with generally accepted accounting principles;
- (d) all indebtedness of others of the kinds described in either of the preceding clauses (a) or (b) above and all lease obligations of others of the kind described in the preceding clause (c) above that the Person, in any manner, assumes or guarantees or that the Person in effect guarantees through an agreement to purchase, whether that agreement is contingent or otherwise; and
- (e) all amendments, renewals, extensions or refundings of indebtedness of the kinds described in any of the preceding clauses (a), (b) and (d) and all renewals or extensions of leases of the kinds described in either of the preceding clauses (c) or (d) above;

unless, in the case of any particular indebtedness, lease, renewal, extension or refunding, the instrument or lease creating or evidencing it or the assumption or guarantee relating to it expressly provides that such indebtedness, lease, renewal, extension or refunding is not superior in right of payment to the Securities.

“*Series*” or “*Series of Securities*” means each series of debentures, notes or other debt instruments of the Company created pursuant to Sections 2.01 and 2.02 hereof.

“*Stated Maturity*” means when used with respect to any Security or any installment of principal thereof or interest thereon, the date specified in such Security as the fixed date on which the principal of such Security or such installment of principal or interest is due and payable.

“*Subsidiary*” means, with respect to any person, any corporation, association or other business entity of which more than 50% of the total voting power of shares of Capital Interests entitled (without regard to the occurrence of any contingency) to vote in the election of directors, managers or trustees thereof or, in the case of a partnership, more than 50% of the partners’ Capital Interests (considering all partners’ Capital Interests as a single class), is at the time owned or controlled, directly or indirectly, by such person or one or more of the other Subsidiaries of such person or combination thereof.

“*TIA*” means the Trust Indenture Act of 1939 (15 U.S. Code Sections 77aaa-77bbbb) as in effect on the date of this Indenture and the rules and regulations promulgated thereunder; provided, however, that in the event the Trust Indenture Act of 1939 is amended after such date, “*TIA*” means, to the extent required by any such amendment, the Trust Indenture Act as so amended.

“*Trustee*” means the person named as the “Trustee” in the first paragraph of this instrument until a successor Trustee shall have become such pursuant to the applicable provisions of this Indenture, and thereafter “Trustee” shall mean each person who is then a Trustee hereunder, and if at any time there is more than one such person, “Trustee” as used with respect to the Securities of any Series shall mean the Trustee with respect to Securities of that Series.

“*U.S. Government Obligations*” means securities which are (i) direct obligations of The United States of America for the payment of which its full faith and credit is pledged or (ii) obligations of a person controlled or supervised by and acting as an agency or instrumentality of The United States of America the payment of which is unconditionally guaranteed as a full faith and credit obligation by The United States of America, and which are not callable or redeemable at the option of the issuer thereof, and shall also include a depository receipt issued by a bank or trust company as custodian with respect to any such U.S. Government Obligation or a specific payment of interest on or principal of any such U.S. Government Obligation held by such custodian for the account of the holder of a depository receipt, provided that (except as required by law) such custodian is not authorized to make any deduction from the amount payable to the holder of such depository receipt from any amount received by the custodian in respect of the U.S. Government Obligation evidenced by such depository receipt.

Section 1.02 Other Definitions.

<u>TERM</u>	<u>DEFINED IN SECTION</u>
<i>Bankruptcy Law</i>	6.01
<i>Custodian</i>	6.01
<i>Event of Default</i>	6.01
<i>Judgment Currency</i>	10.16
<i>Legal Holiday</i>	10.07
<i>mandatory sinking fund payment</i>	11.01
<i>Market Exchange Rate</i>	10.15
<i>New York Banking Day</i>	10.16
<i>optional sinking fund payment</i>	11.01
<i>Paying Agent</i>	2.04
<i>Registrar</i>	2.04
<i>Required Currency</i>	10.16
<i>Service Agent</i>	2.04
<i>successor person</i>	5.01

Section 1.03 Incorporation by Reference of Trust Indenture Act.

Whenever this Indenture refers to a provision of the TIA, the provision is incorporated by reference in and made a part of this Indenture. The following TIA terms used in this Indenture have the following meanings:

“*Commission*” means the SEC.

“*indenture securities*” means the Securities.

“*indenture security holder*” means a Holder.

“*indenture to be qualified*” means this Indenture.

“*indenture trustee*” or “*institutional trustee*” means the Trustee.

“*obligor*” on the indenture securities means the Company and any successor obligor upon the Securities.

All other terms used in this Indenture that are defined by the TIA, defined by TIA reference to another statute or defined by SEC rule under the TIA and not otherwise defined herein are used herein as so defined.

Section 1.04 Rules of Construction.

Unless the context otherwise requires:

(a) a term has the meaning assigned to it;

(b) an accounting term not otherwise defined has the meaning assigned to it in accordance with generally accepted accounting principles;

(c) references to “generally accepted accounting principles” and “GAAP” shall mean generally accepted accounting principles in effect as of the time when and for the period as to which such accounting principles are to be applied;

(d) “or” is not exclusive;

(e) words in the singular include the plural, and in the plural include the singular; and

(f) provisions apply to successive events and transactions.

ARTICLE II THE SECURITIES

Section 2.01 Issuable in Series. The aggregate principal amount of Securities that may be authenticated and delivered under this Indenture is unlimited. The Securities may be issued in one or more Series. All Securities of a Series shall be identical except as may be set forth or determined in the manner provided in a Board Resolution, supplemental indenture or Officers’ Certificate detailing the adoption of the terms thereof pursuant to authority granted under a Board Resolution. In the case of Securities of a Series to be issued from time to time, the Board Resolution, Officers’ Certificate or supplemental indenture detailing the adoption of the terms thereof pursuant to authority granted under a Board Resolution may provide for the method by which specified terms (such as interest rate, maturity date, record date or date from which interest shall accrue) are to be determined. Securities may differ between Series in respect of any matters, provided that all Series of Securities shall be equally and ratably entitled to the benefits of this Indenture.

Section 2.02 Establishment of Terms of Series of Securities. At or prior to the issuance of any Securities within a Series, the following shall be established (as to the Series generally, in the case of Subsection 2.02(a) and either as to such Securities within the Series or as to the Series generally in the case of Subsections 2.02(b) through 2.02(s)) by or pursuant to a Board Resolution, and set forth or determined in the manner provided in a Board Resolution, supplemental indenture or an Officers’ Certificate:

(a) the form and title of the Series (which shall distinguish the Securities of that particular Series from the Securities of any other Series);

issued;

(b) the price or prices (expressed as a percentage of the principal amount thereof) at which the Securities of the Series will be

(c) any limit upon the aggregate principal amount of the Securities of the Series which may be authenticated and delivered under this Indenture (except for Securities authenticated and delivered upon registration of transfer of, or in exchange for, or in lieu of, other Securities of the Series pursuant to Section 2.07, 2.08, 2.11, 3.06 or 9.06);

(d) the date or dates on which the principal of the Securities of the Series is payable;

(e) the rate or rates (which may be fixed or variable) per annum or, if applicable, the method used to determine such rate or rates (including, but not limited to, any commodity, commodity index, stock exchange index or financial index) at which the Securities of the Series shall bear interest, if any, the date or dates from which such interest, if any, shall accrue, the date or dates on which such interest, if any, shall commence and be payable and any regular record date for the interest payable on any interest payment date;

(f) the place or places where the principal of and interest, if any, on the Securities of the Series shall be payable, where the Securities of such Series may be surrendered for registration of transfer or exchange and where notices and demands to or upon the Company in respect of the Securities of such Series and this Indenture may be served, and the method of such payment, if by wire transfer, mail or other means;

(g) if applicable, the period or periods within which, the price or prices at which and the terms and conditions upon which the Securities of the Series may be redeemed, in whole or in part, at the option of the Company;

(h) the obligation, if any, of the Company to redeem or purchase the Securities of the Series pursuant to any sinking fund or analogous provisions or at the option of a Holder thereof and the period or periods within which, the price or prices at which and the terms and conditions upon which Securities of the Series shall be redeemed or purchased, in whole or in part, pursuant to such obligation;

(i) the dates, if any, on which and the price or prices at which the Securities of the Series will be repurchased by the Company at the option of the Holders thereof and other detailed terms and provisions of such repurchase obligations;

(j) if other than denominations of \$1,000 and any integral multiple thereof, the denominations in which the Securities of the Series shall be issuable;

(k) if other than the principal amount thereof, the portion of the principal amount of the Securities of the Series that shall be payable upon declaration of acceleration of the maturity thereof pursuant to Section 6.02;

(l) the currency of denomination of the Securities of the Series, which may be Dollars or any Foreign Currency, and the agency or organization, if any, responsible for overseeing such composite currency and the Paying Agent for such Foreign Currency Securities (which shall not be the Trustee without the consent of the Trustee);

(m) the provisions, if any, relating to any security provided for the Securities of the Series;

(n) any addition to or change in the Events of Default which applies to any Securities of the Series and any change in the right of the Trustee or the requisite Holders of such Securities to declare the principal amount thereof due and payable pursuant to Section 6.02;

(o) any addition to or change in the covenants set forth in Articles IV or V which applies to Securities of the Series;

(p) the provisions, if any, relating to conversion of any Securities of such Series, including, if applicable, the securities into which the Securities are convertible, the conversion price, the conversion period, provisions as to whether conversion will be mandatory, at the option of the Holders or at the option of the Company, the events requiring an adjustment of the conversion price and provisions affecting conversion if such Series of Securities are redeemed;

(q) whether payment on the Securities of such Series will be subordinated to the payment of Senior Indebtedness and, if applicable, a description of the subordination terms thereof;

(r) any depositaries, interest rate calculation agents, exchange rate calculation agents or other agents with respect to Securities of such Series if other than those appointed herein; and

(s) any other terms of the Securities of the Series (which may modify or delete any provision of this Indenture insofar as it applies to such Series), but which shall not affect the rights, duties, obligations or immunities of the Trustee without the consent of the Trustee.

All Securities of any one Series need not be issued at the same time and may be issued from time to time, consistent with the terms of this Indenture, if so provided by or pursuant to the Board Resolution, supplemental indenture hereto or Officers' Certificate referred to above, and, unless otherwise provided, a Series may be reopened, without the consent of the Holders, for increases in the aggregate principal amount of such Series and issuances of additional Securities of such Series.

Section 2.03 Execution and Authentication. At least one Officer shall sign the Securities for the Company by manual or facsimile signature. If an Officer whose signature is on a Security no longer holds that office at the time the Security is authenticated, the Security shall nevertheless be valid. A Security shall not be valid until authenticated by the manual signature of the Trustee or an authenticating agent. The signature of the Trustee shall be conclusive evidence that the Security has been authenticated under this Indenture. At any time after the execution and delivery of this Indenture, the Company may deliver Securities executed by the Company to the Trustee for authentication and the Trustee shall authenticate and deliver Securities for original issue in the principal amount provided in a Company Order. Such Company Order may authorize authentication and delivery pursuant to electronic instructions in PDF from the Company or its duly authorized agent or agents. Each Security shall be dated the date of its authentication unless otherwise provided by a Board Resolution, a supplemental indenture hereto or an Officers' Certificate. The aggregate principal amount of Securities of any Series outstanding at any time may not exceed any limit upon the maximum principal amount for such Series set forth in the Board Resolution, supplemental indenture hereto or Officers' Certificate delivered pursuant to Section 2.02, except as provided in Section 2.02 or 2.08. Prior to the first issuance of Securities of any Series, the Trustee shall have received and (subject to Section 7.02) shall be fully protected in relying on: (a) the Board Resolution, supplemental indenture hereto or Officers' Certificate establishing the form of the Securities of that Series or of Securities within that Series and the terms of the Securities of that Series or of Securities within that Series, (b) an Officers' Certificate complying with Section 10.04 relating to the issuance, authentication and delivery of the Securities and (c) an Opinion of Counsel complying with Section 10.04 relating to the issuance, authentication and delivery of the Securities. The Trustee shall have the right to decline to authenticate and deliver any Securities of such Series: (a) if the Trustee, being advised by counsel, determines that such action may not be taken lawfully; (b) if the Trustee shall determine in good faith that such action would expose the Trustee to personal liability to Holders of any then outstanding Series of Securities; or (c) if the issuance of such Securities will affect the rights, powers, duties or immunities under the Securities and this Indenture or otherwise in a manner which is not reasonably acceptable to the Trustee. The Trustee may appoint an authenticating agent acceptable to the Company to authenticate Securities. An authenticating agent may authenticate Securities whenever the Trustee may do so. Each reference in this Indenture to authentication by the Trustee includes authentication by such agent. An authenticating agent has the same rights as an Agent to deal with the Company or an Affiliate of the Company.

Section 2.04 Registrar and Paying Agent. The Company shall maintain, with respect to each Series of Securities, at the place or places specified with respect to such Series pursuant to Section 2.02, an office or agency where Securities of such Series may be presented or surrendered for payment ("*Paying Agent*"), where Securities of such Series may be surrendered for registration of transfer or exchange ("*Registrar*") and where notices

and demands to or upon the Company in respect of the Securities of such Series and this Indenture may be served (“*Service Agent*”). The Registrar shall keep a register with respect to each Series of Securities and to their transfer and exchange. The Company will give prompt written notice to the Trustee of the name and address, and any change in the name or address, of each Registrar, Paying Agent or Service Agent. The Company may also from time to time designate one or more co-registrars, additional paying agents or additional service agents and may from time to time rescind such designations; provided, however, that no such designation or rescission shall in any manner relieve the Company of its obligations to maintain a Registrar, Paying Agent and Service Agent in each place so specified pursuant to Section 2.02 for Securities of any Series for such purposes. The Company will give prompt written notice to the Trustee of any such designation or rescission and of any change in the name or address of any such co-registrar, additional paying agent or additional service agent. The term “Registrar” includes any co-registrar; the term “Paying Agent” includes any additional paying agent; and the term “Service Agent” includes any additional service agent. The Company hereby appoints the Trustee the initial Registrar, Paying Agent and Service Agent for each Series unless another Registrar, Paying Agent or Service Agent, as the case may be, is appointed prior to the time Securities of that Series are first issued.

Section 2.05 Paying Agent to Hold Money in Trust. The Company shall require each Paying Agent other than the Trustee to agree in writing that the Paying Agent will hold in trust, for the benefit of Holders of any Series of Securities, or the Trustee, all money held by the Paying Agent for the payment of principal of or interest on the Series of Securities, and will notify the Trustee of any default by the Company in making any such payment. While any such default continues, the Trustee may require a Paying Agent to pay all money held by it to the Trustee. The Company at any time may require a Paying Agent to pay all money held by it to the Trustee. Upon payment over to the Trustee, the Paying Agent (if other than the Company or a Subsidiary of the Company) shall have no further liability for the money. If the Company or a Subsidiary of the Company acts as Paying Agent, it shall segregate and hold in a separate trust fund for the benefit of Holders of any Series of Securities all money held by it as Paying Agent.

Section 2.06 Holder Lists. The Trustee shall preserve in as current a form as is reasonably practicable the most recent list available to it of the names and addresses of Holders of each Series of Securities and shall otherwise comply with TIA Section 312(a). If the Trustee is not the Registrar, the Company shall furnish to the Trustee at least ten (10) days before each interest payment date and at such other times as the Trustee may request in writing a list, in such form and as of such date as the Trustee may reasonably require, of the names and addresses of Holders of each Series of Securities.

Section 2.07 Transfer and Exchange. Where Securities of a Series are presented to the Registrar or a co-registrar with a request to register a transfer or to exchange them for an equal principal amount of Securities of the same Series, the Registrar shall register the transfer or make the exchange if its requirements for such transactions are met. To permit registrations of transfers and exchanges, the Company shall execute, and the Trustee shall authenticate and deliver the Securities at the Company’s request upon receipt of a Company Order. No service charge shall be made for any registration of transfer or exchange (except as otherwise expressly permitted herein), but the Company may require payment of a sum sufficient to cover any tax or similar charge payable in connection therewith (other than any such tax or similar charge payable upon exchanges pursuant to Sections 2.11, 3.06 or 9.06). Neither the Company nor the Registrar shall be required (a) to issue, register the transfer of, or exchange Securities of any Series for the period beginning at the opening of business fifteen days immediately preceding the mailing of a notice of redemption of Securities of that Series selected for redemption and ending at the close of business on the day of such mailing, or (b) to register the transfer of or exchange Securities of any Series selected, called or being called for redemption as a whole or the portion being redeemed of any such Securities selected, called or being called for redemption in part. All Securities issued upon any transfer or exchange of Securities shall be the valid obligations of the Company, evidencing the same debt, and entitled to the same benefits under this Indenture, as the Securities surrendered upon such transfer or exchange. Every Security presented or surrendered for transfer or exchange shall (if so required by the Company or the Trustee) be duly endorsed, or be accompanied by a written instrument of transfer in form satisfactory to the Company and the Registrar duly executed, by the Holder thereof or its attorney duly authorized in writing.

Section 2.08 Mutilated, Destroyed, Lost and Stolen Securities.

(a) If any mutilated Security is surrendered to the Trustee, the Company shall execute and the Trustee shall, upon receipt of a Company Order, authenticate and make available for delivery in exchange therefor a new Security of the same Series and of like tenor and principal amount and bearing a number not contemporaneously outstanding. If there shall be delivered to the Company and the Trustee (i) evidence to their satisfaction of the destruction, loss or theft of any Security and (ii) such security or indemnity as may be required by them to save each of them and any agent of either of them harmless, then, in the absence of notice to the Company or the Trustee that such Security has been acquired by a protected purchaser, the Company shall execute and upon receipt of a Company Order, the Trustee shall authenticate and make available for delivery, in lieu of any such destroyed, lost or stolen Security, a new Security of the same Series and of like tenor and principal amount and bearing a number not contemporaneously outstanding. In case any such mutilated, destroyed, lost or stolen Security has become or is about to become due and payable, the Company in its discretion may, instead of issuing a new Security, pay such Security.

(b) Upon the issuance of any new Security under this Section, the Company may require the payment of a sum sufficient to cover any tax or other charge that may be imposed in relation thereto and any other expenses (including the fees and expenses of the Trustee) connected therewith. Every new Security of any Series issued pursuant to this Section in lieu of any destroyed, lost or stolen Security shall constitute an original additional contractual obligation of the Company, whether or not the destroyed, lost or stolen Security shall be at any time enforceable by anyone, and shall be entitled to all the benefits of this Indenture equally and proportionately with any and all other Securities of that Series duly issued hereunder. The provisions of this Section are exclusive and shall preclude (to the extent lawful) all other rights and remedies with respect to the replacement or payment of mutilated, destroyed, lost or stolen Securities.

Section 2.09 Outstanding Securities. The Securities outstanding at any time are all the Securities authenticated by the Trustee except for those canceled by it, those delivered to it for cancellation, those reductions in the interest on a Global Security effected by the Trustee in accordance with the provisions hereof and those described in this Section as not outstanding. If a Security is replaced pursuant to Section 2.08, it ceases to be outstanding until the Trustee receives proof satisfactory to it that the replaced Security is held by a protected purchaser. If the Paying Agent (other than the Company, a Subsidiary of the Company or an Affiliate of the Company) holds on the Maturity of Securities of a Series money sufficient to pay such Securities payable on that date, then on and after that date such Securities of the Series cease to be outstanding and interest on them ceases to accrue. A Security does not cease to be outstanding because the Company or an Affiliate of the Company holds the Security. In determining whether the Holders of the requisite principal amount of outstanding Securities have given any request, demand, authorization, direction, notice, consent or waiver hereunder, the principal amount of a Discount Security that shall be deemed to be outstanding for such purposes shall be the amount of the principal thereof that would be due and payable as of the date of such determination upon a declaration of acceleration of the Maturity thereof pursuant to Section 6.02.

Section 2.10 Treasury Securities. In determining whether the Holders of the required principal amount of Securities of a Series have concurred in any request, demand, authorization, direction, notice, consent or waiver, Securities of a Series owned by the Company shall be disregarded, except that for the purposes of determining whether the Trustee shall be protected in relying on any such request, demand, authorization, direction, notice, consent or waiver, only Securities of a Series that a Responsible Officer of the Trustee knows are so owned shall be so disregarded.

Section 2.11 Temporary Securities. Until definitive Securities are ready for delivery, the Company may prepare and execute and the Trustee shall authenticate temporary Securities upon receipt of a Company Order. Temporary Securities shall be substantially in the form of definitive Securities but may have variations that the Company considers appropriate for temporary Securities. Without unreasonable delay, the Company shall prepare and execute and the Trustee, upon receipt of a Company Order, shall authenticate definitive Securities of the same Series and date of maturity in exchange for temporary Securities. Until so exchanged, temporary securities shall have the same rights under this Indenture as the definitive Securities.

Section 2.12 Cancellation. The Company at any time may deliver Securities to the Trustee for cancellation. The Registrar and the Paying Agent shall forward to the Trustee any Securities surrendered to them for

registration of transfer, exchange or payment. The Trustee shall cancel all Securities surrendered for registration of transfer, exchange, payment, replacement or cancellation in accordance with its customary procedures. The Company may not issue new Securities to replace Securities that it has paid or delivered to the Trustee for cancellation.

Section 2.13 Defaulted Interest. If the Company defaults in a payment of interest on a Series of Securities, it shall pay the defaulted interest at the rate established for the particular Series, if any, plus, to the extent permitted by law, any interest payable on the defaulted interest, to the persons who are Holders of the Series on a subsequent special record date. The Company shall fix the special record date and payment date. At least ten (10) days before the special record date, the Company shall mail to the Trustee and to each Holder of the Series a notice that states the record date, the related payment date and the amount of interest to be paid. The Company may also pay defaulted interest in any other lawful manner.

Section 2.14 Global Securities.

(a) Terms of Securities. A Board Resolution, a supplemental indenture hereto or an Officers' Certificate shall establish whether the Securities of a Series shall be issued in whole or in part in the form of one or more Global Securities and the Depositary for such Global Security or Securities.

(b) Transfer and Exchange. Notwithstanding any provisions to the contrary contained in Section 2.07 of the Indenture and in addition thereto, any Global Security shall be exchangeable pursuant to Section 2.07 of the Indenture for Securities registered in the names of Holders other than the Depositary for such Security or its nominee only if (i) such Depositary notifies the Company that it is unwilling or unable to continue as Depositary for such Global Security or if at any time such Depositary ceases to be a clearing agency registered under the Exchange Act, and, in either case, the Company fails to appoint a successor Depositary registered as a clearing agency under the Exchange Act within 90 days of such event, (ii) the Company executes and delivers to the Trustee an Officers' Certificate stating that such Global Security shall be so exchangeable or (iii) an Event of Default with respect to the Securities represented by such Global Security shall have happened and be continuing and the Depositary request the Company to exchange the Securities. Any Global Security that is exchangeable pursuant to the preceding sentence shall be exchangeable for Securities registered in such names as the Depositary shall direct in writing in an aggregate principal amount equal to the principal amount of the Global Security with like tenor and terms.

(c) A Global Security may not be transferred except as a whole by the Depositary with respect to such Global Security to a nominee of such Depositary, by a nominee of such Depositary to such Depositary or another nominee of such Depositary or by the Depositary or any such nominee to a successor Depositary or a nominee of such a successor Depositary.

(d) Legend. Any Global Security issued hereunder shall bear a legend in substantially the following form:

“This Security is a Global Security within the meaning of the Indenture hereinafter referred to and is registered in the name of the Depositary or a nominee of the Depositary. This Security is exchangeable for Securities registered in the name of a person other than the Depositary or its nominee only in the limited circumstances described in the Indenture, and may not be transferred except as a whole by the Depositary to a nominee of the Depositary, by a nominee of the Depositary to the Depositary or another nominee of the Depositary or by the Depositary or any such nominee to a successor Depositary or a nominee of such a successor Depositary.”

(e) Acts of Holders. The Depositary, as a Holder, may appoint agents and otherwise authorize participants to give or take any request, demand, authorization, direction, notice, consent, waiver or other action which a Holder is entitled to give or take under the Indenture.

(f) Payments. Notwithstanding the other provisions of this Indenture, unless otherwise specified as contemplated by Section 2.02, payment of the principal of and interest, if any, on any Global Security shall be made to the Holder thereof.

(g) [Reserved].

(h) The Depositary or its nominee, as registered owner of a Global Security, shall be the Holder of such Global Security for all purposes under the Indenture and the Securities, and owners of beneficial interests in a Global Security shall hold such interests pursuant to the Applicable Procedures. Accordingly, any such owner's beneficial interest in a Global Security will be shown only on, and the transfer of such interest shall be effected only through, records maintained by the Depositary or its nominee and such owners of beneficial interests in a Global Security will not be considered the owners or holders thereof. Notwithstanding any other provision of this Indenture or any Security, where this Indenture or any Global Security provides for notice of any event (including any notice of redemption or repurchase) to a Holder of a Global Security (whether by mail or otherwise), such notice shall be sufficiently given if given to the Depositary (or its designee) pursuant to the standing instructions from the Depositary or its designee, including by electronic mail in accordance with applicable Depositary procedures.

Section 2.15 CUSIP Numbers. The Company in issuing the Securities may use "CUSIP" numbers (if then generally in use), and, if so, "CUSIP" numbers shall be used in notices of redemption as a convenience to Holders; provided that any such notice may state that no representation is made as to the correctness of such numbers either as printed on the Securities or as contained in any notice of a redemption and that reliance may be placed only on the other elements of identification printed on the Securities, and any such redemption shall not be affected by any defect in or omission of such numbers. The Company shall promptly notify the Trustee of any change in "CUSIP" numbers of which the Company becomes aware.

ARTICLE III REDEMPTION

Section 3.01 Notice to Trustee. The Company may, with respect to any Series of Securities, reserve the right to redeem and pay the Series of Securities or may covenant to redeem and pay the Series of Securities or any part thereof prior to the Stated Maturity thereof at such time and on such terms as provided for in such Securities. If a Series of Securities is redeemable and the Company wants or is obligated to redeem prior to the Stated Maturity thereof all or part of the Series of Securities pursuant to the terms of such Securities, it shall notify the Trustee of the redemption date and the principal amount of the Series of Securities to be redeemed at least 40, and not more than 60 days before the redemption date.

Section 3.02 Selection of Securities to be Redeemed. Unless otherwise indicated for a particular Series by a Board Resolution, a supplemental indenture or an Officers' Certificate, if less than all the Securities of a Series are to be redeemed, the Trustee shall select the Securities of the Series to be redeemed in any manner that the Trustee deems fair and appropriate or in accordance with the procedures of the applicable Depositary. The Trustee shall make the selection from Securities of the Series outstanding not previously called for redemption. Securities of a Series and portions selected for redemption shall be in amounts of \$1,000 or whole multiples of \$1,000 or, with respect to Securities of any Series issuable in other denominations pursuant to Section 2.02(j), the minimum principal denomination for each Series and integral multiples thereof. Provisions of this Indenture that apply to Securities of a Series called for redemption also apply to portions of Securities of that Series called for redemption. The Trustee shall not be liable for the selection made in accordance with this Section 3.02. For all purposes of this Indenture, unless the context otherwise requires, all provisions relating to the redemption of Securities shall relate, in the case of any Security redeemed or to be redeemed only in part, to the portion of the principal of such Security which has been or is to be redeemed.

Section 3.03 Notice of Redemption.

(a) At least 30 days but not more than 60 days before a redemption date, the Company shall mail a notice of redemption by first-class mail to each Holder whose Securities are to be redeemed and, if any Bearer Securities are outstanding, publish on one occasion a notice in an Authorized Newspaper. The notice shall identify the Securities of the Series to be redeemed and shall state:

(i) the redemption date;

(ii) the redemption price or the manner of the calculation of the redemption price;

(iii) the name and address of the Paying Agent;

(iv) that Securities of the Series called for redemption must be surrendered to the Paying Agent to collect the redemption price;

(v) that interest on Securities of the Series called for redemption ceases to accrue on and after the redemption date;

(vi) the CUSIP number, if any; and

(vii) any other information as may be required by the terms of the particular Series or the Securities of a Series being redeemed.

At the Company's request, the Trustee shall give the notice of redemption in the Company's name and at its expense; provided that the Company shall have delivered to the Trustee, at least five Business Days (or such shorter period as the Trustee may consent to in writing) before notice of redemption is required to be mailed or caused to be mailed to Holders pursuant to this Section 3.03, an Officers' Certificate of the Company requesting that the Trustee give such notice and setting forth the information to be stated in such notice as provided in the preceding paragraph.

Section 3.04 Effect of Notice of Redemption. Once notice of redemption is mailed or published as provided in Section 3.03, Securities of a Series called for redemption become due and payable on the redemption date and at the redemption price. A notice of redemption may not be conditional. Upon surrender to the Paying Agent, such Securities shall be paid at the redemption price plus accrued interest to the redemption date; provided that installments of interest whose Stated Maturity is on or prior to the redemption date shall be payable to the Holders of such Securities (or one or more predecessor Securities) registered at the close of business on the relevant record date therefor according to their terms and the terms of this Indenture.

Section 3.05 Deposit of Redemption Price. On or before 10:00 a.m., New York City time, on the redemption date, the Company shall deposit with the Paying Agent money sufficient to pay the redemption price of and accrued interest, if any, on all Securities to be redeemed on that date.

Section 3.06 Securities Redeemed in Part. Upon surrender of a Security that is redeemed in part, the Company shall issue and execute and the Trustee, upon receipt of a Company Order, shall authenticate for the Holder a new Security of the same Series and the same maturity equal in principal amount to the unredeemed portion of the Security surrendered.

ARTICLE IV COVENANTS

Section 4.01 Payment of Principal and Interest. The Company covenants and agrees for the benefit of the Holders of each Series of Securities that it will duly and punctually pay the principal of and interest, if any, on the Securities of that Series in accordance with the terms of such Securities and this Indenture by 10:00 a.m., New York City time on the due date.

Section 4.02 SEC Reports. The Company shall, so long as any of the Securities are outstanding, electronically file with the Commission the annual, quarterly and other periodic reports that the Company is required to file (or would be otherwise required to file) with the Commission pursuant to Sections 13 and 15(d) of the Exchange Act. The Company also shall comply with the other provisions of TIA Section 314(a). Delivery of any reports, information and documents to the Trustee is for informational purposes only and the Trustee's receipt of such shall not constitute constructive notice of any information contained therein or determinable from information contained therein, including the Company's compliance with any of its covenants hereunder (as to which the Trustee is entitled to rely exclusively on an Officers' Certificate).

Section 4.03 Compliance Certificate. The Company shall, so long as any of the Securities are outstanding, deliver to the Trustee, within 120 days after the end of each fiscal year (which on the date hereof ends on December 31) of the Company, an Officers' Certificate stating whether or not to the knowledge of the signers thereof the Company is in default in the performance and observance of any of the terms, provisions and conditions hereof (without regard to any period of grace or requirement of notice provided hereunder), and if a Default or Event of Default shall have occurred, specifying all such Defaults or Events of Default and the nature and status thereof of which they may have knowledge.

The Company shall, so long as any of the Securities are outstanding, deliver to the Trustee, within thirty (30) days after becoming aware of any Default or Event of Default, an Officers' Certificate specifying such Default or Event of Default and what action the Company is taking or proposes to take with respect thereto; provided that no notice shall be required to the extent that the event that would constitute a Default or Event of Default has been cured or waived.

Section 4.04 Stay, Extension and Usury Laws. The Company covenants (to the extent that it may lawfully do so) that it will not at any time insist upon, plead or in any manner whatsoever claim or take the benefit or advantage of, any stay, extension or usury law wherever enacted, now or at any time hereafter in force, which may affect the covenants or the performance of this Indenture or the Securities and the Company (to the extent it may lawfully do so) hereby expressly waives all benefit or advantage of any such law and covenants that it will not, by resort to any such law, hinder, delay or impede the execution of any power herein granted to the Trustee, but will suffer and permit the execution of every such power as though no such law has been enacted.

Section 4.05 Maintenance of Office or Agency. The Company will maintain an office or agency required under Section 2.04. The Company will give prompt written notice to the Trustee of the location, and of any change in location, of such office or agency. If at any time the Company shall fail to maintain any such required office or agency or shall fail to furnish the Trustee with the address thereof, such presentations, surrenders, notices and demands may be made or served at the Corporate Trust Office of the Trustee, and the Company hereby appoints the Trustee as its agent to receive all such presentations, surrenders, notices and demands.

ARTICLE V SUCCESSORS

Section 5.01 When Company May Merge, Etc. The Company shall not consolidate with or merge with or into, or convey, transfer or lease all or substantially all of its properties and assets to, another person (a "successor person") unless:

(a) the Company is the surviving person or the successor person (if other than the Company) is organized and validly existing under the laws of any U.S. domestic jurisdiction and expressly assumes the Company's obligations on the Securities and under this Indenture pursuant to a supplemental indenture; and

(b) immediately after giving effect to the transaction, no Default or Event of Default shall have occurred and be continuing.

For the avoidance of doubt, notwithstanding the foregoing, the sale, conveyance or transfer of intellectual property and similar or related assets and the Company's equity ownership interests in foreign Subsidiaries to one or more of its Subsidiaries, in each case, in connection with its global tax optimization strategies in conjunction with business operations will not be considered "all or substantially all of its properties and assets."

The Company shall deliver to the Trustee prior to the consummation of the proposed transaction an Officers' Certificate and an Opinion of Counsel, each stating that the proposed transaction and any supplemental indenture comply with this Indenture.

Section 5.02 Successor Person Substituted. Upon any consolidation or merger, or any sale, lease, conveyance or other disposition of all or substantially all of the assets of the Company in accordance with Section

5.01, the successor person formed by such consolidation or into or with which the Company is merged or to which such sale, lease, conveyance or other disposition is made shall succeed to, and be substituted for, and may exercise every right and power of, the Company under this Indenture with the same effect as if such successor person has been named as the Company herein; provided, however, that the predecessor Company in the case of a sale, conveyance or other disposition (other than a lease) shall be released from all obligations and covenants under this Indenture and the Securities.

ARTICLE VI DEFAULTS AND REMEDIES

Section 6.01 Events of Default.

“*Event of Default*,” wherever used herein with respect to Securities of any Series, means any one of the following events, unless in the establishing Board Resolution, supplemental indenture or Officers’ Certificate, it is provided that such Series shall not have the benefit of said Event of Default:

(a) default in the payment of any interest on any Security of that Series when it becomes due and payable, and continuance of such default for a period of 30 days; or

(b) default in the payment of principal of (or premium, if any, on) any Security of that Series at its Maturity; or

(c) default in the performance or breach of any covenant or warranty of the Company in this Indenture (other than a covenant or warranty for which the consequences of nonperformance or breach are addressed elsewhere in this Section 6.01 and other than a covenant or warranty that has been included in this Indenture solely for the benefit of a Series of Securities other than that Series), which default continues uncured for a period of 90 days after there has been given, by registered or certified mail, to the Company by the Trustee or to the Company and the Trustee by the Holders of not less than a majority in principal amount of the outstanding Securities of that Series a written notice specifying such default or breach and requiring it to be remedied and stating that such notice is a “Notice of Default” hereunder; or

(d) the Company pursuant to or within the meaning of any Bankruptcy Law:

(i) commences a voluntary case or proceeding;

(ii) consents to the entry of an order for relief against it in an involuntary case,

(iii) consents to the appointment of a Custodian of it or for all or substantially all of its property,

(iv) makes a general assignment for the benefit of its creditors, or

(v) makes an admission in writing that it is generally unable to pay its debts as the same become due; or

(e) a court of competent jurisdiction enters an order or decree under any Bankruptcy Law that:

(i) is for relief against the Company in an involuntary case,

(ii) appoints a Custodian of the Company or for all or substantially all of its property, or

(iii) orders the liquidation of the Company, and the order or decree remains unstayed and in effect for 90 days; or

(f) any other Event of Default provided with respect to Securities of that Series, which is specified in a Board Resolution, a supplemental indenture hereto or an Officers' Certificate, in accordance with Section 2.02(n).

The term "*Bankruptcy Law*" means Title 11 of the U.S. Code or any similar federal or state law for the relief of debtors. The term "*Custodian*" means any receiver, trustee, assignee, liquidator or similar official under any Bankruptcy Law.

Section 6.02 Acceleration of Maturity; Rescission and Annulment. If an Event of Default with respect to Securities of any Series at the time outstanding occurs and is continuing (other than an Event of Default referred to in Section 6.01(d) or (e)), then in every such case the Trustee or the Holders of not less than a majority in principal amount of the outstanding Securities of that Series may declare the principal amount (or, if any Securities of that Series are Discount Securities, such portion of the principal amount as may be specified in the terms of such Securities) of and accrued and unpaid interest, if any, on all of the Securities of that Series to be due and payable immediately, by a notice in writing to the Company (and to the Trustee if given by Holders), and upon any such declaration such principal amount (or specified amount) and accrued and unpaid interest, if any, shall become immediately due and payable. If an Event of Default specified in Section 6.01(d) or (e) shall occur, the principal amount (or specified amount) of and accrued and unpaid interest, if any, on all outstanding Securities shall be immediately due and payable without any declaration or other act on the part of the Trustee or any Holder. At any time after such a declaration of acceleration with respect to any Series has been made and before a judgment or decree for payment of the money due has been obtained by the Trustee as hereinafter in this Article provided, the Holders of a majority in principal amount of the outstanding Securities of that Series, by written notice to the Company and the Trustee, may rescind and annul such declaration and its consequences if (a) the Company has paid and deposited with the Trustee a sum sufficient to pay (1) all overdue instalments of interest on all Securities of that Series, (2) the principal of (and premium, if any, on) any Securities of that Series which have become due otherwise than by such declaration of acceleration and interest thereon at the rate borne by the Securities of that Series, (3) to the extent that payment of such interest is lawful, interest upon overdue instalments of interest at the rate borne by the Securities of that Series, and (4) all sums paid or advanced by the Trustee hereunder and the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel; and (b) all Events of Default with respect to Securities of that Series, other than the non-payment of the principal and interest, if any, of Securities of that Series which have become due solely by such declaration of acceleration, have been cured or waived as provided in Section 6.13. No such rescission shall affect any subsequent Default or impair any right consequent thereon.

Section 6.03 Collection of Indebtedness and Suits for Enforcement by Trustee.

The Company covenants that if:

(a) default is made in the payment of any interest on any Security when such interest becomes due and payable and such default continues for a period of 30 days, or

(b) default is made in the payment of principal of any Security at the Maturity thereof, then the Company will, upon demand of the Trustee, pay to it, for the benefit of the Holders of such Securities, the whole amount then due and payable on such Securities for principal and interest and, to the extent that payment of such interest shall be legally enforceable, interest on any overdue principal and any overdue interest at the rate or rates prescribed therefor in such Securities and, in addition thereto, such further amount as shall be sufficient to cover the costs and expenses of collection, including the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel.

If the Company fails to pay such amounts forthwith upon such demand, the Trustee, in its own name and as trustee of an express trust, may institute a judicial proceeding for the collection of the sums so due and unpaid, may prosecute such proceeding to judgment or final decree and may enforce the same against the Company or any other

obligor upon such Securities and collect the moneys adjudged or deemed to be payable in the manner provided by law out of the property of the Company or any other obligor upon such Securities, wherever situated.

If an Event of Default with respect to any Securities of any Series occurs and is continuing, the Trustee may in its discretion proceed to protect and enforce its rights and the rights of the Holders of Securities of such Series by such appropriate judicial proceedings as the Trustee shall deem most effectual to protect and enforce any such rights, whether for the specific enforcement of any covenant or agreement in this Indenture or in aid of the exercise of any power granted herein, or to enforce any other proper remedy.

Section 6.04 Trustee May File Proofs of Claim. In case of the pendency of any receivership, insolvency, liquidation, bankruptcy, reorganization, arrangement, adjustment, composition or other judicial proceeding relative to the Company or any other obligor upon the Securities or the property of the Company or of such other obligor or their creditors, the Trustee (irrespective of whether the principal of the Securities shall then be due and payable as therein expressed or by declaration or otherwise and irrespective of whether the Trustee shall have made any demand on the Company for the payment of overdue principal or interest) shall be entitled and empowered, by intervention in such proceeding or otherwise, (a) to file and prove a claim for the whole amount of principal (and premium, if any) and interest owing and unpaid in respect of the Securities and to file such other papers or documents as may be necessary or advisable in order to have the claims of the Trustee (including any claim for the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel) and of the Holders allowed in such judicial proceeding, and (b) to collect and receive any moneys or other property payable or deliverable on any such claims and to distribute the same, and any custodian, receiver, assignee, trustee, liquidator, sequestrator or other similar official in any such judicial proceeding is hereby authorized by each Holder to make such payments to the Trustee and, in the event that the Trustee shall consent to the making of such payments directly to the Holders, to pay to the Trustee any amount due it for the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel, and any other amounts due the Trustee under Section 7.07. Nothing herein contained shall be deemed to authorize the Trustee to authorize or consent to or accept or adopt on behalf of any Holder any plan of reorganization, arrangement, adjustment or composition affecting the Securities or the rights of any Holder thereof or to authorize the Trustee to vote in respect of the claim of any Holder in any such proceeding.

Section 6.05 Trustee May Enforce Claims Without Possession of Securities. All rights of action and claims under this Indenture or the Securities may be prosecuted and enforced by the Trustee without the possession of any of the Securities or the production thereof in any proceeding relating thereto, and any such proceeding instituted by the Trustee shall be brought in its own name as trustee of an express trust, and any recovery of judgment shall, after provision for the payment of the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel, be for the ratable benefit of the Holders of the Securities in respect of which such judgment has been recovered.

Section 6.06 Application of Money Collected. Any money collected by the Trustee pursuant to this Article shall be applied in the following order, at the date or dates fixed by the Trustee and, in case of the distribution of such money on account of principal or interest, upon presentation of the Securities and the notation thereon of the payment if only partially paid and upon surrender thereof if fully paid:

First: To the payment of all amounts due the Trustee under Section 7.07; and

Second: To the payment of the amounts then due and unpaid for principal (and premium, if any) of and interest on the Securities in respect of which or for the benefit of which such money has been collected, ratably, without preference or priority of any kind, according to the amounts due and payable on such Securities for principal and interest, respectively; and

Third: To the Company.

Section 6.07 Limitation on Suits. No Holder of any Security of any Series shall have any right to institute any proceeding, judicial or otherwise, with respect to this Indenture, or for the appointment of a receiver or trustee, or for any other remedy hereunder, unless:

(a) such Holder has previously given written notice to the Trustee of a continuing Event of Default with respect to the Securities of that Series;

(b) the Holders of at least a majority in principal amount of the outstanding Securities of that Series shall have made written request to the Trustee to institute proceedings in respect of such Event of Default in its own name as Trustee hereunder;

(c) such Holder or Holders shall have offered to the Trustee security or indemnity reasonably satisfactory to the Trustee against the costs, expenses and liabilities to be incurred in compliance with such request;

(d) the Trustee for 60 days after its receipt of such notice, request and offer of indemnity has failed to institute any such proceeding; and

(e) no direction inconsistent with such written request has been given to the Trustee during such 60-day period by the Holders of a majority in principal amount of the outstanding Securities of that Series;

it being understood and intended that no one or more of such Holders shall have any right in any manner whatever by virtue of, or by availing of, any provision of this Indenture to affect, disturb or prejudice the rights of any other of such Holders, or to obtain or to seek to obtain priority or preference over any other of such Holders or to enforce any right under this Indenture, except in the manner herein provided and for the equal and ratable benefit of all such Holders.

Section 6.08 Unconditional Right of Holders to Receive Principal and Interest. Notwithstanding any other provision in this Indenture, the Holder of any Security shall have the right, which is absolute and unconditional, to receive payment of the principal of (and premium, if any) and interest, if any, on such Security on the Stated Maturity or Stated Maturities expressed in such Security (or, in the case of redemption, on the redemption date) and to institute suit for the enforcement of any such payment, and such rights shall not be impaired without the consent of such Holder.

Section 6.09 Restoration of Rights and Remedies. If the Trustee or any Holder has instituted any proceeding to enforce any right or remedy under this Indenture and such proceeding has been discontinued or abandoned for any reason, or has been determined adversely to the Trustee or to such Holder, then and in every such case, subject to any determination in such proceeding, the Company, the Trustee and the Holders shall be restored severally and respectively to their former positions hereunder and thereafter all rights and remedies of the Trustee and the Holders shall continue as though no such proceeding had been instituted.

Section 6.10 Rights and Remedies Cumulative. Except as otherwise provided with respect to the replacement or payment of mutilated, destroyed, lost or stolen Securities in Section 2.08, no right or remedy herein conferred upon or reserved to the Trustee or to the Holders is intended to be exclusive of any other right or remedy, and every right and remedy shall, to the extent permitted by law, be cumulative and in addition to every other right and remedy given hereunder or now or hereafter existing at law or in equity or otherwise. The assertion or employment of any right or remedy hereunder, or otherwise, shall not, to the extent permitted by law, prevent the concurrent assertion or employment of any other appropriate right or remedy.

Section 6.11 Delay or Omission Not Waiver. No delay or omission of the Trustee or of any Holder of any Securities to exercise any right or remedy accruing upon any Event of Default shall impair any such right or remedy or constitute a waiver of any such Event of Default or acquiescence therein. Every right and remedy given by this Article or by law to the Trustee or to the Holders may be exercised from time to time, and as often as may be deemed expedient, by the Trustee or by the Holders, as the case may be.

Section 6.12 Control by Holders. Subject to Section 7.02(f), the Holders of a majority in principal amount of the outstanding Securities of any Series shall have the right to direct the time, method and place of conducting any proceeding for any remedy available to the Trustee, or exercising any trust or power conferred on the Trustee, with respect to the Securities of such Series, provided that:

(a) such direction shall not be in conflict with any rule of law or with this Indenture, expose the Trustee to personal liability or be unduly prejudicial to Holders not joining therein, and

(b) the Trustee may take any other action deemed proper by the Trustee which is not inconsistent with such direction.

Section 6.13 Waiver of Past Defaults. The Holders of not less than a majority in principal amount of the outstanding Securities of any Series may on behalf of the Holders of all the Securities of such Series waive any past Default hereunder with respect to such Series and its consequences, except a Default (i) in the payment of the principal of (or premium, if any) or interest on any Security of such Series (provided, however, that the Holders of a majority in principal amount of the outstanding Securities of any Series may rescind an acceleration and its consequences, including any related payment default that resulted from such acceleration) or (ii) in respect of a covenant or provision hereof which cannot be modified or amended without the consent of the Holder of each outstanding Security of such Series affected. Upon any such waiver, such Default shall cease to exist, and any Event of Default arising therefrom shall be deemed to have been cured, for every purpose of this Indenture; but no such waiver shall extend to any subsequent or other Default or impair any right consequent thereon.

Section 6.14 Undertaking for Costs. All parties to this Indenture agree, and each Holder of any Security by its acceptance thereof shall be deemed to have agreed, that any court may in its discretion require, in any suit for the enforcement of any right or remedy under this Indenture, or in any suit against the Trustee for any action taken, suffered or omitted by it as Trustee, the filing by any party litigant in such suit of an undertaking to pay the costs of such suit, and that such court may in its discretion assess reasonable costs, including reasonable attorneys' fees, against any party litigant in such suit, having due regard to the merits and good faith of the claims or defenses made by such party litigant; but the provisions of this Section shall not apply to any suit instituted by the Company, to any suit instituted by the Trustee, to any suit instituted by any Holder, or group of Holders, holding in the aggregate more than 10% in principal amount of the outstanding Securities of any Series, or to any suit instituted by any Holder for the enforcement of the payment of the principal of or interest on any Security on or after the Stated Maturity or Stated Maturities expressed in such Security (or, in the case of redemption, on the redemption date).

Section 6.15 Waiver of Stay or Extension Laws. The Company covenants (to the extent it may lawfully do so) that it will not at any time insist upon, or plead, or in any manner whatsoever claim or take the benefit or advantage of, any stay or extension law wherever enacted, now or at any time hereafter in force, which may affect the covenants or the performance of this Indenture; and the Company (to the extent that it may lawfully do so) hereby expressly waives all benefit or advantage of any such law, and covenants that it will not hinder, delay or impede the execution of any power herein granted to the Trustee, but will suffer and permit the execution of every such power as though no such law had been enacted.

ARTICLE VII TRUSTEE

Section 7.01 Duties of Trustee.

(a) If an Event of Default has occurred and is continuing, the Trustee shall exercise such of the rights and powers vested in it by this Indenture, and use the same degree of care and skill in their exercise, as a prudent man would exercise or use under the circumstances in the conduct of such person's own affairs.

(b) Except during the continuance of an Event of Default:

(i) The Trustee need perform only those duties that are specifically set forth in this Indenture and no others and no implied covenants or obligations shall be read into this Indenture against the Trustee.

(ii) In the absence of bad faith on its part, the Trustee may conclusively rely and is fully protected, as to the truth of the statements and the correctness of the opinions expressed therein, upon certificates or opinions furnished to the Trustee and conforming to the requirements of this Indenture; however, in

the case of any such certificates or opinions which by any provisions hereof are specifically required to be furnished to the Trustee, the Trustee shall examine such certificates and opinions to determine whether or not they conform to the requirements of this Indenture (but need not confirm or investigate the accuracy of mathematical calculations or other facts stated therein).

(c) The Trustee may not be relieved from liability for its own negligent action, its own negligent failure to act or its own willful misconduct, except that:

(i) This paragraph does not limit the effect of paragraph (b) of this Section.

(ii) The Trustee shall not be liable for any error of judgment made in good faith by a Responsible Officer, unless it is proved that the Trustee was negligent in ascertaining the pertinent facts.

(iii) The Trustee shall not be liable with respect to any action taken, suffered or omitted to be taken by it with respect to Securities of any Series in good faith in accordance with the direction of the Holders of a majority in principal amount of the outstanding Securities of such Series relating to the time, method and place of conducting any proceeding for any remedy available to the Trustee, or exercising any trust or power conferred upon the Trustee, under this Indenture with respect to the Securities of such Series.

(iv) No provision of this Indenture shall require the Trustee to expend or risk its own funds or otherwise incur any financial liability in the performance of any of its duties hereunder, or in the exercise of any of its rights or powers, if it shall have reasonable grounds for believing that repayment of such funds or adequate indemnity against such risk or liability is not reasonably assured to it.

(d) Whether or not therein expressly so provided, every provision of this Indenture that in any way relates to the conduct or affects the liability of or affords protection to the Trustee is subject to paragraph (a), (b), (c) and (d) of this Section.

(e) The Trustee may refuse to perform any duty or exercise any right or power at the request or direction of any Holder unless it receives indemnity reasonably satisfactory to the Trustee against any loss, liability or expense.

(f) The Trustee shall not be liable for interest on any money received by it except as the Trustee may agree in writing with the Company. Money held in trust by the Trustee need not be segregated from other funds except to the extent required by law.

(g) No provision of this Indenture shall require the Trustee to risk its own funds or otherwise incur any financial liability in the performance of any of its duties, or in the exercise of any of its rights or powers, if it shall have reasonable grounds for believing that repayment of such funds or adequate indemnity against such risk is not reasonably assured to it.

(h) The rights, privileges, protections, immunities and benefits given to the Trustee, including the right to be indemnified, are extended to, and shall be enforceable by the Trustee in each of its capacities hereunder and to its agents. The provisions set forth in paragraphs (a), (b), (c) and (d) of this Section shall apply to the Trustee in each of its capacities hereunder and its agents.

Section 7.02 Rights of Trustee.

(a) The Trustee may rely on and shall be protected in acting or refraining from acting upon any document believed by it to be genuine and to have been signed or presented by the proper person. The Trustee need not investigate any fact or matter stated in the document.

(b) Before the Trustee acts or refrains from acting at the direction of the Company, it may require an Officers' Certificate. The Trustee shall not be liable for any action it takes or omits to take in good faith

in reliance on such Officers' Certificate. Any request or direction of the Company mentioned herein shall be sufficiently evidenced by a Company Request or a Company Order and any resolution of the Board of Directors may be sufficiently evidenced by a Board Resolution.

(c) The Trustee may act through agents and shall not be responsible for the misconduct or negligence of any agent appointed with due care. No Depository shall be deemed an agent of the Trustee, and the Trustee shall not be responsible for any act or omission by any Depository.

(d) The Trustee shall not be liable for any action it takes or omits to take in good faith which it believes to be authorized or within its rights or powers, provided that the Trustee's conduct does not constitute negligence or bad faith.

(e) The Trustee may consult with counsel, and the advice of such counsel or any Opinion of Counsel shall be full and complete authorization and protection in respect of any action taken, suffered or omitted by it hereunder without negligence and in good faith and in reliance thereon.

(f) The Trustee shall be under no obligation to exercise any of the rights or powers vested in it by this Indenture at the request or direction of any of the Holders of Securities unless such Holders shall have offered to the Trustee security or indemnity reasonably satisfactory to the Trustee against the costs, expenses and liabilities which might be incurred by the Trustee in compliance with such request or direction.

(g) The Trustee shall not be bound to make any investigation into the facts or matters stated in any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order, bond, debenture, note, other evidence of indebtedness or other paper or document believed by the Trustee to be genuine and to have been signed or delivered by the proper person.

(h) The Trustee shall not be deemed to have notice of any Default or Event of Default, other than a failure by the Company to make any payment hereunder when due, unless written notice is received by a Responsible Officer of the Trustee at the Corporate Trust Office, and such notice references the Securities generally or the Securities of a particular Series and this Indenture and states that it is a notice of Default or Event of Default.

(i) The permissive rights of the Trustee enumerated herein shall not be construed as duties.

(j) In no event shall the Trustee be responsible or liable for any special, indirect, punitive, incidental or consequential loss or damage of any kind whatsoever (including, but not limited to, lost profits) irrespective of whether the Trustee has been advised of the likelihood of such loss or damage and regardless of the form of action.

(k) Neither the Trustee nor any Agent shall be responsible or liable for any failure or delay in the performance of its obligations under this Indenture arising out of or caused, directly or indirectly, by circumstances beyond its reasonable control, including, without limitation, acts of God; earthquakes; fire; flood; wars; acts of terrorism; civil or military disturbances; sabotage; epidemic; riots; interruptions, loss or malfunctions of utilities, computer (hardware or software) or communications services; accidents; labor disputes; acts of civil or military authority or governmental action; it being understood that each of the Trustee and Agents shall use commercially reasonable efforts which are consistent with accepted practices in the banking industry to resume performance as soon as reasonably practicable under the circumstances.

(l) The Trustee shall not be required to give any bond or surety in respect of the performance of its powers and duties hereunder.

(m) The Trustee may request that the Company deliver an Officers' Certificate setting forth the names of the individuals and/or titles of Officers (with specimen signatures) authorized at such times to take specific actions pursuant to this Indenture.

Section 7.03 Individual Rights of Trustee. The Trustee in its individual or any other capacity may become the owner or pledgee of Securities and may otherwise deal with the Company or an Affiliate of the Company with the same rights it would have if it were not Trustee. Any Agent may do the same with like rights. The Trustee is also subject to Sections 7.10 and 7.11.

Section 7.04 Trustee's Disclaimer. The Trustee makes no representation as to the validity or adequacy of this Indenture or the Securities, it shall not be accountable for the Company's use of the proceeds from the Securities, and it shall not be responsible for any statement in the Securities other than its authentication.

Section 7.05 Notice of Defaults. If a Default or Event of Default occurs and is continuing with respect to the Securities of any Series and if it is known to a Responsible Officer of the Trustee, the Trustee shall mail to each Holder of the Securities of that Series and, if any Bearer Securities are outstanding, publish on one occasion in an Authorized Newspaper, notice of a Default or Event of Default within 90 days after it occurs or, if later, after a Responsible Officer of the Trustee has knowledge of such Default or Event of Default. Except in the case of a Default or Event of Default in payment of principal of or interest on any Security of any Series, the Trustee may withhold the notice if and so long as it in good faith determines that withholding the notice is in the interests of Holders of that Series.

Section 7.06 Reports by Trustee to Holders. Within 60 days after May 15 in each year, the Trustee shall transmit by mail to all Holders, as their names and addresses appear on the register kept by the Registrar and, if any Bearer Securities are outstanding, publish in an Authorized Newspaper, a brief report dated as of such May 15, in accordance with, and to the extent required under, TIA Section 313. A copy of each report at the time of its mailing to Holders of any Series shall be filed with the SEC and each stock exchange on which the Securities of that Series are listed. The Company shall promptly notify the Trustee when Securities of any Series are listed on any stock exchange.

Section 7.07 Compensation and Indemnity. The Company shall pay to the Trustee from time to time compensation for its services as the Company and the Trustee shall from time to time agree upon in writing. The Trustee's compensation shall not be limited by any law on compensation of a trustee of an express trust. The Company shall reimburse the Trustee upon request for all reasonable expenses, disbursements and advances incurred or made by the Trustee. Such expenses shall include the reasonable compensation and expenses of the Trustee's agents and counsel. The Company shall indemnify each of the Trustee and any predecessor Trustee and hold each of them harmless against any loss, liability or expense, including taxes (other than taxes based upon, measured by or determined by the income of the Trustee) incurred by it arising out of or in connection with the acceptance or administration of this trust, including the costs and expenses of defending itself against any claim or liability in connection with the exercise or performance of any of its powers or duties hereunder. This indemnification shall apply to officers, directors, employees, shareholders and agents of the Trustee. The Company need not reimburse any expense or indemnify against any loss or liability incurred by the Trustee or by any officer, director, employee, shareholder or agent of the Trustee through the negligence or bad faith of any such persons. To secure the Company's obligations in this Section, the Trustee shall have a lien prior to the Securities of any Series on all money or property held or collected by the Trustee, except that held in trust to pay principal of and interest on particular Securities of that Series. When the Trustee incurs expenses or renders services after an Event of Default specified in Section 6.01(d) or (e) occurs, the expenses and the compensation for the services are intended to constitute expenses of administration under any insolvency, bankruptcy or similar law. The provisions of this Section shall survive the resignation or removal of the Trustee and the termination of this Indenture.

Section 7.08 Replacement of Trustee. A resignation or removal of the Trustee and appointment of a successor Trustee shall become effective only upon the successor Trustee's acceptance of appointment as provided in this Section. The Trustee may resign with respect to the Securities of one or more Series by so notifying the Company at least 30 days prior to the date of the proposed resignation. The Holders of a majority in principal amount of the Securities of any Series may remove the Trustee with respect to that Series by so notifying the Trustee and the Company. The Company may remove the Trustee with respect to Securities of one or more Series if:

- (a) the Trustee fails to comply with Section 7.10;

(b) the Trustee is adjudged bankrupt or insolvent or an order for relief is entered with respect to the Trustee under any insolvency, bankruptcy or similar law;

(c) a custodian or public officer takes charge of the Trustee or its property; or

(d) the Trustee becomes incapable of acting.

If the Trustee resigns or is removed or if a vacancy exists in the office of Trustee for any reason, the Company shall promptly appoint a successor Trustee.

If a successor Trustee with respect to the Securities of any one or more Series does not take office within 60 days after the retiring Trustee resigns or is removed, the retiring Trustee, the Company or the Holders of at least a majority in principal amount of the Securities of the applicable Series may petition any court of competent jurisdiction for the appointment of a successor Trustee.

If a successor trustee is appointed with respect to the Securities of one or more (but not all) series, the Issuer, the predecessor trustee and each successor trustee with respect to the Securities of any applicable series shall execute and deliver an indenture supplemental hereto which shall contain such provisions as shall be deemed necessary or desirable to confirm that all the rights, powers, trusts and duties of the predecessor trustee with respect to the Securities of any series as to which the predecessor trustee is not retiring shall continue to be vested in the predecessor trustee, and shall add to or change any of the provisions of this Indenture as shall be necessary to provide for or facilitate the administration of the trusts hereunder by more than one trustee, it being understood that nothing herein or in such supplemental indenture shall constitute such trustees co-trustees of the same trust and that each such trustee shall be trustee of a trust or trusts under separate indentures.

No successor trustee with respect to any series of Securities shall accept appointment as provided in this Section 7.08 unless at the time of such acceptance such successor trustee shall be qualified under the provisions of Section 310(b) of the Trust Indenture Act of 1939 and eligible under the provisions of Section 310(a) of the Trust Indenture Act of 1939.

A successor Trustee shall deliver a written acceptance of its appointment to the retiring Trustee and to the Company. Immediately after that, the retiring Trustee shall transfer all property held by it as Trustee to the successor Trustee subject to the lien provided for in Section 7.07, the resignation or removal of the retiring Trustee shall become effective, and the successor Trustee shall have all the rights, powers and duties of the Trustee with respect to each Series of Securities for which it is acting as Trustee under this Indenture. A successor Trustee shall mail a notice of its succession to each Holder of each such Series and, if any Bearer Securities are outstanding, publish such notice on one occasion in an Authorized Newspaper. Notwithstanding replacement of the Trustee pursuant to this Section 7.08, the Company's obligations under Section 7.07 hereof shall continue for the benefit of the retiring Trustee with respect to expenses and liabilities incurred by it prior to the date of such replacement.

Section 7.09 Successor Trustee by Merger, etc. If the Trustee consolidates with, merges or converts into, or transfers all or substantially all of its corporate trust business (including administration of this Indenture) to, another person, the successor person without any further act shall be the successor Trustee.

Section 7.10 Eligibility; Disqualification. This Indenture shall always have a Trustee who satisfies the requirements of TIA Section 310(a)(1), (2) and (5) and has a combined capital and surplus (together with its Affiliates) of at least \$50,000,000. The Trustee shall comply with TIA Section 310(b).

Section 7.11 Preferential Collection of Claims Against Company. The Trustee is subject to TIA Section 311(a), excluding any creditor relationship listed in TIA Section 311(b). A Trustee who has resigned or been removed shall be subject to TIA Section 311(a) to the extent indicated.

ARTICLE VIII
SATISFACTION AND DISCHARGE; DEFEASANCE

Section 8.01 Satisfaction and Discharge of Indenture.

This Indenture shall upon Company Order cease to be of further effect (except as hereinafter provided in this Section 8.01), and the Trustee, upon Company Request and at the expense of the Company, shall execute proper instruments acknowledging satisfaction and discharge of this Indenture, when

(a) any of the following shall have occurred:

(i) no Securities have been issued hereunder;

(ii) all Securities theretofore authenticated and delivered (other than Securities that have been destroyed, lost or stolen and that have been replaced or paid) have been delivered to the Trustee for cancellation; or

(iii) all such Securities not theretofore delivered to the Trustee for cancellation (1) have become due and payable, or (2) will become due and payable at their Stated Maturity within one year, or (3) are to be called for redemption within one year under arrangements satisfactory to the Trustee for the giving of notice of redemption by the Trustee in the name, and at the expense, of the Company;

and the Company has irrevocably deposited or caused to be deposited with the Trustee as trust funds in trust an amount sufficient for the purpose of paying and discharging the entire indebtedness on such Securities not theretofore delivered to the Trustee for cancellation, for principal and interest to the date of such deposit (in the case of Securities which have become due and payable on or prior to the date of such deposit) or to the Stated Maturity or redemption date, as the case may be;

(b) the Company has paid or caused to be paid all other sums payable hereunder by the Company; and

(c) the Company has delivered to the Trustee an Officers' Certificate and an Opinion of Counsel, each stating that all conditions precedent herein provided for relating to the satisfaction and discharge of this Indenture have been complied with.

Notwithstanding the satisfaction and discharge of this Indenture, the obligations of the Company to the Trustee under Section 7.07 and, if money shall have been deposited with the Trustee pursuant to clause (a) of this Section, the provisions of Sections 2.04, 2.05, 2.07, 2.08, 8.01, 8.02 and 8.05 shall survive.

Section 8.02 Application of Trust Funds; Indemnification.

(a) Subject to the provisions of Section 8.05, all money deposited with the Trustee pursuant to Section 8.01, all money and U.S. Government Obligations or Foreign Government Obligations deposited with the Trustee pursuant to Section 8.03 or 8.04 and all money received by the Trustee in respect of U.S. Government Obligations or Foreign Government Obligations deposited with the Trustee pursuant to Section 8.03 or 8.04, shall be held in trust and applied by it, in accordance with the provisions of the Securities and this Indenture, to the payment, either directly or through any Paying Agent (other than the Company acting as its own Paying Agent) as the Trustee may determine, to the persons entitled thereto, of the principal and interest for whose payment such money has been deposited with or received by the Trustee or analogous payments as contemplated by Sections 8.03 or 8.04; but such money need not be segregated from other funds except to the extent required by law.

(b) The Company shall pay and shall indemnify the Trustee against any tax, fee or other charge imposed on or assessed against U.S. Government Obligations or Foreign Government Obligations deposited

pursuant to Sections 8.03 or 8.04 or the interest and principal received in respect of such obligations other than any payable by or on behalf of Holders.

(c) The Trustee shall deliver or pay to the Company from time to time upon Company Request any U.S. Government Obligations or Foreign Government Obligations or money held by it as provided in Sections 8.03 or 8.04 which, in the opinion of a nationally recognized firm of independent certified public accountants expressed in a written certification thereof delivered to the Trustee, are then in excess of the amount thereof which then would have been required to be deposited for the purpose for which such U.S. Government Obligations or Foreign Government Obligations or money were deposited or received. This provision shall not authorize the sale by the Trustee of any U.S. Government Obligations or Foreign Government Obligations held under this Indenture.

(d) Notwithstanding anything to the contrary herein, if the Trustee cannot reasonably deal with such Foreign Government Obligations, upon notification by the Trustee of such inability, the Company shall appoint a Paying Agent with respect to such Foreign Government Obligations. The Trustee shall have no duty to supervise, and shall in no event be liable for, the acts or omissions of such Paying Agent.

Section 8.03 Legal Defeasance of Securities of any Series. Unless this Section 8.03 is otherwise specified, pursuant to Section 2.02(s), to be inapplicable to Securities of any Series, the Company shall be deemed to have paid and discharged the entire indebtedness on all the outstanding Securities of any Series on the 91st day after the date of the deposit referred to in subparagraph (d) hereof, and the provisions of this Indenture, as it relates to such outstanding Securities of such Series, shall no longer be in effect (and the Trustee, at the expense of the Company, shall, at Company Request, execute proper instruments acknowledging the same), except as to:

(a) the rights of Holders of Securities of such Series to receive, from the trust funds described in subparagraph (d) hereof, (i) payment of the principal of (and premium, if any) and each installment of principal of and interest on the outstanding Securities of such Series on the Stated Maturity of such principal or installment of principal (and premium, if any) or interest, and (ii) the benefit of any mandatory sinking fund payments applicable to the Securities of such Series on the day on which such payments are due and payable in accordance with the terms of this Indenture and the Securities of such Series; and

(b) the provisions of Sections 2.04, 2.05, 2.07, 2.08, 8.02, 8.03 and 8.05; and

(c) the rights and immunities of the Trustee hereunder;

provided that, the following conditions shall have been satisfied:

(i) with reference to this Section 8.03, the Company shall have deposited or caused to be irrevocably deposited (except as provided in Section 8.02(c)) with the Trustee as trust funds in trust for the purpose of making the following payments, specifically pledged as security for and dedicated solely to the benefit of the Holders of such Securities (i) in the case of Securities of such Series denominated in Dollars, cash in Dollars and/or U.S. Government Obligations, or (ii) subject to Section 8.02(d) herein, in the case of Securities of such Series denominated in a Foreign Currency (other than a composite currency), money and/or Foreign Government Obligations, which through the payment of interest and principal (and premium, if any) in respect thereof in accordance with their terms, will provide (and without reinvestment and assuming no tax liability will be imposed on such Trustee), not later than one day before the due date of any payment of money, an amount in cash, sufficient, in the opinion of a nationally recognized firm of independent public accountants expressed in a written certification thereof delivered to the Trustee, to pay and discharge each installment of principal of and interest, if any, on and any mandatory sinking fund payments in respect of all the Securities of such Series on the dates such installments of interest or principal (and premium, if any) and such sinking fund payments are due;

(ii) such deposit will not result in a breach or violation of, or constitute a default under, this Indenture or any other agreement or instrument to which the Company is a party or by which it is bound;

(iii) no Default or Event of Default with respect to the Securities of such Series shall have occurred and be continuing on the date of such deposit or during the period ending on the 91st day after such date;

(iv) the Company shall have delivered to the Trustee an Officers' Certificate and an Opinion of Counsel to the effect that (i) the Company has received from, or there has been published by, the Internal Revenue Service a ruling, or (ii) since the date of execution of this Indenture, there has been a change in the applicable Federal income tax law, in either case to the effect that, and based thereon such Opinion of Counsel shall confirm that, the Holders of the Securities of such Series will not recognize income, gain or loss for Federal income tax purposes as a result of such deposit, defeasance and discharge and will be subject to Federal income tax on the same amounts and in the same manner and at the same times as would have been the case if such deposit, defeasance and discharge had not occurred;

(v) the Company shall have delivered to the Trustee an Officers' Certificate stating that the deposit was not made by the Company with the intent of preferring the Holders of the Securities of such Series over any other creditors of the Company or with the intent of defeating, hindering, delaying or defrauding any other creditors of the Company;

(vi) the Company shall have delivered to the Trustee an Officers' Certificate and an Opinion of Counsel, each stating that all conditions precedent provided for relating to the defeasance contemplated by this Section have been complied with; and

(vii) such defeasance shall not result in the trust arising from such deposit constituting an investment company within the meaning of the Investment Company Act of 1940, as amended, unless such trust shall be registered under such Act or exempt from registration thereunder.

Section 8.04 Covenant Defeasance. Unless this Section 8.04 is otherwise specified, pursuant to Section 2.02(s), to be inapplicable to Securities of any Series, on and after the 91st day after the date of the deposit referred to in subparagraph (a) hereof, the Company may omit to comply with respect to the Securities of any Series with any term, provision or condition set forth under Sections 4.02, 4.03, and 5.01 as well as any additional covenants specified in a supplemental indenture for such Series of Securities or a Board Resolution or an Officers' Certificate delivered pursuant to Section 2.02 (and the failure to comply with any such covenants shall not constitute a Default or Event of Default with respect to such Series under Section 6.01) and the occurrence of any event specified in a supplemental indenture for such Series of Securities or a Board Resolution or an Officers' Certificate delivered pursuant to Section 2.02 and designated as an Event of Default shall not constitute a Default or Event of Default hereunder, with respect to the Securities of such Series, provided that the following conditions shall have been satisfied:

(a) with reference to this Section 8.04, the Company has deposited or caused to be irrevocably deposited (except as provided in Section 8.02(c)) with the Trustee as trust funds in trust for the purpose of making the following payments specifically pledged as security for, and dedicated solely to, the benefit of the Holders of such Securities (i) in the case of Securities of such Series denominated in Dollars, cash in Dollars and/or U.S. Government Obligations, or (ii) in the case of Securities of such Series denominated in a Foreign Currency (other than a composite currency), money and/or, subject to Section 8.02(d) herein, Foreign Government Obligations, which through the payment of interest and principal (and premium, if any) in respect thereof in accordance with their terms, will provide (and without reinvestment and assuming no tax liability will be imposed on such Trustee), not later than one day before the due date of any payment of money, an amount in cash, sufficient, in the opinion of a nationally recognized firm of independent certified public accountants expressed in a written certification thereof delivered to the Trustee, to pay and discharge each installment of principal (and premium, if any) of and interest, if any, on and any mandatory sinking fund payments in respect of the Securities of such Series on the dates such installments of interest or principal (and premium, if any) and such sinking fund payments are due;

(b) such deposit will not result in a breach or violation of, or constitute a default under, this Indenture or any other agreement or instrument to which the Company is a party or by which it is bound;

(c) no Default or Event of Default with respect to the Securities of such Series shall have occurred and be continuing on the date of such deposit or during the period ending on the 91st day after such date;

(d) the Company shall have delivered to the Trustee an Opinion of Counsel to the effect that Holders of the Securities of such Series will not recognize income, gain or loss for federal income tax purposes as a result of such deposit and covenant defeasance and will be subject to federal income tax on the same amounts, in the same manner and at the same times as would have been the case if such deposit and covenant defeasance had not occurred;

(e) the Company shall have delivered to the Trustee an Officers' Certificate and an Opinion of Counsel, each stating that all conditions precedent herein provided for relating to the covenant defeasance contemplated by this Section have been complied with; and

(f) Such defeasance shall not result in the trust arising from such deposit constituting an investment company within the meaning of the Investment Company Act of 1940, as amended, unless such trust shall be registered under such Act or exempt from registration thereunder.

Section 8.05 Repayment to Company. The Trustee and the Paying Agent shall pay to the Company, upon Company Request, any money held by them for the payment of principal (and premium, if any) and interest that remains unclaimed for two years, and after such time, Holders entitled to the money must look to the Company for payment as general creditors unless an applicable abandoned property law designates another person.

Section 8.06 Reinstatement. If the Trustee or the Paying Agent is unable to apply any money deposited with respect to Securities of any series in accordance with Section 8.01 by reason of any legal proceeding or by reason of any order or judgment of any court or governmental authority enjoining, restraining or otherwise prohibiting such application, the obligations of the Company under this Indenture with respect to the Securities of such series and under the Securities of such series shall be revived and reinstated as though no deposit had occurred pursuant to Section 8.01 until such time as the Trustee or the Paying Agent is permitted to apply all such money in accordance with Section 8.01; provided, however, that if the Company has made any payment of principal of, premium (if any) or interest on any Additional Amounts with respect to any Securities because of the reinstatement of its obligations, the Company shall be subrogated to the rights of the Holders of such Securities to receive such payment from the money held by the Trustee or the Paying Agent; provided, however, that the Trustee shall not be responsible for monitoring or enforcing the accuracy of sufficiency of such Additional Amounts. The Company shall provide the Trustee and Paying Agent with an Officers' Certificate describing any Additional Amounts to be included in any payment.

ARTICLE IX AMENDMENTS AND WAIVERS

Section 9.01 Without Consent of Holders. The Company and the Trustee may amend or supplement this Indenture or the Securities of one or more Series without the consent of any Holder:

(a) to evidence the succession of another person to the Company under this Indenture and the Securities and the assumption by any such successor person of the obligations of the Company hereunder and under the Securities;

(b) to add or remove covenants of the Company for the benefit of the Holders of all or any Series of Securities (and if such covenants are to be for the benefit of less than all Series of Securities, stating that such covenants are expressly being included for the benefit of such Series) or to surrender any right or power herein conferred upon the Company provided such action does not adversely affect the interests of the Holders;

(c) to add any additional Events of Default;

(d) to add to or change any of the provisions of this Indenture to such extent as shall be necessary to permit or facilitate the issuance of Securities in bearer form, registrable or not registrable as to principal, and with or without interest coupons, or to permit or facilitate the issuance of Securities in uncertificated form;

(e) to add to, change or eliminate any of the provisions of this Indenture in respect of one or more Series of Securities, provided that any such addition, change or elimination (A) shall neither (i) apply to any Security of any Series created prior to the execution of such supplemental indenture and entitled to the benefit of such provision nor (ii) modify the rights of the Holder of any such Security with respect to such provision or (B) shall become effective only when there is no such Security Outstanding;

(f) to establish the forms or terms of the Securities of any Series issued pursuant to the terms hereof;

(g) to cure any ambiguity or correct any inconsistency in this Indenture;

(h) to evidence and provide for the acceptance of appointment hereunder by a successor Trustee with respect to the Securities of one or more Series and to add to or change any of the provisions of this Indenture as shall be necessary to provide for or facilitate the administration of the trusts hereunder by more than one Trustee;

(i) to qualify this Indenture under the Trust Indenture Act;

(j) to provide for uncertificated Securities in addition to certificated Securities;

(k) [Reserved]; and

(l) to comply with the rules or regulations of any securities exchange or automated quotation system on which any of the Securities may be listed or traded.

Section 9.02 With Consent of Holders. The Company and the Trustee may enter into a supplemental indenture with the written consent of the Holders of at least a majority in principal amount of the outstanding Securities of each Series affected by such supplemental indenture (including consents obtained in connection with a tender offer or exchange offer for the Securities of such Series), for the purpose of adding any provisions to or changing in any manner or eliminating any of the provisions of this Indenture or of any supplemental indenture or of modifying in any manner the rights of the Holders of each such Series. Except as provided in Section 6.13, the Holders of at least a majority in principal amount of the outstanding Securities of any Series by notice to the Trustee (including consents obtained in connection with a tender offer or exchange offer for the Securities of such Series) may waive compliance by the Company with any provision of this Indenture or the Securities with respect to such Series. It shall not be necessary for the consent of the Holders of Securities under this Section 9.02 to approve the particular form of any proposed supplemental indenture or waiver, but it shall be sufficient if such consent approves the substance thereof. After a supplemental indenture or waiver under this section becomes effective, the Company shall mail to the Holders of Securities affected thereby and, if any Bearer Securities affected thereby are outstanding, publish on one occasion in an Authorized Newspaper, a notice briefly describing the supplemental indenture or waiver. Any failure by the Company to mail or publish such notice, or any defect therein, shall not, however, in any way impair or affect the validity of any such supplemental indenture or waiver.

Section 9.03 Limitations. Without the consent of each Holder affected, an amendment or waiver may not:

(a) reduce the amount of Securities whose Holders must consent to an amendment, supplement or waiver;

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- (b) reduce the rate of or extend the time for payment of interest (including default interest) on any Security;
 - (c) reduce the principal or change the Stated Maturity of any Security or reduce the amount of, or postpone the date fixed for, the payment of any sinking fund;
 - (d) reduce the principal amount of Discount Securities payable upon acceleration of the maturity thereof;
 - (e) waive a Default or Event of Default in the payment of the principal of (or premium, if any) or interest, if any, on any Security (except a rescission of acceleration of the Securities of any Series by the Holders of at least a majority in principal amount of the outstanding Securities of such Series and a waiver of the payment default that resulted from such acceleration);
 - (f) make the principal of or interest, if any, on any Security payable in any currency other than that stated in the Security;
 - (g) make any change in Sections 6.08, 6.13, or 9.03; or
 - (h) waive a redemption payment with respect to any Security.

Section 9.04 Compliance with Trust Indenture Act. Every amendment to this Indenture or the Securities of one or more Series shall be set forth in a supplemental indenture hereto that complies with the TIA as then in effect.

Section 9.05 Revocation and Effect of Consents. Until an amendment is set forth in a supplemental indenture or a waiver becomes effective, a consent to it by a Holder of a Security is a continuing consent by the Holder and every subsequent Holder of a Security or portion of a Security that evidences the same debt as the consenting Holder's Security, even if notation of the consent is not made on any Security. However, any such Holder or subsequent Holder may revoke the consent as to his Security or portion of a Security if the Trustee receives the notice of revocation before the date of the supplemental indenture or the date the waiver becomes effective. Any amendment or waiver once effective shall bind every Holder of each Series affected by such amendment or waiver unless it is of the type described in any of clauses (a) through (h) of Section 9.03. In that case, the amendment or waiver shall bind each Holder of a Security who has consented to it and every subsequent Holder of a Security or portion of a Security that evidences the same debt as the consenting Holder's Security.

Section 9.06 Notation on or Exchange of Securities. The Trustee may place an appropriate notation about an amendment or waiver on any Security of any Series thereafter authenticated. The Company in exchange for Securities of that Series may issue and execute and the Trustee shall authenticate, upon Company Order, new Securities of that Series that reflect the amendment or waiver.

Section 9.07 Trustee Protected. In executing, or accepting the additional trusts created by, any supplemental indenture permitted by this Article or the modifications thereby of the trusts created by this Indenture, the Trustee shall receive, in addition to the documents required by Section 10.04, and (subject to Section 7.01) shall be fully protected in relying upon, an Opinion of Counsel stating that all conditions precedent in this Indenture to the execution of such supplemental indenture, under this Indenture, have been complied with, such supplemental indenture is authorized under this Indenture, and, such supplemental indenture is the valid and legally binding obligation of the Company. The Trustee may, but shall not be obligated to, sign any supplemental indenture that affects the Trustee's own rights, duties, powers, liabilities or immunities under this Indenture or otherwise.

**ARTICLE X
MISCELLANEOUS**

Section 10.01 Trust Indenture Act Controls. If any provision of this Indenture limits, qualifies or conflicts with another provision which is required or deemed to be included in this Indenture by the TIA, such required or deemed provision shall control.

Section 10.02 Notices.

(a) Any notice or communication by the Company or the Trustee to the other, or by a Holder to the Company or the Trustee, is duly given if in writing and delivered in person or mailed by first-class mail or sent by facsimile addressed as follows:

if to the Company:

BioAmber Inc.
1250 Rene Levesque West, Suite 4110
Montreal, Quebec
Canada H3B 4W8
Attn: Chief Financial Officer
Fax: 514-844-1414

With a copy to:

Goodwin Procter LLP
Exchange Place
Boston, MA 02109
Attn: Jocelyn M. Arel and Michael J. Minahan
Fax: 617-523-1231

if to the Trustee:

(b) The Company or the Trustee by notice to the other may designate additional or different addresses for subsequent notices or communications. Any notice or communication to a Holder shall be mailed by first-class mail to its address shown on the register kept by the Registrar and, if any Bearer Securities are outstanding, published in an Authorized Newspaper. Failure to mail a notice or communication to a Holder of any Series or any defect in it shall not affect its sufficiency with respect to other Holders of that or any other Series. If a notice or communication is mailed or published in the manner provided above, within the time prescribed, it is duly given, whether or not the Holder receives it. If the Company mails a notice or communication to Holders, it shall mail a copy to the Trustee and each Agent at the same time.

(c) Unless otherwise provided in this Indenture, any notice or demand that by any provision of this Indenture is required or permitted to be given or served by the Company may, upon Company Request received by the Trustee not fewer than ten (10) Business Days prior (or such shorter period of time as may be acceptable to the Trustee) to the date on which such notice must be given or served, be given or served by the Trustee in the name of and at the expense of the Company.

Section 10.03 Communication by Holders with Other Holders. Holders of any Series may communicate pursuant to TIA Section 312(b) with other Holders of that Series or any other Series with respect to their rights under this Indenture or the Securities of that Series or all Series. The Company, the Trustee, the Registrar and anyone else shall have the protection of TIA Section 312(c).

Section 10.04 Certificate and Opinion as to Conditions Precedent. Upon any request or application by the Company to the Trustee to take any action under this Indenture, the Company shall furnish to the Trustee:

(a) an Officers' Certificate (which shall include the statements set forth in Section 10.05 hereof) stating that, in the opinion of the signers, all conditions precedent, if any, provided for in this Indenture relating to the proposed action have been complied with; and

(b) an Opinion of Counsel (which shall include the statements set forth in Section 10.05 hereof) stating that, in the opinion of such counsel, all such conditions precedent have been complied with.

Section 10.05 Statements Required in Certificate or Opinion. Each certificate or opinion with respect to compliance with a condition or covenant provided for in this Indenture (other than a certificate provided pursuant to TIA Section 314(a)(4)) shall comply with the provisions of TIA Section 314(e) and shall include:

(a) a statement that the person making such certificate or opinion has read such covenant or condition and the definitions relating thereto;

(b) a brief statement as to the nature and scope of the examination or investigation upon which the statements or opinions contained in such certificate or opinion are based;

(c) a statement that, in the opinion of such person, he has made such examination or investigation as is necessary to enable him to express an informed opinion as to whether or not such covenant or condition has been complied with; and

(d) a statement as to whether or not, in the opinion of such person, such condition or covenant has been complied with.

Section 10.06 Rules by Trustee and Agents. The Trustee may make reasonable rules for action by or a meeting of Holders of one or more Series. Any Agent may make reasonable rules and set reasonable requirements for its functions.

Section 10.07 Legal Holidays. Unless otherwise provided by Board Resolution, Officers' Certificate or supplemental indenture hereto for a particular Series, a "Legal Holiday" is any day that is not a Business Day. If a payment date is a Legal Holiday at a place of payment, payment may be made at that place on the next succeeding day that is not a Legal Holiday, and no interest shall accrue for the intervening period.

Section 10.08 No Recourse Against Others. A director, officer, employee or stockholder, as such, of the Company shall not have any liability for any obligations of the Company under the Securities or the Indenture or for any claim based on, in respect of or by reason of such obligations or their creation. Each Holder by accepting a Security waives and releases all such liability. The waiver and release are part of the consideration for the issue of the Securities.

Section 10.09 Counterparts. This Indenture may be executed in any number of counterparts and by the parties hereto in separate counterparts, each of which when so executed shall be deemed to be an original and all of which taken together shall constitute one and the same agreement. The exchange of copies of this Indenture and of signature pages by facsimile or PDF transmission shall constitute effective execution and delivery of this Indenture as to the parties hereto and may be used in lieu of the original Indenture for all purposes. Signatures of the parties hereto transmitted by facsimile or PDF shall be deemed to be their original signatures for all purposes.

Section 10.10 Governing Laws. This Indenture and the Securities will be governed by, and construed in accordance with, the internal laws of the State of New York, without regard to conflict of law principles that would result in the application of any law other than the laws of the State of New York.

Section 10.11 No Adverse Interpretation of Other Agreements. This Indenture may not be used to interpret another indenture, loan or debt agreement of the Company or a Subsidiary of the Company. Any such indenture, loan or debt agreement may not be used to interpret this Indenture.

Section 10.12 Successors. All agreements of the Company in this Indenture and the Securities shall bind its successor. All agreements of the Trustee in this Indenture shall bind its successor.

Section 10.13 Severability. In case any provision in this Indenture or in the Securities shall be invalid, illegal or unenforceable, the validity, legality and enforceability of the remaining provisions shall not in any way be affected or impaired thereby.

Section 10.14 Table of Contents, Headings, Etc. The Table of Contents, Cross-Reference Table, and headings of the Articles and Sections of this Indenture have been inserted for convenience of reference only, are not to be considered a part hereof, and shall in no way modify or restrict any of the terms or provisions hereof.

Section 10.15 Securities in a Foreign Currency. Unless otherwise specified in a Board Resolution, a supplemental indenture hereto or an Officers' Certificate delivered pursuant to Section 2.02 of this Indenture with respect to a particular Series of Securities, whenever for purposes of this Indenture any action may be taken by the

Holders of a specified percentage in aggregate principal amount of Securities of all Series or all Series affected by a particular action at the time outstanding and, at such time, there are outstanding Securities of any Series which are denominated in a coin or currency other than Dollars, then the principal amount of Securities of such Series which shall be deemed to be outstanding for the purpose of taking such action shall be that amount of Dollars that could be obtained for such amount at the Market Exchange Rate at such time. For purposes of this Section 10.15, "*Market Exchange Rate*" shall mean the noon Dollar buying rate in New York City for cable transfers of that currency as published by the Federal Reserve Bank of New York. If such Market Exchange Rate is not available for any reason with respect to such currency, the Company shall use, in its sole discretion and without liability on its part, such quotation of the Federal Reserve Bank of New York as of the most recent available date, or quotations from one or more major banks in The City of New York or in the country of issue of the currency in question or such other quotations as the Company, shall deem appropriate. The provisions of this paragraph shall apply in determining the equivalent principal amount in respect of Securities of a Series denominated in currency other than Dollars in connection with any action taken by Holders of Securities pursuant to the terms of this Indenture. All decisions and determinations of the Company regarding the Market Exchange Rate or any alternative determination provided for in the preceding paragraph shall be in its sole discretion and shall, in the absence of manifest error, to the extent permitted by law, be conclusive for all purposes and irrevocably binding upon the Company, the Trustee and all Holders. The Trustee shall be fully justified and protected and shall incur no liability in relying and acting upon information received by it from the Company and shall not otherwise have any duty or obligation to determine the accuracy or validity of such information independent of the Company. Notwithstanding anything to the contrary herein, if the Trustee cannot reasonably process a payment in a Foreign Currency, upon notification by the Trustee of such inability, the Company shall appoint a Paying Agent for such payment in Foreign Currency. The Trustee shall have no duty to supervise, and shall in no event be liable for, the acts or omissions of such Paying Agent.

Section 10.16 Judgment Currency. The Company agrees, to the fullest extent that it may effectively do so under applicable law, that (a) if for the purpose of obtaining judgment in any court it is necessary to convert the sum due in respect of the principal of or interest or other amount on the Securities of any Series (the "*Required Currency*") into a currency in which a judgment will be rendered (the "*Judgment Currency*"), the rate of exchange used shall be the rate at which in accordance with normal banking procedures the Company could purchase in The City of New York the Required Currency with the Judgment Currency on the day on which final unappealable judgment is entered, unless such day is not a New York Banking Day, then the rate of exchange used shall be the rate at which in accordance with normal banking procedures the Company could purchase in The City of New York the Required Currency with the Judgment Currency on the New York Banking Day preceding the day on which final unappealable judgment is entered and (b) its obligations under this Indenture to make payments in the Required Currency (i) shall not be discharged or satisfied by any tender, any recovery pursuant to any judgment (whether or not entered in accordance with subsection (a)), in any currency other than the Required Currency, except to the extent that such tender or recovery shall result in the actual receipt, by the payee, of the full amount of the Required Currency expressed to be payable in respect of such payments, (ii) shall be enforceable as an alternative or additional cause of action for the purpose of recovering in the Required Currency the amount, if any, by which such actual receipt shall fall short of the full amount of the Required Currency so expressed to be payable, and (iii) shall not be affected by judgment being obtained for any other sum due under this Indenture. For purposes of the foregoing, "*New York Banking Day*" means any day except a Saturday, Sunday or a legal holiday in The City of New York on which banking institutions are authorized or required by law, regulation or executive order to close.

Section 10.17 U.S.A. Patriot Act. The Company acknowledges that in accordance with Section 326 of the U.S.A. Patriot Act, the Trustee, like all financial institutions, and in order to help fight the funding of terrorism and money laundering, is required to obtain, verify, and record information that identifies each person or legal entity that establishes a relationship or opens an account with the Trustee. The Company agrees that it will provide the Trustee with such information as it may reasonably request as required in order for the Trustee to satisfy the requirements of the U.S.A. Patriot Act.

Section 10.18 Waiver of Jury Trial. EACH OF THE COMPANY AND THE TRUSTEE HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING AS BETWEEN THE COMPANY AND THE TRUSTEE ONLY ARISING OUT OF OR RELATING TO THIS INDENTURE OR THE SECURITIES.

**ARTICLE XI
SINKING FUNDS**

Section 11.01 Applicability of Article. The provisions of this Article shall be applicable to any sinking fund for the retirement of the Securities of a Series, except as otherwise permitted or required by any form of Security of such Series issued pursuant to this Indenture. The minimum amount of any sinking fund payment provided for by the terms of the Securities of any Series is herein referred to as a “*mandatory sinking fund payment*” and any other amount provided for by the terms of Securities of such Series is herein referred to as an “*optional sinking fund payment*.” If provided for by the terms of Securities of any Series, the cash amount of any sinking fund payment may be subject to reduction as provided in Section 11.02. Each sinking fund payment shall be applied to the redemption of Securities of any Series as provided for by the terms of the Securities of such Series.

Section 11.02 Satisfaction of Sinking Fund Payments with Securities. The Company may, in satisfaction of all or any part of any sinking fund payment with respect to the Securities of any Series to be made pursuant to the terms of such Securities (1) deliver outstanding Securities of such Series to which such sinking fund payment is applicable (other than any of such Securities previously called for mandatory sinking fund redemption) and (2) apply as credit Securities of such Series to which such sinking fund payment is applicable and which have been repurchased by the Company or redeemed either at the election of the Company pursuant to the terms of such Series of Securities (except pursuant to any mandatory sinking fund) or through the application of permitted optional sinking fund payments or other optional redemptions pursuant to the terms of such Securities, provided that such Securities have not been previously so credited. Such Securities shall be received by the Trustee, together with an Officers’ Certificate with respect thereto, not later than 15 days prior to the date on which the Trustee begins the process of selecting Securities for redemption, and shall be credited for such purpose by the Trustee at the price specified in such Securities for redemption through operation of the sinking fund and the amount of such sinking fund payment shall be reduced accordingly. If as a result of the delivery or credit of Securities in lieu of cash payments pursuant to this Section 11.02, the principal amount of Securities of such Series to be redeemed in order to exhaust the aforesaid cash payment shall be less than \$100,000, the Trustee need not call Securities of such Series for redemption, except upon receipt of a Company Order that such action be taken, and such cash payment shall be held by the Trustee or a Paying Agent and applied to the next succeeding sinking fund payment, provided, however, that the Trustee or such Paying Agent shall from time to time upon receipt of a Company Order pay over and deliver to the Company any cash payment so being held by the Trustee or such Paying Agent upon delivery by the Company to the Trustee of Securities of that Series purchased by the Company having an unpaid principal amount equal to the cash payment required to be released to the Company.

Section 11.03 Redemption of Securities for Sinking Fund. Not less than 45 days prior to each sinking fund payment date for any Series of Securities, the Company will deliver to the Trustee an Officers’ Certificate specifying the amount of the next ensuing mandatory sinking fund payment for that Series pursuant to the terms of that Series, the portion thereof, if any, which is to be satisfied by payment of cash and the portion thereof, if any, which is to be satisfied by delivering and crediting of Securities of that Series pursuant to Section 11.02, and the optional amount, if any, to be added in cash to the next ensuing mandatory sinking fund payment, and the Company shall thereupon be obligated to pay the amount therein specified. Not less than 30 days (unless otherwise indicated in the Board Resolution, Officers’ Certificate or supplemental indenture in respect of a particular Series of Securities) before each such sinking fund payment date the Trustee shall select the Securities to be redeemed upon such sinking fund payment date in the manner specified in Section 3.02 and cause notice of the redemption thereof to be given in the name of and at the expense of the Company in the manner provided in Section 3.03. Such notice having been duly given, the redemption of such Securities shall be made upon the terms and in the manner stated in Sections 3.04, 3.05 and 3.06. Prior to any sinking fund payment date, the Company shall pay to the Trustee or a Paying Agent (or, if the Company is acting as its own Paying Agent, segregate and hold in trust) in cash a sum equal to any interest that will accrue to the date fixed for redemption of Securities or portions thereof to be redeemed on such sinking fund payment date pursuant to this Section.

ARTICLE XII
SUBORDINATION OF SECURITIES

Section 12.01 Agreement of Subordination. The Company covenants and agrees, and each holder of Securities issued hereunder by its acceptance thereof likewise covenants and agrees, that all Securities shall be issued subject to the provisions of this Article 12; and each Holder, whether upon original issue or upon transfer or assignment thereof, accepts and agrees to be bound by such provisions.

The payment of the principal of, premium, if any, and interest on all Securities issued hereunder shall, to the extent and in the manner hereinafter set forth, be subordinated and subject in right of payment to the prior payment in full of all Senior Indebtedness of the Company, whether outstanding at the date of this Indenture or thereafter incurred.

The provisions of this Article 12 define the subordination of the Securities, as obligations of the Company, with respect to Senior Indebtedness of the Company.

No provision of this Article 12 shall prevent the occurrence of any Default or Event of Default hereunder.

Section 12.02 Payments to Holders. In the event and during the continuation of any default in the payment of principal, premium, interest or any other payment due on any Senior Indebtedness of the Company continuing beyond the period of grace, if any, specified in the instrument or lease evidencing such Senior Indebtedness of the Company, then, unless and until such default shall have been cured or waived or shall have ceased to exist, no payment shall be made by the Company with respect to the principal of, or premium, if any, or interest on the Securities, except sinking fund obligations satisfied by credit of acquired Securities under Section 11.02 prior to the happening of such default and payments made pursuant to Article 8 hereof from monies deposited with the Trustee pursuant thereto prior to the happening of such default.

Upon any payment by the Company, or distribution of assets of the Company of any kind or character, whether in cash, property or securities, to creditors upon any dissolution or winding-up or liquidation or reorganization of the Company, whether voluntary or involuntary or in bankruptcy, insolvency, receivership or other proceedings, all amounts due or to become due upon all Senior Indebtedness of the Company shall first be paid in full, or payment thereof provided for in money in accordance with its terms, before any payment is made on account of the principal (and premium, if any) or interest on the Securities (except payments made pursuant to Article 10 hereof from monies deposited with the Trustee pursuant thereto prior to the happening of such dissolution, winding-up, liquidation or reorganization); and upon any such dissolution or winding-up or liquidation or reorganization any payment by the Company, or distribution of assets of the Company of any kind or character, whether in cash, property or securities, to which the holders of the Securities or the Trustee would be entitled, except for the provisions of this Article 12, shall (except as aforesaid) be paid by the Company or by any receiver, trustee in bankruptcy, liquidating trustee, agent or other person making such payment or distribution, or by the holders of the Securities or by the Trustee under this Indenture if received by them or it, directly to the holders of Senior Indebtedness of the Company (pro rata to such holders on the basis of the respective amounts of Senior Indebtedness of the Company held by such holders, as calculated by the Company) or their representative or representatives, or to the trustee or trustees under any indenture pursuant to which any instruments evidencing any Senior Indebtedness of the Company may have been issued, as their respective interests may appear, to the extent necessary to pay all Senior Indebtedness of the Company in full, in money or money's worth, after giving effect to any concurrent payment or distribution to or for the holders of Senior Indebtedness of the Company, before any payment or distribution is made to the holders of the Securities or to the Trustee.

In the event that, notwithstanding the foregoing, any payment or distribution of assets of the Company of any kind or character, whether in cash, property or securities, prohibited by the foregoing, shall be received by the Trustee or the holders of the Securities before all Senior Indebtedness of the Company is paid in full, or provision is made for such payment in money in accordance with its terms, such payment or distribution shall be held in trust for the benefit of and shall be paid over or delivered to the holders of Senior Indebtedness of the Company or their representative or representatives, or to the trustee or trustees under any indenture pursuant to which any instruments evidencing any Senior Indebtedness of the Company may have been issued, as their respective interests may appear,

as calculated by the Company, for application to the payment of all Senior Indebtedness of the Company remaining unpaid to the extent necessary to pay all Senior Indebtedness of the Company in full in money in accordance with its terms, after giving effect to any concurrent payment or distribution to or for the holders of such Senior Indebtedness.

For purposes of this Article 12, the words, “cash, property or securities” shall not be deemed to include shares of stock of the Company as reorganized or readjusted, or securities of the Company or any other corporation provided for by a plan of reorganization or readjustment, the payment of which is subordinated at least to the extent provided in this Article 12 with respect to the Securities to the payment of all Senior Indebtedness of the Company which may at the time be outstanding; provided that (i) the Senior Indebtedness of the Company is assumed by the new person, if any, resulting from any such reorganization or readjustment, and (ii) the rights of the holders of the Senior Indebtedness of the Company (other than leases) and of leases which are assumed are not, without the consent of such holders, altered by such reorganization or readjustment.

The consolidation of the Company with, or the merger of the Company into, another person or the liquidation or dissolution of the Company following the conveyance or transfer of its property as an entirety, or substantially as an entirety, to another person upon the terms and conditions provided for in Article 5 hereof shall not be deemed a dissolution, winding-up, liquidation or reorganization for the purposes of this Section 12.02 if such other person shall, as a part of such consolidation, merger, conveyance or transfer, comply with the conditions stated in Article 5 hereof.

Section 12.03 Subrogation of Securities. Subject to the payment in full of all Senior Indebtedness of the Company, the rights of the holders of the Securities shall be subrogated to the rights of the holders of Senior Indebtedness of the Company to receive payments or distributions of cash, property or securities of the Company applicable to the Senior Indebtedness of the Company until the principal of (and premium, if any) and interest on the Securities shall be paid in full; and, for the purposes of such subrogation, no payments or distributions to the holders of the Senior Indebtedness of the Company of any cash, property or securities to which the holders of the Securities or the Trustee would be entitled except for the provisions of this Article 12 to or for the benefit of the holders of Senior Indebtedness of the Company by holders of the Securities or the Trustee, shall, as between the Company, its creditors other than holders of Senior Indebtedness of the Company, and the holders of the Securities, be deemed to be a payment by the Company to or on account of the Senior Indebtedness of the Company. It is understood that the provisions of this Article 12 are and are intended solely for the purpose of defining the relative rights of the holders of the Securities, on the one hand, and the holders of the Senior Indebtedness of the Company, on the other hand.

Nothing contained in this Article 12 or elsewhere in this Indenture or in the Securities is intended to or shall impair, as between the Company, its creditors other than the holders of its Senior Indebtedness, and the holders of the Securities, the obligation of the Company, which is absolute and unconditional, to pay to the holders of the Securities the principal of (and premium, if any) and interest on the Securities as and when the same shall become due and payable in accordance with their terms, or is intended to or shall affect the relative rights of the holders of the Securities and creditors of the Company other than the holders of its Senior Indebtedness, nor shall anything herein or therein prevent the Trustee or the Holder of any Security from exercising all remedies otherwise permitted by applicable law upon default under this Indenture, subject to the rights, if any, under this Article 12 of the holders of Senior Indebtedness of the Company in respect of cash, property or securities of the Company received upon the exercise of any such remedy.

Upon any payment or distribution of assets of the Company referred to in this Article 12, the Trustee, subject to the provisions of Section 7.01, and the Holders of the Securities shall be entitled to rely upon any order or decree made by any court of competent jurisdiction in which such dissolution, winding-up, liquidation or reorganization proceedings are pending, or a certificate of the receiver, trustee in bankruptcy, liquidating trustee, agent or other person making such payment or distribution, delivered to the Trustee or to the holders of the Securities, for the purpose of ascertaining the persons entitled to participate in such distribution, the holders of the Senior Indebtedness and other indebtedness of the Company, the amount thereof or payable thereon, the amount or amounts paid or distributed thereon and all other facts pertinent thereto or to this Article 12.

Section 12.04 Authorization by Holders. Each Holder of a Security by its acceptance thereof authorizes and directs the Trustee on its behalf to take such action as may be necessary or appropriate to effectuate

the subordination provided in this Article 12 and appoints the Trustee its attorney-in-fact for any and all such purposes.

Section 12.05 Notice to Trustee. The Company shall give prompt written notice to a Responsible Officer of the Trustee of any fact known to the Company which would prohibit the making of any payment of monies to or by the Trustee in respect of the Securities pursuant to the provisions of this Article 12. Notwithstanding the provisions of this Article 12 or any other provision of this Indenture, the Trustee shall not be charged with knowledge of the existence of any facts which would prohibit the making of any payment of monies to or by the Trustee in respect of the Securities pursuant to the provisions of this Article 12, unless and until a Responsible Officer of the Trustee shall have received written notice thereof at the Corporate Trust Office of the Trustee from the Company or a holder or holders of Senior Indebtedness of the Company or from any trustee thereof; and before the receipt of any such written notice, the Trustee, subject to the provisions of Section 7.01, shall be entitled in all respects to assume that no such facts exist; *provided* that if on a date not fewer than three Business Days prior to the date upon which by the terms hereof any such monies may become payable for any purpose (including, without limitation, the payment of the principal of (or premium, if any) or interest on any Security) the Trustee shall not have received, with respect to such monies, the notice provided for in this Section 12.05, then, anything herein contained to the contrary notwithstanding, the Trustee shall have full power and authority to receive such monies and to apply the same to the purpose for which they were received, and shall not be affected by any notice to the contrary which may be received by it on or after such prior date. Notwithstanding anything to the contrary hereinbefore set forth, nothing shall prevent any payment by the Company or the Trustee to the Holders of monies in connection with a redemption of Securities if (i) notice of such redemption has been given hereof prior to the receipt by the Trustee of written notice as aforesaid, and (ii) such notice of redemption is given not earlier than 60 days before the redemption date.

(a) The Trustee conclusively shall be entitled to rely on the delivery to it of a written notice by a person representing himself to be a holder of Senior Indebtedness of the Company (or a trustee on behalf of such holder) to establish that such notice has been given by a holder of Senior Indebtedness of the Company or a trustee on behalf of any such holder or holders. In the event that the Trustee determines in good faith that further evidence is required with respect to the right of any person as a holder of Senior Indebtedness of the Company to participate in any payment or distribution pursuant to this Article 12, the Trustee may request such person to furnish evidence to the reasonable satisfaction of the Trustee as to the amount of Senior Indebtedness of the Company held by such person, the extent to which such person is entitled to participate in such payment or distribution and any other facts pertinent to the rights of such person under this Article 12, and if such evidence is not furnished the Trustee may defer any payment to such person pending judicial determination as to the right of such person to receive such payment.

Section 12.06 Trustee's Relation to Senior Indebtedness. The Trustee in its individual capacity shall be entitled to all the rights set forth in this Article 12 in respect of any Senior Indebtedness of the Company at any time held by it, to the same extent as any other holder of Senior Indebtedness of the Company and nothing elsewhere in this Indenture shall deprive the Trustee of any of its rights as such holder.

With respect to the holders of Senior Indebtedness of the Company, the Trustee undertakes to perform or to observe only such of its covenants and obligations as are specifically set forth in this Article 12, and no implied covenants or obligations with respect to the holders of Senior Indebtedness of the Company shall be read into this Indenture against the Trustee. The Trustee shall not be deemed to owe any fiduciary duty to the holders of Senior Indebtedness of the Company and the Trustee shall not be liable to any holder of Senior Indebtedness of the Company if it shall pay over or deliver to holders of Securities, the Company or any other person money or assets to which any holder of Senior Indebtedness of the Company shall be entitled by virtue of this Article 12 or otherwise.

Section 12.07 No Impairment of Subordination. No right of any present or future holder of any Senior Indebtedness of the Company to enforce subordination as herein provided shall at any time in any way be prejudiced or impaired by any act or failure to act on the part of the Company or by any act or failure to act, in good faith, by any such holder, or by any noncompliance by the Company with the terms, provisions and covenants of this Indenture, regardless of any knowledge thereof which any such holder may have or otherwise be charged with.

Section 12.08 Rights of Trustee. Nothing in this Article 12 shall apply to claims of, or payments to, the Trustee under or pursuant to Section 7.07.

Section 12.09 Article Applicable to Paying Agents. In case at any time any Paying Agent other than the Trustee shall have been appointed by the Company and be then acting hereunder, the term “Trustee” as used in this Article shall in such case (unless the context otherwise requires) be construed as extending to and including such Paying Agent within its meaning as fully for all intents and purposes as if such Paying Agent were named in this Article in addition to or in place of the Trustee; provided, however, that Section 12.08 and the first paragraph of Section 12.06 shall not apply to the Company or any Affiliate of the Company if it or such Affiliate acts as Paying Agent.

[Remainder of page intentionally left blank]

IN WITNESS WHEREOF, the parties hereto have caused this Indenture to be duly executed and attested, all as of the day and year first above written.

BIOAMBER INC.

By: _____
Name:
Title:

COMPUTERSHARE TRUST COMPANY, N.A., as Trustee

By: _____
Name:
Title:

[Signature Page to Indenture]

June 2, 2014

BioAmber Inc.
1250 Rene Levesque West, Suite 4110
Montreal, Quebec, Canada H3B 4W8

Re: Securities Being Registered under Registration Statement on Form S-3

Ladies and Gentlemen:

We have acted as counsel to you in connection with your filing of a Registration Statement on Form S-3 (as amended or supplemented, the "Registration Statement") pursuant to the Securities Act of 1933, as amended (the "Securities Act"), relating to the registration of up to \$100,000,000 of any combination of (i) common stock, par value \$0.01 per share (the "Common Stock"), of BioAmber Inc., a Delaware corporation (the "Company"), (ii) preferred stock, par value \$0.01 per share, of the Company (the "Preferred Stock"), (iii) debt securities of the Company ("Debt Securities"), (iv) warrants to purchase Common Stock, Preferred Stock, Debt Securities or Units (as defined below) ("Warrants"), and (v) units comprised of Common Stock, Preferred Stock, Debt Securities, Warrants and other securities in any combination ("Units"). The Common Stock, Preferred Stock, Debt Securities, Warrants and Units are sometimes referred to collectively herein as the "Securities." Securities may be issued in an unspecified number (with respect to Common Stock, Preferred Stock, Warrants and Units) or in an unspecified principal amount (with respect to Debt Securities). The Registration Statement provides that the Securities may be offered separately or together, in separate series, in amounts, at prices and on terms to be set forth in one or more prospectus supplements (each a "Prospectus Supplement") to the prospectus contained in the Registration Statement.

We have reviewed such documents and made such examination of law as we have deemed appropriate to give the opinions set forth below. We have relied, without independent verification, on certificates of public officials and, as to matters of fact material to the opinions set forth below, and on certificates of officers of the Company.

The opinions set forth below are limited to the Delaware General Corporation Law (which includes reported judicial decisions interpreting the Delaware General Corporation Law), the law of New York, and the federal law of the United States. Without limiting the generality of the foregoing, we express no opinion with respect to (i) state securities or "blue sky" laws, or (ii) state or federal antitrust laws.

For purposes of the opinions set forth below, without limiting any other exceptions or qualifications set forth herein, we have assumed that after the issuance of any Securities offered pursuant to the Registration Statement, the total number of issued shares of Common Stock or Preferred Stock, as applicable, together with the total number of shares of such stock issuable upon the exercise, exchange, conversion or settlement, as the case may be, of any exercisable, exchangeable or convertible security (including without limitation any Unit), as the case may be, then outstanding, will not exceed the total number of authorized shares of Common Stock or Preferred Stock, as applicable, under the Company's certificate of incorporation as then in effect (the "Charter").

For purposes of the opinions set forth below, we refer to the following as the "Future Authorization and Issuance" of Securities:

- with respect to any of the Securities, (a) the authorization by the Company of the amount, terms and issuance of such Securities (the "Authorization") and (b) the issuance of such Securities in accordance with the Authorization therefor upon the receipt by the Company of the consideration (which, in the case of shares of Common Stock or Preferred Stock, is not less than the par value of such shares) to be paid therefor in accordance with the Authorization;

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- with respect to Preferred Stock, (a) the establishment of the terms of such Preferred Stock by the Company in conformity with the Charter and applicable law and (b) the execution, acknowledgement and filing with the Delaware Secretary of State, and the effectiveness of, a certificate of designations to the Charter setting forth the terms of such Preferred Stock in accordance with the Charter and applicable law;
 - with respect to Debt Securities, (a) the authorization, execution and delivery of the indenture or a supplemental indenture relating to such Securities by the Company and the trustee thereunder and/or (b) the establishment of the terms of such Securities by the Company in conformity with the applicable indenture or supplemental indenture and applicable law, and (c) the execution, authentication and issuance of such Securities in accordance with the applicable indenture or supplemental indenture and applicable law; and
 - with respect to Warrants or Units, (a) the authorization, execution and delivery by the Company and the other parties thereto of any agreement under which such Securities are to be issued and (b) the establishment of the terms of such Securities, and the execution and delivery of such Securities, in conformity with any applicable agreement under which such Securities are to be issued and applicable law.

Based upon the foregoing, and subject to the additional qualifications set forth below, we are of the opinion that:

1. Upon the Future Authorization and Issuance of shares of Common Stock, such shares of Common Stock will be validly issued, fully paid and nonassessable.
2. Upon the Future Authorization and Issuance of shares of Preferred Stock, such shares of Preferred Stock will be validly issued, fully paid and nonassessable.
3. Upon the Future Authorization and Issuance of Debt Securities, such Debt Securities will be valid and binding obligations of the Company.
4. Upon the Future Authorization and Issuance of Warrants, such Warrants will be valid and binding obligations of the Company.
5. Upon the Future Authorization and Issuance of Units, such Units will be valid and binding obligations of the Company.

The opinions expressed above are subject to bankruptcy, insolvency, fraudulent transfer, reorganization, moratorium and other similar laws of general application affecting the rights and remedies of creditors and to general principles of equity.

We hereby consent to the inclusion of this opinion as Exhibit 5.1 to the Registration Statement and to the references to our firm under the caption "Legal Matters" in the Registration Statement. In giving our consent, we do not admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations thereunder.

Very truly yours,

/s/ Goodwin Procter LLP

GOODWIN PROCTER LLP

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in this Registration Statement on Form S-3 of our report dated March 28, 2014, relating to the consolidated financial statements of BioAmber Inc. and subsidiaries (a development stage company) (which report expresses an unqualified opinion and includes an explanatory paragraph relating to the company's development stage status) appearing in the Annual Report on Form 10-K of BioAmber Inc. and subsidiaries for the year ended December 31, 2013, and to the reference to us under the heading "Experts" in the Prospectus, which is part of this Registration Statement.

/s/ Deloitte LLP¹

Montreal, Canada
June 2, 2014

¹ CPA auditor, CA, public accountancy permit No. A118581