

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

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

NEOSTEM, INC.
(Exact Name of Registrant as Specified in Its Charter)

Delaware
(State or Other Jurisdiction of Incorporation or Organization)

22-2343568
(I.R.S. Employer Identification Number)

420 Lexington Avenue
Suite 450
New York, New York 10170
(212) 584-4180
(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant's Principal Executive Offices)

Catherine M. Vaczy, Esq.
Vice President and General Counsel
NeoStem, Inc.
420 Lexington Avenue, Suite 450
New York, NY 10170
(212) 584-4180
(Name, Address, Including Zip Code, and Telephone Number, Including Area Code, of Agent for Service)

Copy to:
Alan Wovsaniker, Esq.
Lloyd Jeglikowski, Esq.
Lowenstein Sandler PC
65 Livingston Avenue
Roseland, New Jersey 07068
Telephone: (973) 597-2500

Approximate date of commencement of proposed sale to public: From time to time after this Registration Statement becomes effective.

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, 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 Exchange Act.

Large accelerated filer

Non-accelerated filer

(Do not check if a smaller reporting company)

Accelerated filer

Smaller reporting company

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered (1)	Amount to be Registered (1)	Proposed Maximum Offering price per unit	Proposed Maximum Aggregate offering Price (2)(3)	Amount of registration fee (4)
Common stock, \$0.001 par value per share	—	(5)	(5)	(5)
Preferred stock, \$0.01 par value per share	—	(5)	(5)	(5)
Debt securities	—	(5)	(5)	(5)
Warrants	—	(5)	(5)	(5)
Units	—	(5)	(5)	(5)
Total			\$ 150,000,000	\$ 17,190

- (1) This registration statement covers the registration of such indeterminate number of shares of common stock, such indeterminate number of shares of preferred stock, such indeterminate principal amount of debt securities, such indeterminate number of warrants to purchase common stock, preferred stock or debt securities and units consisting of any combination of such securities, as shall have an aggregate initial offering price not to exceed \$150,000,000. If any debt securities are issued at an original issue discount, then the offering price of such debt securities shall be in such greater principal amount as shall result in an aggregate initial offering price not to exceed \$150,000,000, less the aggregate dollar amount of all securities previously issued hereunder. This registration statement also covers an indeterminate amount of securities that may be issued in exchange for, or upon conversion or exercise of preferred stock, debt securities or warrants being registered hereunder or pursuant to the antidilution provisions of any such securities. Any securities registered hereunder may be sold separately or as units with other securities registered hereunder.
- (2) In United States dollars or the equivalent thereof in any other currency, currency unit or units, or composite currency or currencies.
- (3) The proposed maximum per unit and aggregate offering prices per class of security will be determined from time to time by the registrant in connection with the issuance by the registrant of the securities registered hereunder.
- (4) Estimated solely for purposes of determining the registration fee pursuant to Rule 457(o) under the Securities Act of 1933.
- (5) Not required to be included in accordance with General Instruction II.D. of Form S-3.

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 which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 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.

The information in this prospectus is not complete and may be changed. We may not sell 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 an offer to buy these securities in any state where the offer or sale is not permitted.

PRELIMINARY PROSPECTUS

\$150,000,000

NEOSTEM, INC.

**Common Stock
Preferred Stock
Debt Securities
Warrants
Units**

We may from time to time offer and sell common stock, preferred stock, debt securities, warrants and units, having an aggregate offering price of up to \$150,000,000. We may offer and sell these securities separately or together in any combination. We may offer and sell these securities to or through underwriters, directly to investors or through agents. We will specify the terms of the securities, and the names of any underwriters or agents and their respective compensation, in supplements to this prospectus.

Our common stock is listed on the on the NYSE MKT and traded under the symbol "NBS." The closing bid price of our common stock on the NYSE MKT on August 23, 2012 was \$0.60 per share.

Investing in our securities involves risks. See "Risk Factors" at page 4 of this prospectus.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.

This prospectus may not be used to consummate sales of securities unless it is accompanied by a prospectus supplement.

The date of this prospectus is _____, 2012.

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No dealer, salesperson or other person has been authorized to give any information or to make any representations other than those contained or incorporated by reference in this prospectus or any accompanying prospectus supplement in connection with the offer made by this prospectus or any accompanying prospectus supplement and, if given or made, such information or representations must not be relied upon as having been authorized by NeoStem, Inc. or any such person. Neither the delivery of this prospectus or any accompanying prospectus supplement nor any sale made hereunder and thereunder shall under any circumstances create an implication that there has been no change in the affairs of NeoStem, Inc. since the date hereof. This prospectus or any accompanying prospectus supplement does not constitute an offer or solicitation by anyone in any state in which such offer or solicitation is not authorized or in which the person making such offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make such offer or solicitation.

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the Securities and Exchange Commission, using a “shelf” registration process. Under this shelf process, we may sell any combination of the securities described in this prospectus in one or more offerings up to a total dollar amount of \$150,000,000. We have provided to you in this prospectus a general description of the securities we may offer. Each time we sell securities under this shelf registration process, we will provide a prospectus supplement that will contain specific information about the terms of the offering. We may also add, update or change in the prospectus supplement or any “free writing prospectus” we may authorize to be delivered to you any of the information contained in this prospectus. To the extent there is a conflict between the information contained in this prospectus and the prospectus supplement or any free writing prospectus we may authorize to be delivered to you, you should rely on the information in the prospectus supplement or free writing prospectus, as the case may be, provided that if any statement in one of these documents is inconsistent with a statement in another document having a later date—for example, a document incorporated by reference in this prospectus or any prospectus supplement—the statement in the document having the later date modifies or supersedes the earlier statement. This prospectus, together with the applicable prospectus supplements and any free writing prospectus we may authorize to be delivered to you, includes all material information relating to this offering.

An investment in our securities involves certain risks that should be carefully considered by prospective investors. See “Risk Factors.”

You should read this prospectus and any prospectus supplement as well as additional information described under “Incorporation of Certain Documents by Reference” and “Where You Can Find More Information” on pages 44 and 45, respectively.

About NeoStem

Overview

NeoStem, Inc. (“we,” “NeoStem” or the “Company”) continues to develop and build on its core capabilities in cell therapy to capitalize on the paradigm shift that we see occurring in medicine. In particular, we anticipate that cell therapy will have a large role in the fight against chronic disease and in lessening the economic burden that these diseases pose to modern society.

We are emerging as a technology and market leading company in this fast developing cell therapy market. Our multi-faceted business strategy combines a state-of-the-art contract development and manufacturing organization (CDMO) with a medically important cell therapy product development program enabling near and long-term revenue growth opportunities. Our service business and pipeline of proprietary cell therapy products work in concert, giving us a competitive advantage that we believe is unique to the biotechnology and pharmaceutical industries. Supported by an experienced scientific and business management team and a patent and patent pending (IP) portfolio, we believe we are well positioned to succeed.

Cell therapy, which now represents approximately a \$50 billion worldwide market opportunity in the burgeoning regenerative medicine industry, describes the process of introducing new cells into the body (tissue) in order to treat a disease, and comprises a separate therapeutic platform technology to that of the current three pillars of healthcare: pharmaceuticals, biologics and medical devices. It is widely considered a disruptive technology, e.g. “medicine from you for you.” Cell therapy has its origins rooted in blood transfusion, bone marrow and organ transplantation, tissue banking and reproductive *in vitro* fertilization. This 200-year journey, based initially on clinical trial and error and more recently on meaningful laboratory science, has culminated in the necessary critical mass to justify being a distinct industry in its own right. Thus, today cell therapy is considered the fourth and most recent therapeutic pillar of global healthcare. The first cell therapy approved by the U.S. Food and Drug Administration (FDA) in 2010 was PROVENCE®, (Dendreon Corporation) an autologous cellular immunotherapy for the treatment of asymptomatic or minimally symptomatic metastatic castrate resistant (hormone refractory) prostate cancer. The second approved therapy was Osiris' Prochymal® approved in Canada in May 2012 for 'graft vs. host disease' (“GVHD”). The growth rate of the cell therapy market is projected to be 15% compounded annually reaching an estimated \$88 billion by 2014 (MDB Capital Group report, 2011).

NeoStem's mission is to introduce the first cardiovascular cell therapy product to treat acute myocardial infarction. To that end through our wholly-owned subsidiary Amorcyte, LLC (“Amorcyte”), we are enrolling patients into the PreSERVE Phase 2 clinical trial in the U.S. for post AMI (acute myocardial infarction) patients and anticipate completing enrollment in 2013 with 6 months initial data readout near the end of 2013.

Supporting the regenerative medicine market, including NeoStem's Amorcyte product development pipeline, is Progenitor Cell Therapy, LLC ("PCT"), a wholly owned subsidiary of NeoStem. PCT is a leading CDMO, which is akin to the pharmaceutical industry's Contract Research Organization (CRO). This subsidiary generates approximately 14% of our current revenue and is continuing to grow.

PCT prides itself on being a problem solver (consultant), implementation expert and cGMP manufacturing service provider from product discovery to commercialization for product developers. PCT has manufactured clinical products for over 5,000 patients (14,000 products shipped), participated in over 100 peer reviewed publications, collaborated in more than 50 FDA and EU regulatory filings and has passed each and every customer and regulatory agency audit to which it has been subject.

By the end of 2012 with the merging and closing of its Boston, MA facility, PCT will have consolidated its US operations to two facilities in the U.S.: Allendale, NJ (30,000 sq. ft.) and Mountain View, CA (25,000 sq. ft.), which enables the company to more efficiently and cost effectively service the U.S. and Canadian markets with timely and responsive services. Expansion into the growing European and Asian market is also being evaluated. We anticipate that newly identified and on-going clinical trial programs combined with FDA and EU approved products will continue to expand the CDMO outsourcing market.

Other significant programs include Athelos Corporation ("Athelos"), which is approximately 80%-owned by our subsidiary, PCT. Athelos is engaged in a collaboration with Becton-Dickinson that is exploring the earlier stage clinical development of a T-cell therapy for autoimmune conditions. In addition, our pre-clinical assets include our VSEL™ Technology platform as well as our MSC (mesenchymal stem cells) product candidate for regenerative medicine. NeoStem's origins are in adult stem cell research and the collection and storage of adult stem cells.

Recent NeoStem Developments

Honing our Focus - Sale of NeoStem's 51% Interest in Erye

In October 2009, NeoStem acquired its interest in Suzhou Erye Pharmaceutical Co. Limited ("Erye") which was considered at the time to be an innovative business move into the emerging Chinese pharmaceutical industry. In 2011, the Chinese government imposed new policies affecting price and volume controls of certain pharmaceutical products, including generic antibiotics, which reduced the division's profitability and positive cash flows. The dampening of Erye's operating results was the catalyst for the Company's interest in monetizing its investment. Accordingly, on June 18, 2012, we entered into an Equity Purchase Agreement to sell our 51% interest in Erye to Suzhou Erye Economy & Trading Co., Ltd. ("EET"), the 49% owner, and its affiliate. The divestiture will bolster NeoStem's cash position through the receipt of the cash purchase price of \$12,280,000 and eliminate over \$37 million in short and long-term debt obligations. The sale of Erye will also return approximately 1,040,000 shares of the Company's Common Stock and cancels 1,170,000 Common Stock options and 640,000 Common Stock warrants. The transaction is expected to close during the 4th quarter of 2012, subject to the satisfaction of various closing conditions including Chinese regulatory approvals.

Summary of the Erye Divestiture Transaction

Pursuant to the Equity Purchase Agreement, the Total Cash Purchase Price is payable in the following manner:

(i) the initial down payment of \$1,228,000, being 10% of the Total Cash Purchase Price, was received by us in July 2012;

(ii) \$4,912,000, being 40% of the Total Cash Purchase Price, was paid by the Purchasers into escrow in August 2012 (the "Second Purchase Price Payment"), as follows: (x) \$2,456,000 (the "Offshore Second Purchase Price Payment") was deposited by the Purchasers into a U.S.-based escrow account (the "Offshore Escrow Account") (the Equity Purchase Agreement providing that the Offshore Second Purchase Price Payment shall be released to our subsidiary CBH upon the receipt of approval of the Erye Sale by the PRC Ministry of Commerce and/or its local counterparts as applicable ("MOFCOM Transfer Approval")) and (y) the RMB equivalent of \$2,456,000 (the "Onshore Second Purchase Price Payment") was deposited by the Purchasers into an escrow account inside the PRC (the "Onshore Escrow Account");

(iii) also in August 2012, pursuant to an amendment to the Equity Purchase Agreement, the RMB equivalent of \$1,228,000, representing an additional 10% of the Total Cash Purchase Price, was paid by the Purchasers into the Onshore Escrow Account; and

(iv) the RMB equivalent of \$4,912,000, being the remaining 40% of the Total Cash Purchase Price, shall be paid by the Purchasers into the Onshore Escrow Account no later than the day prior to the date on which Erye submits the application seeking approval of the Erye Sale to the MOFCOM provincial counterpart.

Closing of the Erye Sale is expected to occur by the fourth quarter of 2012, subject to the receipt of PRC regulatory approvals and the satisfaction of various closing conditions. Erye has informed us that it has completed the "Capital Increase Procedures" involving an increase to Erye's registered capital which will permit Erye to repay to EET portions of certain outstanding shareholder loans that EET had made to Erye, the Equity Purchase Agreement contemplating that the Purchasers will use the proceeds of these repayments to pay 90% of the total cash purchase price for the Erye Sale. PRC regulatory approvals that remain to be received include MOFCOM Transfer Approval (at each of the district, city and provincial levels), registration with the applicable PRC State Administration of Industry and Commerce and/or its local counterparts with respect to the Erye Sale ("SAIC Transfer Registration"), and approval of the PRC State Administration of Foreign Exchange and/or its local counterparts for the currency exchange in connection with the Erye Sale ("SAFE Transfer Approval"). Pursuant to the Equity Purchase Agreement, Erye has agreed to use its commercially reasonable best efforts to make regulatory filings and submit information necessary for the purpose of obtaining these approvals. No assurances can be given that all closing conditions will be satisfied or waived, or that the foregoing PRC regulatory approvals will be obtained on a timely basis, or at all. Furthermore, the portions of the Total Cash Purchase Price that will initially be deposited into escrow in RMB will require the approval of SAFE to be converted into U.S. dollars and repatriated into the United States. The Purchasers may terminate the Equity Purchase Agreement at any time prior to the earlier of September 30, 2012 and the MOFCOM Transfer Submission Date (that is, the date of the initial MOFCOM submission at the district level), in which case our sole right would be to retain the \$1,228,000 initial payment already received from the Purchasers.

Subject to the receipt of PRC regulatory approvals and the satisfaction of other closing conditions, we anticipate that the Erye Sale will close by fourth quarter 2012, at which time we will exit the Pharmaceutical Manufacturing - China segment. In consideration of ASC 205-20-45-1 and ASC 360-10-45-9, we have reported the financial position, results of operations and related cash flow for our Pharmaceutical Manufacturing - China segment as a discontinued operation in our Quarterly Report on Form 10-Q for the quarter ended June 30, 2012, which is incorporated by reference into this prospectus. In addition, our recast financial statements for the years ended December 31, 2010 and 2011, which reflect our Pharmaceutical Manufacturing - China and Regenerative Medicine- China segments as discontinued operations, are incorporated by reference into this prospectus from our Current Report on Form 8-K filed with the Securities and Exchange Commission on August 15, 2012.

Upon consummation of the sale transaction, we will continue as a public company focused on devoting all our time and resources to our cell therapy business, including the enrollment of patients in our PreSERVE Phase 2 clinical trial of AMR-001 for preserving heart function after a heart attack and expanding our cell therapeutic contract manufacturing business operated through our PCT subsidiary. Approximately 14% of our total revenue for fiscal year 2011 was attributable to our PCT CDMO business. Despite the fact that to date, the majority of our revenue has been generated by Erye we believe that focusing our attention and resources on cell therapy, a business that we believe is fundamentally changing the way medicine is administered, and becoming a leader in this field will be a much more rewarding direction for the Company

We intend to continue our emergence as a technology and market leading company in the fast developing cell therapy market. Our multifaceted business strategy combines a state-of-the-art CDMO with a medically important cell therapy product development program enabling near and long-term revenue growth opportunities. Our service business and pipeline of proprietary cell therapy products work in concert, giving us a competitive advantage that is unique to the biotechnology and pharmaceutical industries. Supported by an experienced scientific and business management team and a patent and patent pending (IP) portfolio, we believe we are well positioned to succeed.

NeoStem Corporate Information

Our principal executive offices are located at 420 Lexington Avenue, New York, New York 10170, and our telephone number is (212) 584-4180. We are currently located in Suite 450 and will be relocating to larger space in Suite 347 in September 2012. Our Common Stock is currently traded on the NYSE MKT under the symbol "NBS." We maintain a corporate website at www.neostem.com. The contents of our website are not incorporated by reference into this prospectus and

should not be considered to be a part of this prospectus or relied upon in connection herewith.

NeoStem, Inc. was incorporated under the laws of the State of Delaware in September 1980 under the name Fidelity Medical Services, Inc. and commenced operations in the adult stem cell collection, processing and storage services business in January 2006. Unless otherwise stated, all references to “us,” “our,” “NeoStem,” “we,” the “Company” and similar designations refer to NeoStem, Inc.

This prospectus and the information incorporated 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 are the property of their respective owners.

RISK FACTORS

Investing in our securities involves risk. Please see the risk factors set forth under the heading “Risk Factors” beginning on page 38 of our Annual Report on Form 10-K for the year ended December 31, 2011, as well as those set forth under the headings “Risk Factors” and “Risks Associated With the Erye Sale and the Equity Purchase Agreement” beginning on page 37 of our Quarterly Report on Form 10-Q for the fiscal quarter ended June 30, 2012, each of which documents is on file with the Securities and Exchange Commission and is incorporated by reference into this prospectus. Before making an investment decision, you should carefully consider these risks as well as other information we include or incorporate by reference in this prospectus and any prospectus supplement. The risks and uncertainties we have described are not the only ones facing our Company. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also affect our business operations.

SPECIAL NOTE REGARDING FORWARD-LOOKING INFORMATION

This prospectus, any prospectus supplement and the documents we incorporate by reference in this prospectus contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the “Securities Act”), and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). All statements, other than statements of historical facts, that we include in this prospectus, any prospectus supplement, and in the documents we incorporate by reference in this prospectus, may be deemed forward-looking statements for purposes of the Securities Act and the Exchange Act. We use the words “anticipate,” “believe,” “estimate,” “expect,” “intend,” “may,” “plan,” “project,” “will,” “would” and similar expressions to identify forward-looking statements, although not all forward-looking statements contain these identifying words. We cannot guarantee that we actually will achieve the plans, intentions or expectations disclosed in our forward-looking statements and, accordingly, you should not place undue reliance on our forward-looking statements. There are a number of important factors that could cause actual results or events to differ materially from the forward-looking statements that we make, including the factors included in the documents we incorporate by reference in this prospectus. You should read these factors and the other cautionary statements made in the documents we incorporate by reference as being applicable to all related forward-looking statements wherever they appear in this prospectus, any prospectus supplement, and any document incorporated by reference. We caution you that we do not undertake any obligation to update forward-looking statements made by us.

USE OF PROCEEDS

Unless otherwise provided in the applicable prospectus supplement, we intend to use the net proceeds from the sale of the securities under this prospectus for working capital, including research and development of cell therapeutic product candidates, expansion of our business, strategic transactions and other general corporate purposes. We will set forth in the prospectus supplement our intended use for the net proceeds received from the sale of any securities. Pending the use of the net proceeds, we may use the net proceeds to invest in investment-grade, interest-bearing securities.

THE SECURITIES WE MAY OFFER

The descriptions of the securities contained in this prospectus, together with the applicable prospectus supplements, summarize all the material terms and provisions of the various types of securities that we may offer. We will describe in the applicable prospectus supplement relating to any securities the particular terms of the securities offered by that prospectus supplement. If we indicate in the applicable prospectus supplement, the terms of the securities may differ from the terms we have summarized below. We will also include in the prospectus supplement information, where applicable, about material

We may sell from time to time, in one or more offerings:

- common stock;
- preferred stock;
- debt securities;
- warrants to purchase any of the securities listed above; and
- units consisting of any combination of the securities listed above.

In this prospectus, we refer to the common stock, preferred stock, debt securities, warrants and units collectively as “securities.” The total dollar amount of all securities that we may sell will not exceed \$150,000,000.

If we issue debt securities at a discount from their original stated principal amount, then, for purposes of calculating the total dollar amount of all securities issued under this prospectus, we will treat the initial offering price of the debt securities as the total original principal amount of the debt securities.

This prospectus may not be used to consummate a sale of securities unless it is accompanied by a prospectus supplement.

DESCRIPTION OF CAPITAL STOCK

The following is a summary of all material characteristics of our capital stock as set forth in our certificate of incorporation and bylaws, and our outstanding warrants. The summary does not purport to be complete and is qualified in its entirety by reference to our certificate of incorporation and bylaws and the Class D warrants, the warrants issued in our November 2010 Common Stock Offering and in our November 2010 Preferred Stock Offering, the warrants issued in connection with the PCT Merger and the Amorcyte Merger, the Series NA Warrants, the warrants issued in our March 2012 underwritten offering, the warrants issued in our May-July 2012 Private Placement, the July 2012 New Warrants issued upon exercise of certain of our May-July 2012 Private Placement Warrants, the warrants issued in our August 2012 private placement, and the Certificate of Designations relating to our Series E 7% Senior Convertible Preferred Stock themselves, all of which are incorporated by reference as exhibits to the registration statement of which this prospectus is a part, and to the provisions of the General Corporation Law of the State of Delaware, as amended.

Common Stock

We are authorized to issue 500,000,000 shares of common stock, par value \$0.001 per share (“Common Stock”). Holders of our Common Stock are entitled to one vote per share in the election of directors and on all other matter on which stockholders are entitled or permitted to vote. Holders of our Common Stock are not entitled to cumulative voting rights. Therefore, holders of a majority of the shares voting for the election of directors can elect all of the directors. Subject to the terms of any outstanding series of preferred stock, the holders of our Common Stock are entitled to dividends in the amounts and at times as may be declared by the Board of Directors out of funds legally available. Upon liquidation or dissolution, holders of our Common Stock are entitled to share ratably in all net assets available for distribution to stockholders after payment of any liquidation preferences to holders of our preferred stock. Holders of our Common Stock have no redemption, conversion or preemptive rights.

As of August 17, 2012, we had 152,545,253 shares of Common Stock issued and outstanding, exclusive of existing convertible preferred stock, options and warrants and the shares and warrants to be issued in this offering.

Preferred Stock

We are authorized to issue up to 20,000,000 shares of preferred stock, par value \$0.01 per share, with such designations, rights, and preferences as may be determined from time to time by our Board of Directors. Accordingly, our Board of Directors

is empowered, without stockholder approval, to issue preferred stock with dividend, liquidation, conversion, voting, or other rights that could adversely affect the voting power or other rights of the holders of our Common Stock. The issuance of preferred stock could have the effect of restricting dividends on our Common Stock, diluting the voting power of our Common Stock, impairing the liquidation rights of our Common Stock, or delaying or preventing a change in control of our company, all without further action by our stockholders.

As of August 17, 2012, there were:

- 10,000 shares of our Series B Convertible Redeemable Preferred Stock, \$0.01 par value per share (“Series B Preferred Stock”), issued and outstanding; and
- 3,919,263 shares of our Series E 7% Senior Convertible Preferred Stock, \$0.01 par value per share (the “Series E Preferred Stock,” or the “Series E Preferred Shares”), issued and outstanding.

Series B Preferred Stock

The Series B Preferred Stock ranks *pari passu* with our Common Stock with respect to the payment of dividends and to the distribution of assets upon liquidation, dissolution or winding up.

So long as any shares of the Series B Preferred Stock are outstanding, no dividend shall be declared or paid or set aside for payment or other distribution declared or made upon our Common Stock or upon any other stock ranking junior to, or on a parity with, the Series B Preferred Stock as to dividends or upon liquidation, dissolution or winding up, unless, in the case of our preferred stock, the same dividend is declared, paid or set aside for payment on all outstanding shares of the Series B Preferred Stock or in the case of our Common Stock, ten times such dividend per share is declared, paid or set aside for payment on each outstanding share of the Series B Preferred Stock.

Except as otherwise provided by law, each share of the Series B Preferred Stock has the same voting rights as ten shares of our Common Stock and the holders of the Series B Preferred Stock and the Common Stock shall vote together as one class on all matters.

The holder of any share of Series B Preferred Stock has the right, at such holder's option, to convert such share into one fully paid and non-assessable share of our Common Stock, subject to adjustment.

In the event of any voluntary or involuntary dissolution, liquidation or winding up of our Company, after any distribution of assets is made to the holders of any other class or series of stock that ranks prior to the Series B Preferred Stock in respect of distributions upon the liquidation of our company, the holder of each share of Series B Preferred Stock then outstanding shall be entitled to be paid out of our assets available for distribution to our stockholders, an amount on a *pari passu* basis equal to ten times the amount per share distributed to the holders of our Common Stock. After payment of the full amount of the distribution to which they are entitled, the holders of shares of the Series B Preferred Stock will not be entitled to any further participation in any distribution of assets by the corporation.

Shares of Series B Preferred Stock issued and reacquired by us shall have the status of authorized and unissued shares of preferred stock, undesignated as to series, subject to later issuance.

Holders of shares of Series B Preferred Stock are not entitled to any preemptive or subscription rights in respect of any securities of the corporation.

Series E 7% Senior Convertible Preferred Stock

General. We are authorized to issue up to 20,000,000 shares of preferred stock, par value \$0.01 per share, with such designations, rights and preferences as may be determined from time to time by our Board of Directors, without further stockholder approval. Accordingly, our Board of Directors has created out of the authorized and unissued shares of our preferred stock a series of preferred stock designated as the Series E 7% Senior Convertible Preferred Stock. As of August 17, 2012, there were 3,919,263 shares of Series E 7% Senior Convertible Preferred Stock, par value \$0.01 per share (the “Series E Preferred Stock,” or the “Series E Preferred Shares”) issued and outstanding.

The following is a brief description of the terms of our Series E Preferred Stock. The description of the Series E Preferred Stock contained herein does not purport to be complete and is qualified in its entirety by reference to the Certificate of

Dividends. Holders of Series E Preferred Stock shall be entitled to receive dividends payable in cash (or, at our option, in shares of our Common Stock if the Equity Conditions are satisfied) on the Liquidation Preference (as defined below) of such Series E Preferred Share at the per share rate of seven percent (7%) per annum, which shall be cumulative. Dividends on the Series E Preferred Shares shall commence accruing on the Initial Issuance Date and shall be computed on the basis of a 360-day year of twelve 30-day months. Dividends shall be payable in arrears on each Mandatory Redemption Date. "Mandatory Redemption Date" is defined in the certificate of designations as March 19, 2011, and the 19th day of each calendar month thereafter (or the next trading day thereafter) and ending on and including May 20, 2013 (the "Maturity Date"). The Maturity Date will be deemed to be a Mandatory Redemption Date.

Liquidation Preference. In the event of any liquidation, dissolution or winding up of our company, either voluntary or involuntary (a "Liquidation Event"), the holders of the Series E Preferred Shares shall be entitled to receive, out of our assets available for distribution to stockholders ("Liquidation Funds"), prior and in preference to any distribution of any of our assets to the holders of any other class or series of equity securities, the amount of one dollar (\$1.00) per share plus all accrued but unpaid dividends (the "Liquidation Preference"). After payment of the full amount of the Liquidation Preference, in the case of a Liquidation Event, the holders will not be entitled to any further participation in any distribution of our assets; provided that the foregoing shall not affect any rights which holders may have with respect to any requirement that our company repurchase the Series E Preferred Shares or for any right to monetary damages. All the preferential amounts to be paid to the holders of the Series E Preferred Shares shall be paid or set apart for payment before the payment or setting apart for payment of any amount for, or the distribution of any Liquidation Funds of our company to the holders of shares of other classes or series of our preferred stock junior in rank to the Series E Preferred Shares in connection with a Liquidation Event.

Mandatory Monthly Redemption.

The certificate of designations provides that "Mandatory Redemption Shares" means, with respect to (a) any Mandatory Redemption Date (other than the Maturity Date) an amount equal to 1/27th of the Series E Preferred Shares initially issued pursuant to the stock purchase agreement (regardless of whether any holder has converted any Series E Preferred Shares or we have optionally redeemed any Series E Preferred Shares) and (b) the Maturity Date, all outstanding Series E Preferred Shares. On each applicable Mandatory Redemption Date, we shall redeem the Mandatory Redemption Shares at an aggregate redemption price equal to the sum of (x) the product of (A) the Liquidation Preference and (B) the number of Mandatory Redemption Shares required to be redeemed on such Mandatory Redemption Date plus (y) any and all accrued but unpaid dividends on all of the outstanding Series E Preferred Shares (the "Mandatory Redemption Price"). The Mandatory Redemption Price shall be payable, at our option, in cash or shares of our Common Stock or any combination of cash and shares of our Common Stock, provided, however, that no portion of the Mandatory Redemption Price may be paid in shares of our Common Stock unless the Equity Conditions are satisfied or waived by the holders of a majority of the Series E Preferred Shares (the "Required Holders") in writing prior to delivery of the applicable Mandatory Redemption Notice (as defined below); provided, further, however, that the portion of the applicable Mandatory Redemption Price that we elect to pay in shares of our Common Stock (if any) shall not exceed the Dollar Volume Limitation (unless waived by the Required Holders in writing).

On a date not less than twenty-two (22) trading days, but in no event more than twenty-five (25) trading days, prior to each Mandatory Redemption Date (the "Mandatory Redemption Notice Date"), we shall deliver a written notice (a "Mandatory Redemption Notice") to the holders, which shall either: (i) confirm that the entire applicable Mandatory Redemption Price shall be paid in cash; or (ii) (A) state that we elect to pay all or a portion of the Mandatory Redemption Price in shares of our Common Stock, (B) specify the portion that we elect to pay in cash (expressed in dollars) (such amount, the "Cash Payment Amount") and the portion that we elect to pay in shares of our Common Stock (expressed in dollars) (such portion a "Stock Payment Amount"), which amounts when added together must equal the applicable Mandatory Redemption Price, (C) certify that the Equity Conditions (as defined below) are then satisfied (or waived by the Required Holders), (D) state the Dollar Volume Limitation (expressed in dollars) and certify that the Stock Payment Amount does not exceed such Dollar Volume Limitation and (E) certify that the Maximum Share Amount (as defined below) has not been exceeded. If (x) we do not timely deliver a Mandatory Redemption Notice or (y) the Equity Conditions are not satisfied (unless waived by the Required Holders), then we shall be deemed to have delivered, a Mandatory Redemption Notice electing to pay the entire Mandatory Redemption Price in cash. The certificate of designations provides that "Dollar Volume Limitation" means fifteen percent (15%) of the aggregate dollar trading volume of our Common Stock on the NYSE MKT (or other applicable trading market) over the twenty-two (22) consecutive trading day period ending on the trading day immediately preceding the date of the Mandatory Redemption Notice or Optional Redemption Notice, as applicable. The term "dollar trading volume" for any trading day shall be determined by multiplying the Daily VWAP by the volume as reported on Bloomberg for such trading day.

The term “Equity Conditions” means each of the following: (i) on each day during the Equity Conditions Measuring Period, all shares of our Common Stock to be issued on the applicable Mandatory Redemption Date (or such other date on or event for which the Equity Conditions are required to be satisfied) shall be eligible for resale by the holder without restriction and without need for additional registration under any applicable federal or state securities laws, and we shall have no knowledge of any fact that would cause any shares of Common Stock not to be so eligible for resale by the holder without restriction and without need for additional registration under any applicable federal or state securities laws; (ii) on each day during the Equity Conditions Measuring Period, the shares of Common Stock are designated for listing on a trading market and shall not have been suspended from trading on such trading market nor shall delisting or suspension by such exchange or market have been threatened or pending in writing by such exchange nor shall there be any Securities and Exchange Commission or judicial stop trade order or trading suspension stop order; (iii) any shares of our Common Stock to be issued in connection with the applicable Mandatory Redemption Date (or such other date on or event for which the Equity Conditions are required to be satisfied) may be issued in full without violating the rules or regulations of the trading market or any applicable laws; (iv) on each day during the Equity Conditions Measuring Period, there shall not have occurred and be continuing, unless waived by the holder, either (A) a Trigger Event (as defined below) or (B) an event that with the passage of time or giving of notice would constitute a Trigger Event; (v) on each day during the Equity Conditions Measuring Period, we have not provided any holder with any non-public information; (vi) on each day during the Equity Conditions Measuring Period, neither the registration statement of which the prospectus supplement pertaining to our senior convertible preferred stock offering is a part nor the prospectus nor such prospectus supplement contains any untrue statement of a material fact or omits to state a material fact necessary in order to make the statements made therein, in the light of the circumstances under which they were made, not misleading and such registration statement, prospectus and such prospectus supplement comply with all applicable securities laws as to form and substance (unless the issuable shares of Common Stock may be sold without restriction); (vii) our transfer agent for the shares of our Common Stock is participating in the Depository Trust Company (“DTC”) Fast Automated Securities Transfer Program; and (viii) all shares of our Common Stock to be issued in connection with the applicable Mandatory Redemption Date (or such other date on or event for which the Equity Conditions are required to be satisfied) are duly authorized and will be validly issued, fully paid and non-assessable upon issuance, free and clear of all liens, claims or encumbrances, and the issuance thereof will not require any further approvals of our board of directors or stockholders. “Equity Conditions Measuring Period” means the period beginning twenty (20) trading days prior to the applicable Mandatory Redemption Date (or such other date on or event for which the Equity Conditions are required to be satisfied) and ending on and including such Mandatory Redemption Date.

To the extent that we elect (or are required) to pay all or any portion of the applicable Mandatory Redemption Price in shares of our Common Stock, the applicable Stock Payment Amount will be paid as follows:

- (A) twenty-one (21) trading days prior to the applicable Mandatory Redemption Date (the “First Advance Date”), we shall deliver to the holders a number of shares of our Common Stock determined by dividing (x) the Stock Payment Amount for such Mandatory Redemption Date by (y) ninety-two percent (92%) of the Daily VWAP on the trading day immediately preceding such Advance Date (the “First Advance Shares”);
- (B) eleven (11) trading days prior to the applicable Mandatory Redemption Date (the “Second Advance Date” and together with the First Advance Date, the “Advance Dates” and each, an “Advance Date”), we shall deliver to the holders a number of shares of our Common Stock equal to the positive difference (if any) between (x) the quotient of (1) the Stock Payment Amount and (2) the average of the five lowest Daily VWAPs during the first (10) ten trading days of the applicable Stock Payment Pricing Period and (y) the number of First Advance Shares delivered to the holders in connection with such Mandatory Redemption Date (the “Second Advance Shares” and together with the First Advance Shares, the “Advance Shares”); and
- (C) not later than three (3) trading days after the applicable Mandatory Redemption Date, we shall deliver an additional number of shares of our Common Stock (the “True-Up Shares”), if any, to the holders equal to the positive difference between (a) the Stock Payment Amount divided by the Stock Payment Price for such Mandatory Redemption Date and (b) the Advance Shares; provided; however, that if clause (b) exceeds clause (a), then each holder shall return its pro rata portion of such excess number of shares of our Common Stock to us, and such excess shares shall immediately be deemed cancelled effective as of the True Up.

“Daily VWAP” means, for any date, (i) the daily volume weighted average price of our Common Stock for such date on the NYSE MKT as reported by Bloomberg; (ii) if our Common Stock is not then listed on the NYSE MKT, the daily volume

weighted average price of our Common Stock for such date on such other trading market where our Common Stock is then listed as reported by Bloomberg; (iii) if the foregoing do not apply, the volume weighted average price of our Common Stock in the over-the-counter market on the electronic bulletin board for our Common Stock as reported by Bloomberg, or, if no volume weighted average price is reported for such security by Bloomberg, the highest bid as reported on the “pink sheets” at the close of trading; or (iv) in all other cases, the fair market value of a share of our Common Stock as determined by an independent appraiser selected in good faith by the Required Holders and reasonably acceptable to us.

To the extent that we elect to pay all or any portion of the applicable Mandatory Redemption Price in shares of our Common Stock:

- (A) to the extent that the aggregate number of Advance Shares or True-Up Shares to be delivered to a holder in respect of any individual Stock Payment Amount would cause such holder to exceed the Beneficial Ownership Limitation (as defined below under “Ownership Cap”), then, (I) the holder shall provide written notice to us that such delivery of all or a portion of the Advance Shares or True-Up Shares would cause such holder to exceed the Beneficial Ownership Limitation, and (II) in addition to delivery of the number of Advance Shares or True-Up Shares that would not cause such holder to exceed the Beneficial Ownership Limitation, we shall pay to such holder in lieu of such number of Advance Shares or True-Up Shares that would cause such holder to exceed the Beneficial Ownership Limitation (such excess number of shares, the “Excess Shares”), not more than the later of three (3) trading days after the Mandatory Redemption Date or ten (10) trading days after the date of such holder's written notice, an amount in cash equal to the portion of the Stock Payment Amount that would otherwise be payable in respect of the Excess Shares;
- (B) to the extent that such Stock Payment Amount, when aggregated with any shares of our Common Stock already issued in respect of all of the Series E Preferred Shares, would cause the Maximum Share Amount to be exceeded, then that portion of such Stock Payment Amount that would not exceed the Maximum Share Amount shall be delivered to the holders hereunder in shares of our Common Stock as provided above, ratably based on the holders' relative ownership of the outstanding Series E Preferred Shares, and we shall pay to the holders, not more than three (3) trading days after the Mandatory Redemption Date, an amount in cash equal to the Stock Replacement Payment in lieu of any portion of such Stock Payment Amount that would cause the Maximum Share Amount to be exceeded;
- (C) if the Equity Conditions are neither (x) satisfied nor (y) waived, on the trading day immediately preceding the First Advance Date and/or on the First Advance Date, or if the Daily VWAP cannot be determined on the trading day immediately preceding the First Advance Date, or if we fail to deliver the First Advance Shares to the holders on the First Advance Date, then the holder may, at its options upon written notice to us, require us to pay to such holder, not later than three (3) trading days after the Mandatory Redemption Date, an amount of cash equal to the Stock Replacement Payment in lieu of such Stock Payment Amount;
or
- (D) if subsequent to the delivery of the First Advance Shares (A) the Equity Conditions are neither (x) satisfied nor (y) waived in accordance with the terms hereof, as applicable, on any day of the Stock Payment Pricing Period or (B) if the Daily VWAP cannot be determined on any day of the Stock Payment Pricing Period, then each holder may, at its option, elect in a written notice to us to redeliver all or any portion of the Advance Shares to us and we will pay to such holder, not later than three (3) trading days after the Mandatory Redemption Date, an amount of cash equal to the Stock Replacement Payment in lieu of such portion of the Stock Payment Amount for which such holder has elected in writing to redeliver Advance Shares to us.

The “Stock Replacement Payment” shall be determined according to the following formula:

$$SRP = (X/Y) * S$$

For the purposes of the foregoing formula:

SRP = Stock Replacement Payment

X = the average Daily VWAP of the shares of our Common Stock for the applicable Stock Payment Pricing Period

Y = the Stock Payment Price for the applicable Stock Payment Pricing Period

S = the Stock Payment Amount (or, (A) in the case that either or both of Maximum Share Amount and/or Beneficial Ownership Limitation is exceeded as provided above, only that portion of such Stock Payment Amount that would exceed the Maximum Share Amount and/or Beneficial Ownership Limitation, as applicable, and/or (B) that portion of the Stock Payment Amount for which the holder has elected in its written notice to redeliver Advance Shares to us).

Any shares of our Common Stock required to be delivered by us to a holder shall be credited to such holder's or its designee's balance account with DTC through its Deposit/Withdrawal at Custodian system ("DWAC").

Each mandatory redemption (and the related payment of the Mandatory Redemption Price) shall be made pro rata among the holders based on each holder's relative percentage ownership of the outstanding Series E Preferred Shares.

Notwithstanding the delivery of a Mandatory Redemption Notice, the holder may deliver a Conversion Notice with respect to all or any portion of the specific Mandatory Redemption Shares to be redeemed on the applicable Mandatory Redemption Date at any time prior to such Mandatory Redemption Date. Any Advance Shares delivered to such holder in connection with such Mandatory Redemption Date shall count towards the number of shares of our Common Stock that we will be obligated to deliver on the applicable Share Delivery Date (as defined below), and to the extent that the Advance Shares exceeds the number of shares of our Common Stock that we would be required to deliver on the applicable Share Delivery Date, the holder shall return such excess to us.

Each and every time that we sell any shares of our Common Stock pursuant to any Equity Line, we shall immediately deliver a written notice to each holder (an "Equity Line Draw Notice"), which Equity Line Draw Notice shall state the aggregate purchase price for such shares of our Common Stock (the "Equity Line Aggregate Purchase Price"). Each holder may, at its option, by delivering a written notice to us, require us to pay the Mandatory Redemption Price (or the appropriate portion thereof) on the next succeeding Mandatory Redemption Date (or to the extent that the date of such Equity Line Draw notice is subsequent to the date of the Mandatory Redemption Notice for such Mandatory Redemption Date, then the next succeeding Mandatory Redemption Date) in shares of our Common Stock in an amount equal to its pro rata portion of the Equity Line Aggregate Purchase Price. To the extent that the Equity Line Aggregate Purchase Price exceeds the aggregate amount of the entire Mandatory Redemption Price for such Mandatory Redemption Date, then on each succeeding Mandatory Redemption Date the holder may, at its option, by delivering a written notice to us, require us to pay its pro rata portion of the applicable Mandatory Redemption Price in shares of our Common Stock until we have made aggregate payments in shares of our Common Stock equal to its pro rata portion of the entire Equity Line Aggregate Purchase Price. Notwithstanding anything to the contrary, all payments of Mandatory Redemption Price made in shares of our Common Stock shall be subject the requirement to make the appropriate Stock Replacement Payment if applicable. Pro rata portion for a holder is the number of Series E Preferred Shares then held by such holder divided by the aggregate number of outstanding Series E Preferred Shares.

Optional Redemption. We may, at our option, redeem the Series E Preferred Shares, at any time and from time to time, in whole or in part (but not less than 1,000,000 Series E Preferred Shares at any one time) for an amount equal to (a) the liquidation preference per Series E Preferred Share plus any accrued and unpaid dividends through the optional redemption date (the "Base Redemption Price") plus (b) (i) if such prepayment occurs on or before the twelve month anniversary of the closing, an amount equal to 15% of the Base Redemption Price or (ii) if such prepayment occurs at any time after the twelve month anniversary of the closing date, an amount equal to 10% of the Base Redemption Price (the additional amount under clause (b) being referred to as the "Additional Redemption Price"). The Base Redemption Price will be paid in cash and the Additional Redemption Price will be paid in cash or, at our option and provided (w) the Equity Conditions are satisfied (unless waived by the Required Holders), (x) the portion of the Additional Redemption Price to be paid in shares of our Common Stock does not exceed the Dollar Volume Limitation (unless waived by the Required Holders), (y) the Maximum Share Amount is not exceeded and (z) the Daily VWAP is available on the trading day immediately preceding the First Optional Redemption Advance Date and on each day of the Stock Payment Pricing Period, in shares of our Common Stock.

We will deliver written notice of optional redemption to the holders 30 trading days prior to the date we set for such optional redemption, which may not be a Mandatory Redemption Date or any day of a Stock Payment Pricing Period with respect to any mandatory redemption date. Each holder may submit a conversion notice for the specific Series E Preferred Shares to be redeemed at any time prior to the optional redemption date. The optional redemption notice will specify the number of Series E Preferred Shares to be redeemed and what portion of the Additional Redemption Price will be paid in shares of our Common Stock (expressed in dollars), what portion of the Additional Redemption Price will be paid in cash (expressed in dollars) and (A) certify that the Equity Conditions are satisfied, (B) state the Dollar Volume Limitation (expressed in dollars) and certify that the portion of the Additional Redemption Price to be paid in shares of our Common Stock does not exceed such Dollar Volume Limitation and (C) certify that the Maximum Share Amount has not been exceeded. The optional redemption notice will be irrevocable.

To the extent that any portion of the Additional Redemption Price will be paid in shares of our Common Stock, 21 trading days prior to the optional redemption date (the "First Optional Redemption Advance Date"), we will advance to the holders a number of shares of our Common Stock determined by dividing (x) that portion of the Additional Redemption Price to be paid in shares of our Common Stock by (y) 92% of the Daily VWAP on the trading day immediately preceding the First Optional Redemption Advance Date (the "First Optional Redemption Advance Shares"). In addition, 11 trading days prior to the applicable optional redemption date (the "Second Optional Redemption Advance Date" and together with the First Optional Redemption Advance Date, the "Optional Redemption Advance Dates" and each, an "Optional Redemption Advance Date"), we will advance to the holders an additional number of shares of our Common Stock equal to the positive difference (if any) between (x) the quotient of (1) the portion of the Additional Redemption Price to be paid in shares of our Common Stock and (2) the average of the five lowest Daily VWAPs during the first 10 trading days of the applicable Stock Payment Pricing Period and (y) the number of First Optional Redemption Advance Shares delivered to the holders in connection with such optional redemption date (the "Second Optional Redemption Advance Shares" and together with the First Optional Redemption Advance Shares, the "Optional Redemption Advance Shares"). Not later than three trading days after the optional redemption date, we will deliver an additional number of shares of our Common Stock, if any, to the holder equal to the positive difference between (1) that portion of the Additional Redemption Price to be paid in shares of our Common Stock divided by the Stock Payment Price and (2) the Optional Redemption Advance Shares. If clause (2) of the immediately preceding sentence exceeds clause (1) of the immediately preceding sentence, then each holder shall return to us its pro rata portion of such excess number of shares of our Common Stock. No holder shall have any liability to us to the extent that any Optional Redemption Advance Shares that are returned to us pursuant to the immediately preceding sentence decrease in value following the applicable Optional Redemption Advance Date.

Optional Conversion by the Holders. Each holder of the Series E Preferred Shares shall have the right at any time and from time to time, at the option of such holder, to convert all or any portion of the Series E Preferred Shares held by such holder, for such number shares of our Common Stock, free and clear of any liens, claims or encumbrances, as is determined by dividing (i) the Liquidation Preference times the number of Series E Preferred Shares being converted, by (ii) the Conversion Price (as defined below) in effect on the Conversion Date (as defined below). Immediately following such conversion, the persons entitled to receive the shares of our Common Stock upon the conversion of Series E Preferred Shares shall be treated for all purposes as having become the owners of such shares of our Common Stock, subject to the rights provided herein to holders. Pursuant to the certificate of designations, the initial "Conversion Price" was \$2.0004, subject to adjustment as provided therein. As of August 17, 2012, the adjusted Conversion Price was \$1.20. The Conversion Price is subject to further adjustment in accordance with the terms of the certificate of designations.

The Conversion Price is subject to adjustment under the following circumstances:

- (i) in the event we effect a stock split or combination of our outstanding Common Stock, then the conversion price then in effect will be proportionately decreased or increased, as applicable.
- (ii) in the event we make, issue or set a record date for the determination of holders of our Common Stock entitled to receive a dividend or other distribution payable in shares of our Common Stock, then the conversion price shall be decreased by multiplying the conversion price then in effect by a fraction equal to:
 - (a) the total number of shares of our Common Stock issued and outstanding immediately prior to such issuance or the close of business on such record date divided by
 - (b) the total number of shares our Common Stock issued and outstanding immediately prior to such issuance or the close of business on such record date plus the number of shares of our Common Stock issuable in payment of such dividend or distribution.
- (iii) in the event we make, issue or set a record date for the determination of holders of our Common Stock entitled to receive a dividend or other distribution payable in securities or property other than shares of our Common Stock, then an appropriate revision shall be made to conversion price then in effect such that the holders of the Series E Preferred Shares shall receive upon conversion thereof, in addition to the shares of our Common Stock to which the holders would be entitled, the number of securities or other property that they would have received had such holders converted their Series E Preferred Shares into shares of our Common Stock on the date of such event.

- (iv) in the event we issue or sell shares of our Common Stock (other than as provided above in connection with a stock split or combination or the payment of certain dividends and distributions) at a price per share less than the Conversion Price, or without consideration, the Conversion Price then in effect upon each such issuance shall be adjusted by multiplying the Conversion Price by a fraction equal to: (a) the total number of shares of our Common Stock issued and outstanding immediately prior to such issuance plus the number of shares of our Common Stock which the aggregate consideration for the total number of such additional shares of our Common Stock so issued would purchase at a price per share equal to the Conversion Price then in effect divided by (b) the number of shares of our Common Stock outstanding immediately after the issuance of such additional shares.

- (v) in the event we shall issue or sell any rights, warrants or options to purchase or other securities convertible into or exchangeable or exercisable for, directly or indirectly, any shares of our Common Stock or securities convertible into or exchangeable or exercisable for, directly or indirectly, shares of our Common Stock or common stock equivalents and the price per share at which such additional shares of our Common Stock may be issued pursuant to any such common stock equivalent shall be less than the Conversion Price then in effect, or if after the issuance of any common stock equivalents, the price per share at for which such additional shares of our Common Stock may be issued pursuant to any such common stock equivalent is thereafter amended or adjusted such that the price as so amended or adjusted shall be less than the Conversion Price then in effect, then the conversion price then in effect upon each such issuance or adjustment shall be adjusted by multiplying the conversion price by a fraction equal to: (a) the total number of shares of our Common Stock issued and outstanding immediately prior to such issuance plus the number of shares of our Common Stock which the aggregate consideration for the total number of such additional shares of our Common Stock so issued would purchase at a price per share equal to the conversion price then in effect divided by (b) the number of shares of our Common Stock outstanding immediately after the issuance of such additional shares.

Notwithstanding the foregoing, the Conversion Price will not be adjusted for the sale or issuance of “Excluded Securities,” which are defined in the certificate of designations as the following: (a) shares of our Common Stock or common stock equivalents issued pursuant to a stock option plan that has been approved by our Board of Directors and our stockholders, pursuant to which our securities may be issued only to a person eligible for award under such plan, (b) shares of our Common Stock or common stock equivalents issued to employees or consultants (including in connection with investor relations activities) for compensatory purposes, (c) shares of our Common Stock or common stock equivalents issued upon the exercise or conversion of common stock equivalents outstanding on the closing date for the offering of the Series E Preferred Stock, (d) shares of our Common Stock or common stock equivalents issued to investors in our common stock offering that was conducted concurrently with the offering of Series E Preferred Stock, (e) shares of our Common Stock or common stock equivalents issued in the PCT Merger, (f) shares of our Common Stock or common stock equivalents issued in the offering of the Series E Preferred Stock, including pursuant to the certificate of designations or upon exercise of the warrants offered in connection with the Series E Preferred Stock, and (g) shares of our Common Stock or common stock equivalents issued or deemed to be issued in connection with any acquisition by our company, whether through a merger, an acquisition of stock or an acquisition of assets, or a license, of any business, product, assets or technologies, or any strategic partnership, strategic investment or joint venture involving any technology or product, or any other transaction the primary purpose of which is not to raise capital; provided however, that the number of shares of our Common Stock which may be issued pursuant to this clause (g) in any transaction or series of related transactions shall not exceed 33% of the number of shares of our Common Stock outstanding immediately prior to any such transaction.

In case of any reorganization or any reclassification of our capital stock or any consolidation or merger of our company with or into any other corporation or corporations or a sale or transfer of all or substantially all of our assets to any other person or a “going private” transaction under Rule 13e-3 promulgated pursuant to the Securities Exchange Act of 1934 (the “Exchange Act”), as amended, then, as part of such reorganization, consolidation, merger, or transfer if the holders of shares of our Common Stock receive any publicly traded securities as part or all of the consideration for such reorganization, reclassification, consolidation, merger or sale, then it shall be a condition precedent of any such event or transaction that provision shall be made such that each Series E Preferred Share shall thereafter be convertible into such new securities at a conversion price and pricing formula which places the holders of Series E Preferred Shares in an economically equivalent position as they would have been if not for such event. The foregoing does not limit the right that holders of the Series E Preferred Shares have to require us to repurchase the Series E Preferred Shares. See “Mandatory Repurchase By Us” below.

Reservation of Shares Issuable Upon Conversion. We shall at all times reserve and keep available out of our authorized but unissued shares of our Common Stock, solely for the purposes of effecting the conversion and/or redemption of the Series E Preferred Shares, an number of shares of our Common Stock equal to 200% of the number of shares issuable upon conversion of the Series E Preferred Shares at the conversion price then in effect. If at any time while any of the Series E Preferred Shares remain outstanding we do not have a sufficient number of authorized and unreserved shares of our Common Stock to satisfy

such obligation to reserve for issuance upon conversion and/or redemption of the Series E Preferred Shares, then we shall promptly take all action necessary to increase the number of authorized shares of our Common Stock to an amount sufficient to allow us to satisfy such obligation to reserve for issuance upon conversion and/or redemption of the Series E Preferred Shares. Without limiting the generality of the foregoing sentence, as soon as practicable after the date on which we fail to have a sufficient number of authorized but unissued shares of our Common Stock available to satisfy such obligation, but in no event later than sixty (60) days (or the lesser of (i) ninety (90) days if the proxy statement is reviewed by the staff of the Securities and Exchange Commission or (ii) ten (10) days after the staff of the SEC indicated that it has no further comments to such proxy statement) after the occurrence of such failure, we shall hold a meeting of our stockholders for the approval of an increase in the number of authorized shares of our Common Stock. In connection with such meeting, we shall provide each stockholder with a proxy statement and shall use our reasonable best efforts to solicit our stockholders' approval of such increase in authorized shares of our Common Stock and to cause our board of directors to recommend to the stockholders that they approve such proposal.

Fractional Shares. No fractional shares shall be issued upon the conversion of any Series E Preferred Shares. All shares of our Common Stock (including fractions thereof) issuable upon conversion of more than one Series E Preferred Share by a holder thereof and all Series E Preferred Shares issuable upon the purchase thereof shall be aggregated for purposes of determining whether the conversion and/or purchase would result in the issuance of any fractional share. If, after the aforementioned aggregation, the conversion and/or purchase would result in the issuance of a fraction of a share of our Common Stock, we shall, in lieu of issuing any fractional share, either round up the number of shares to the next highest whole number or, at our option, pay the holder otherwise entitled to such fraction a sum in cash equal to the fair market value of such fraction on the conversion date (as determined in good faith by our Board of Directors).

Failure to Redeliver. If any holder fails to re-deliver shares of our Common Stock to us within ten (10) trading days of being required to do so in connection with a Mandatory Redemption or an optional redemption by us, then, unless such shares of Common Stock have been called by us, we may, at our option, redeem a number of Series E Preferred Shares having a Liquidation Preference equal in value to the product of (x) such number of shares of our Common Stock and (y) the Stock Payment Price for such Mandatory Redemption Date or Optional Redemption Date, the case may be, in lieu of requiring such holder to return such shares of Common Stock.

Mandatory Repurchase by Us. Each holder of Series E Preferred Shares shall have the unilateral option and right to compel us to repurchase for cash any or all of such holder's Series E Preferred Shares within three days of a written notice requiring such repurchase (provided that no written notice shall be required for if any of the events described in clauses (v) and (vi) below occur and demand for repurchase shall be deemed automatically made upon the occurrence of any of those events), at a price per Series E Preferred Share equal to the sum of (a) the liquidation preference plus (b) any and all accrued and unpaid dividends on the Series E Preferred Shares (the sum of (a) and (b), the "Base Mandatory Repurchase Price") plus (c) (i) if such demand for repurchase occurs on or before the twelve month anniversary of the closing date, an amount equal to 15% of the Base Mandatory Repurchase Price, or (ii) if such demand for repurchase occurs at any time after the twelve month anniversary of the closing date, an amount equal to 10% of the Base Mandatory Repurchase Price, if any of the following events shall have occurred or are continuing:

- (i) A Change in Control Transaction (as defined below);
- (ii) A "going private" transaction under SEC rules;
- (iii) A tender offer by our company under SEC Rule 13e-4;
- (iv) the suspension from trading or the failure of our Common Stock to be listed on a trading market for a period of five consecutive trading days or for more than an aggregate of 10 trading days in any 365-day period;

- (v) the entry by a competent court of (i) a decree or order for relief pertaining to our company or any of our subsidiaries under any applicable federal or state bankruptcy, insolvency, reorganization or other similar law or (ii) a decree or order adjudging our company or any of our subsidiaries as bankrupt or insolvent or (iii) appointing a custodian, receiver, trustee or other similar official for our company or any of our subsidiaries or of any substantial part of our property, or ordering the liquidation of our company's affairs, and the continuance of any such decree or order for a period of 60 consecutive days;
- (vi) the commencement by our company or any of our subsidiaries of a voluntary case or proceeding under any applicable federal or state bankruptcy, insolvency, reorganization or other similar law, or the consent by us to the entry of a decree or order for relief in an involuntary case or proceeding under any applicable federal or state bankruptcy, insolvency, reorganization or other similar law or to the commencement of any bankruptcy or insolvency case or proceeding against our company, or the consent by us to the appointment of or taking possession by a custodian, receiver, trustee or other similar official of our company or of any substantial part of our property, or the making by us of an assignment for the benefit of creditors, or the admission by our company in writing of its inability to pay its debts generally as they become due;
- (vii) following an Authorized Share Failure (as defined), our failure to receive stockholder approval to approve the required increase in the number of shares of our Common Stock within five days after the Meeting Outside Date (as defined); or
- (viii) our failure to deliver shares of our Common Stock on any Share Delivery Date, Advance Date, mandatory redemption date or optional redemption date, if such failure continues for two (2) trading days after the date that delivery of shares of Common Stock is due;
- (ix) our failure to pay any amounts when and as due pursuant to the certificate of designations or any other document relating to the issuance of the Series E Preferred Shares, if such failure continues for two (2) trading days after the date that such payment is due;
- (x) our breach of certain covenants contained in the certificate of designations and the stock purchase agreement;
- (xi) our company or any of its subsidiaries shall (A) default in any payment of any amount or amounts of principal of or interest on any indebtedness the aggregate principal amount of which indebtedness is in excess of \$1,000,000 or (B) default in the observance or performance of any other agreement or condition relating to any such indebtedness, or any other event shall occur or condition exist, as a result of which the holder or holders or beneficiary or beneficiaries of such indebtedness or a trustee on their behalf have declared such indebtedness to be due prior to its stated maturity;
- (xii) the effectiveness of the registration statement pertaining to the Series E Preferred Shares or the ability to use the applicable prospectus supplement and the prospectus lapses for any reason and continues for a period of 10 consecutive days or for more than an aggregate of 20 days in any 365-day period;
- (xiii) we breach any representation, warranty, covenant or other term or condition of the certificate of designations, the stock purchase agreement or the warrant to be issued with the Series E Preferred Shares, except to the extent that such breach would not have a material adverse effect (as defined in the stock purchase agreement), and except in the case of a breach of a covenant which is curable, only if such breach remains uncured for a period of at least 10 calendar days (the events described in clauses (v), (vi), (viii), (ix), (x), (xi), (xii) and (xiii) are collectively referred to as the "Trigger Events" and each, as a "Trigger Event").

A "Change in Control Transaction" will be deemed to exist if (i) there occurs any consolidation or merger of our company with or into any other corporation or other entity or person (whether or not our company is the surviving corporation), or any other corporate reorganization or transaction or series of related transactions in which in excess of 50% of the voting power in our company is transferred through a merger, consolidation, tender offer or similar transaction, (ii) any person, together with its affiliates and associates, beneficially owns or is deemed to beneficially own (as described in Rule 13d-3 under the Exchange

Act without regard to the 60-day exercise period) in excess of 50% of the voting power in our company (provided, however, that if any person is immediately prior to the closing date a beneficial owner of 40% or more of our Common Stock, it shall not be deemed to be a Change of Control Transaction if such person increases its beneficial ownership percentage by not more than 10 percentage points), (iii) there is a replacement of more than one-half of the members of our board of directors which is not approved by those individuals who are members of our board on the date thereof, in one or a series of related transactions or (iv) a sale or transfer of all or substantially all of our assets, determined on a consolidated basis; provided, however, that a Change in Control Transaction will not be deemed to have occurred pursuant to clause (iv) if such sale or transfer is the sale or transfer of not more than one business segment during the period from the closing of the offering of the Series E Preferred Shares (November 19, 2010) through the Maturity Date and we remain a publicly traded corporation and if, on the effective date of the sale or transfer described therein, we deposit funds in the escrow account (as defined in the stock purchase agreement) such that the balance in the escrow account after such deposit is the lesser of \$5 million or 100% of the aggregate liquidation preference of the outstanding Series E Preferred Shares.

Ownership Cap. Notwithstanding anything to the contrary set forth herein, at no time may we issue to a holder, shares of our Common Stock if the number of shares of our Common Stock to be issued pursuant to such issuance would exceed, when aggregated with all other shares of our Common Stock beneficially owned by such holder at such time (as determined in accordance with relevant Exchange Act rules), the number of shares of our Common Stock that would result in the holder beneficially owning (as determined in accordance with relevant Exchange Act rules) more than 4.9% (the "Beneficial Ownership Limitation") of our then issued and outstanding Common Stock. Each holder shall have the right (with respect to itself only) to waive such ownership cap upon not less than sixty-five (65) days' prior notice to us. Notwithstanding the foregoing, the holder shall have the right to: (A) at any time and from time to time immediately reduce the Beneficial Ownership Limitation and (B) (subject to waiver) at any time and from time to time, increase the Beneficial Ownership Limitation immediately in the event of the announcement as pending or planned of a Change in Control Transaction.

Participation. The holders of the Series E Preferred Shares shall be entitled to such dividends paid and distributions made to the holders of shares of our Common Stock to the same extent as if such holders of the Series E Preferred Shares had converted the Series E Preferred Shares into shares of our Common Stock (without regard to any limitations on conversion herein or elsewhere) and had held such shares of Common Stock on the record date for such dividends and distributions.

Voting Rights. Except as expressly provided in the certificate of designations, holders of the Series E Preferred Shares shall not have any voting rights. So long as any Series E Preferred Shares are outstanding, in addition to any other vote or consent of our stockholders required by law or by our amended and restated certificate of incorporation and except where the vote or written consent of holders of a greater than number of shares is required by law or by another provision of our amended and restated certificate of incorporation, the affirmative vote, at a meeting duly called for such purpose or the written consent without a meeting, of the holders of at least a majority of the Series E Preferred Shares then outstanding, voting together as a single class, shall be required before we may: (a) amend or repeal any provision of, or add any provision to, the certificate of designations governing the Series E Preferred Shares, our amended and restated certificate of incorporation or bylaws, or file any articles of amendment, certificate of designations, preferences, limitations and relative rights of any series of preferred stock, if any such action would adversely alter or change the preferences, rights, privileges or powers of, or restrictions provided for the benefit of the Series E Preferred Shares, regardless of whether any such action shall be by means of amendment to our certificate of incorporation or by merger, consolidation or otherwise; (b) increase or decrease (other than by conversion) the authorized number of Series E Preferred Shares (we may increase or decrease our number of authorized shares of undesignated "blank check" preferred stock); (c) create or authorize (by reclassification or otherwise) any new class or series of shares that has a preference over or is on a parity with the Series E Preferred Shares with respect to dividends or the distribution of assets on a Liquidation Event; (d) purchase, repurchase or redeem any shares of our Common Stock or other shares of our capital stock; (e) pay dividends or make any other distribution on our Common Stock or other capital stock; (f) whether or not prohibited by the terms of the Series E Preferred Shares, circumvent a right of the Series E Preferred Shares.

Ranking. The Series E Preferred Shares shall rank senior to our Common Stock and any other class or series of our stock now existing or hereinafter authorized over which the Series E Preferred Shares has preference or priority in the payment of dividends or in the distribution of assets on any voluntary or involuntary dissolution or winding up of our affairs. Without the prior written consent of the Required Holders, we may not authorize or issue additional or other capital stock that is of senior or pari-passu rank to the Series E Preferred Shares in respect of preferences as to dividends and other distributions, amortization and redemption payments and payments upon a liquidation event without the prior express written consent of the holders of a majority of the Series E Preferred Shares. We may issue preferred stock that is junior in rank to the Series E Preferred Shares in respect of the preferences as to dividends and other distributions, amortization and redemption payments and payments upon a liquidation event, provided, that the maturity date (or any other date requiring redemption, repayment or any other payment, including without limitation, dividends) of any such junior preferred shares is not on or before ninety-one (91) days after the maturity date for the Series E Preferred Shares.

Options

As of August 17, 2012, we had outstanding options to purchase an aggregate of 22,627,142 shares of our Common Stock with exercise prices ranging from \$0.35 to \$15.00 per share, with an approximate weighted average exercise price of \$1.35 per share. The shares of our Common Stock underlying all such options are registered with the SEC.

Warrants

As of August 17, 2012, we had outstanding warrants to purchase an aggregate of 54,735,501 shares of our Common Stock with exercise prices ranging from \$0.36 to \$7.00, with an approximate weighted average exercise price of \$1.68 per share. The shares of Common Stock underlying the vast majority of such warrants have been registered for resale.

Class D Warrants

Each Class D warrant entitles the holder to purchase one share of our Common Stock at an exercise price per share of \$2.50. The exercise price per share of each Class D warrant is subject to adjustment upon the occurrence of certain events as provided in the Class D warrant certificate and summarized below. The Class D warrants may be exercised at any time during their five year term, or eight year term in the case of a Class D warrant to purchase an aggregate of 4,000,000 shares held by RimAsia Capital Partners, L.P., a Cayman Islands exempted limited partnership and an affiliate of NeoStem ("RimAsia"), unless redeemed. The Class D warrants which have not been previously exercised will expire at the expiration date. A Class D warrant holder will not be deemed to be a holder of the underlying Common Stock for any purpose until the Class D warrant is exercised.

In the event our Common Stock is trading at a per share price equal to or exceeding the redemption threshold of \$3.50, or \$5.00 in the case of the Class D warrant held by RimAsia, for twenty consecutive trading days, we have the option to call the Class D warrants. If the holders of Class D warrants have not exercised the Class D Warrants within 30 days of the written notice to call, we may redeem the Class D warrants at \$0.001 per warrant. We will send the written notice of call by first class mail to Class D warrant holders at their last known addresses appearing on the registration records maintained by the transfer agent of the Class D warrants. No other form of notice by publication or otherwise will be required. If we call any Class D Warrants for redemption, they will be exercisable until close of business on the business day next preceding the specified redemption date.

The exercise price and redemption price of the Class D warrants are subject to adjustment in specified circumstances, including in the event we declare any stock dividend to stockholders or effect any split or reverse split with respect to our Common Stock after the issuance thereof. Therefore, if we effect any stock split or reverse split with respect to our Common Stock, the exercise price in effect immediately prior to such stock split or reverse split will be proportionately reduced or increased, respectively. Any adjustment of the exercise price will also result in an adjustment of the number of shares purchasable upon exercise of a Class D warrant or, if we elect, an adjustment of the number of Class D warrants outstanding. The Class D warrants do not contain provisions protecting against dilution resulting from the sale of additional shares of our Common Stock for less than the exercise price of the Class D warrants or the current market price of our Common Stock.

Until exercised, the Class D warrants will have no voting, dividend or other stockholder rights.

Warrants Issued in Our November 2010 Common Stock Offering

On November 19, 2010, in connection with a public offering of our Common Stock and certain warrants, we issued (i) 6,337,980 shares of our Common Stock and (ii) warrants to purchase up to 3,168,990 shares of our Common Stock (the "November 2010 Common Stock Offering"). The material terms and provisions of the warrants issued in connection with our November 2010 Common Stock Offering are summarized below.

Term; Exercise Price and Exercisability. In our November 2010 Common Stock Offering we issued warrants representing the rights to purchase up to an aggregate of 3,168,990 shares of our Common Stock (with 2,824,165 of such warrants remaining outstanding as of August 17, 2012). Each warrant has exercise price of \$1.85 per share, becoming exercisable six months after issuance and expiring five years from the date of issuance. The number of warrant shares that may be acquired by any holder upon any exercise of the warrant will be limited to the extent necessary to insure that, following such exercise (or other issuance), the total number of shares of our Common Stock then beneficially owned by such holder and its affiliates and any other persons whose beneficial ownership of common stock would be aggregated with the holder's for purposes of Section 13(d) of the Securities Exchange Act of 1934, as amended, does not exceed 4.99% of the total number of issued and

outstanding shares of our Common Stock (including for such purpose the shares of our Common Stock issuable upon such exercise), which is referred to as the “beneficial ownership limitation.” The holder may elect to change this beneficial ownership limitation from 4.99% to 9.99% of the total number of issued and outstanding shares of our Common Stock (including for such purpose the shares of our Common Stock issuable upon such exercise) upon providing us with not less than 61 days’ prior written notice.

Call Provision. Subject to certain exceptions, while the warrants are outstanding, if the volume weighted average price of a share of our Common Stock for each of 20 consecutive Trading Days (the “Measurement Period,” which 20 consecutive Trading Day period shall not have commenced until after the Initial Exercise Date) exceeds \$3.70 (subject to adjustment), (i) the average daily volume for such Measurement Period exceeds \$100,000 per Trading Day (subject to adjustment) and (ii) the holder is not in possession of any information that constitutes, or might constitute, material non-public information which was provided by us, then we may, within 1 Trading Day of the end of such Measurement Period, upon notice, call for cancellation of all or any portion of the warrants (a “Call”) for consideration equal to \$0.001 per share. Our right to Call the warrants shall be exercised ratably among the holders based on each holder’s initial purchase of warrants from us.

Fundamental Transaction. If, at any time while the warrants are outstanding, (1) we consolidate or merge with or into another corporation, (2) we sell, lease, license, assign, transfer, convey or otherwise dispose of all or substantially all of our assets, (3) any purchase offer, tender offer or exchange offer (whether by us or another individual or entity) is completed pursuant to which holders of our Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of our outstanding Common Stock or (4) we effect any reclassification or recapitalization of our Common Stock or any compulsory share exchange pursuant to which our Common Stock is converted into or exchanged for other securities, cash or property (each, a “Fundamental Transaction”), then upon any subsequent exercise of the warrants, each holder thereof will have the right to receive the same amount and kind of securities, as it would have been entitled to receive upon the occurrence of such Fundamental Transaction if it had been, immediately prior to such Fundamental Transaction, the holder of the number of warrant shares then issuable upon exercise of the warrant, (and any additional consideration payable as part of the Fundamental Transaction; *provided, however*, that in the event of a change of control transaction (as defined in the warrant) other than one in which the successor entity is a publicly traded corporation whose stock is listed or quoted for trading on the New York Stock Exchange, NASDAQ markets or the NYSE MKT and results in the warrants being exercisable for publicly traded common stock of such successor entity, at the request of a holder of a warrant delivered before the 90th calendar day after consummation of such change of control transaction, we (or the successor entity) will purchase the warrant by paying to the holder, cash in an amount equal to the Black Scholes value, as described in the warrant, of the remaining unexercised portion of the warrant on the date of consummation of such change of control transaction.

Certain Adjustments. The exercise price and the number of shares of our Common Stock purchasable upon the exercise of the warrants are subject to adjustment upon the occurrence of specific events, including stock dividends, stock splits, combinations and reclassifications of our Common Stock. Additionally, the exercise price of the warrants issued to the investors is subject to certain adjustments if we (i) issue rights, options or warrants to all holders of our Common Stock (and not to the warrant holder) entitling them to subscribe for or purchase shares of our Common Stock at a price per share less than the volume weighted average price (the “VWAP”) of our Common Stock on the record date for the determination of stockholders entitled to receive such rights, options or warrants, or (ii) distribute to all holders of our Common Stock (and not to the warrant holder) evidences of our indebtedness or assets (including cash and cash dividends) or rights or warrants to purchase any security.

Fractional Shares. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of the warrants. As to any fraction of a share which the holder would otherwise be entitled to purchase upon such exercise, we will, 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 or round up to the next whole share.

Exchange Listing. We do not plan on making an application to list the warrants on the NYSE MKT or any other national securities exchange or recognized trading system. Our Common Stock underlying the warrants is listed on the NYSE MKT.

The description of the warrants contained herein does not purport to be complete and is qualified in its entirety by reference to the form of warrant, which was filed as Exhibit 4.1 to our Current Report on Form 8-K filed with the SEC on November 16, 2010 in connection with the November 2010 Common Stock Offering.

Warrants Issued in Our November 2010 Preferred Stock Offering

On November 19, 2010, in connection with a registered direct placement of certain preferred stock, warrants and Common

Stock, we issued (i) 10,582,011 shares of our Series E Preferred Stock, (ii) warrants to purchase up to 1,322,486 shares of our Common Stock (subject to adjustment) and (iii) 164,418 shares of our Common Stock (the "November 2010 Preferred Stock Offering"). The material terms and provisions of the warrants issued in connection with our November 2010 Preferred Stock Offering are summarized below.

Term; Exercise Price and Exercisability. As of August 17, 2012, the warrants issued in our November 2010 Preferred Stock Offering represent the rights to purchase up to an aggregate of 1,747,188 shares of our Common Stock (as adjusted). Each warrant has an exercise price of \$1.58 per share (as adjusted), and will expire three years from the date of issuance. The number of warrant shares that may be acquired by any holder upon any exercise of the warrant will be limited to the extent necessary to insure that, following such exercise, the total number of shares of our Common Stock then beneficially owned by such holder and its affiliates and any other persons whose beneficial ownership of our Common Stock would be aggregated with the holder's for purposes of Section 13(d) of the Securities Exchange Act of 1934, as amended, does not exceed 4.9% of the then issued and outstanding shares of our Common Stock (including for such purpose the shares of our Common Stock issuable upon such exercise), which is referred to as the "beneficial ownership limitation." However, in the event of the announcement of a Change in Control Transaction (as defined in the certificate of designations with respect to the Series E Preferred Stock), the holder will have the right to (A) at any time and from time to time immediately reduce the beneficial ownership limitation and (B) (subject to waiver) at any time and from time to time, increase the beneficial ownership limitation immediately.

Exercise Elected by Us. Subject to certain exceptions, while the warrants are outstanding, if the daily volume weighted average price (the "Daily VWAP") of a share of our Common Stock for each of 20 trading days out of 30 consecutive trading days (the "Trigger Period") has remained at least 100% above the exercise price, then we may, subject to certain conditions, require the holder to exercise the warrant in full upon not less than 10 business days prior written notice (the "Mandatory Notice Period"). Notwithstanding such a notice, the holder may exercise the warrant at any time during the Mandatory Notice Period. Our right to require the exercise of the warrants is subject to the following additional conditions: (i) during each trading day of the Trigger Period and during each trading day of the Mandatory Notice Period, the Equity Conditions (as defined below) shall be satisfied; and (ii) the Daily VWAP of our Common Stock has remained at or above 100% of the exercise price during all trading days in the Mandatory Notice Period.

"Equity Conditions" means each of the following: (i) on each day of the Trigger Period and on each day of the Mandatory Notice Period, all warrants shares shall be eligible for resale by the holder without restriction and without need for additional registration under any applicable federal or state securities laws and we shall have no knowledge of any fact that would cause any warrant shares not to be so eligible for resale by the holder without restriction and without the need for additional registration under any applicable federal or state securities laws; (ii) on each day during the Trigger Period and the Mandatory Notice Period, our Common Stock is designated for listing on a Trading Market (as defined in the certificate of designations with respect to the Series E Preferred Stock) and shall not have been suspended from trading on such Trading Market nor shall delisting or suspension by such exchange or market have been threatened or pending in writing by such Trading Market nor shall there be any Securities and Exchange Commission or judicial stop trade order or trading suspension stop order; (iii) any warrant shares may be issued in full without violating the rules or regulations of the Trading Market or any applicable laws; (iv) on each day during the Trigger Period and the Mandatory Notice Period, there shall not have occurred and be continuing, unless waived by the holder, either (A) a Trigger Event (as defined in the certificate of designations with respect to the Series E Preferred Stock) or (B) an event that with the passage of time or giving of notice would constitute a Trigger Event; (v) on each day during the Trigger Period and the Mandatory Notice Period, we have not provided the holder with any non-public information; (vi) on each day during the Trigger Period and the Mandatory Notice Period, neither the registration statement, the prospectus supplement nor the prospectus applicable to the November 2010 Preferred Stock Offering contains any untrue statement of a material fact or omits to state a material fact necessary in order to make the statements made therein, in light of the circumstances under which they were made not misleading, and the prospectus supplement and the prospectus comply with all applicable securities laws as to form and substance, (vii) the transfer agent for our Common Stock is participating in the Depository Trust Company ("DTC") Fast Automated Securities Transfer Program; and (viii) all warrants shares are duly authorized and will be validly issued, fully paid and non-assessable upon issuance, free and clear of all liens, claims or encumbrances, and the issuance of the warrant shares will not require any further approvals of our Board of Directors or stockholders.

Certain Adjustments. The exercise price and the number of shares of Common Stock purchasable upon the exercise of the warrants are subject to adjustment upon the occurrence of specific events, including stock dividends, stock splits, combinations and reclassifications of our Common Stock. Additionally, the exercise price of the warrants is subject to certain weighted average adjustments if NeoStem issues or sells any additional shares of Common Stock or common stock equivalents at a price per share less than the exercise price then in effect, or without consideration, the exercise price then in effect will be adjusted. Notwithstanding the foregoing, there will be no adjustment to the exercise price with respect to the sale or issuance of certain Excluded Securities, as defined in the certificate of designations with respect to the Series E Preferred Stock. See "Series E 7%

Senior Convertible Preferred Stock - Optional Conversion by the Holders.” As of August 17, 2012, (i) the exercise price of the warrants had been adjusted to \$1.58, and (ii) the number of shares of Common Stock purchasable upon the exercise of the warrants had been adjusted (in the aggregate) to 1,747,188 shares of Common Stock.

Fractional Shares. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of the warrants. As to any fraction of a share which the holder would otherwise be entitled to purchase upon such exercise, we will, 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 or round up to the next whole share.

Exchange Listing. We do not plan on making an application to list the warrants on the NYSE MKT or any other national securities exchange or recognized trading system. Our Common Stock underlying the warrants is listed on the NYSE MKT.

The description of the warrants contained herein does not purport to be complete and is qualified in its entirety by reference to the form of warrant, which was filed as Exhibit 4.2 to our Current Report on Form 8-K filed with the SEC on November 16, 2010 in connection with our November 2010 Preferred Stock Offering.

PCT Merger Warrants

In connection with the closing of the PCT Merger on January 19, 2011 (and in addition to the Common Stock consideration for the PCT Merger which we deposited into an escrow account at such time), we issued seven-year warrants to purchase an aggregate 3,000,000 shares of our Common Stock (collectively, the “PCT Merger Warrants”). The PCT Merger Warrants were delivered in book entry form to the former members of PCT after receipt by us of an appropriate letter of transmittal from the respective former member. The PCT Merger Warrants are divided into three series as follows: (i) warrants to purchase an aggregate 1,000,000 shares of our Common Stock at an exercise price of \$3.00 per share (the “\$3.00 Warrants”); (ii) warrants to purchase an aggregate 1,000,000 shares of our Common Stock at an exercise price of \$5.00 per share (the “\$5.00 Warrants”); and (iii) warrants to purchase an aggregate 1,000,000 shares of our Common Stock at an exercise price of \$7.00 per share, and which will vest only if the \$7.00 Warrant Condition (as defined below) is accomplished within three years of the closing of the PCT Merger (the “\$7.00 Warrants”). The material terms and provisions of the PCT Merger Warrants are summarized below.

\$3.00 Warrants and \$5.00 Warrants

General. Each \$3.00 Warrant and \$5.00 Warrant entitles the holder to purchase one share of Common Stock at an exercise price per share of \$3.00 and \$5.00, respectively. The exercise price per share of each \$3.00 Warrant and \$5.00 Warrant is subject to adjustment upon the occurrence of certain events as provided in the applicable warrant certificate and summarized below. The \$3.00 Warrants and \$5.00 Warrants may be exercised at any time during their seven year term, unless redeemed. The \$3.00 Warrants and \$5.00 Warrants which have not been previously exercised will expire at the expiration date. Holders of the warrants will not be deemed to be a holder of the underlying Common Stock for any purpose until such warrant is exercised. As described below, the Warrants are redeemable in certain circumstances. Transfer of the shares issuable upon exercise of the Warrants had been restricted until the one year anniversary of the Closing Date.

Redemption. In the event Common Stock is trading at a per share price equal to or exceeding the redemption threshold of \$5.00 with respect to the \$3.00 Warrant or \$7.00 with respect to the \$5.00 Warrant for twenty (20) out of thirty (30) consecutive trading days, NeoStem has the option to call the applicable warrant. If the warrant holders have not exercised the warrants within 14 days of the redemption notice, NeoStem may redeem the warrants at \$0.001 per warrant. NeoStem will send the redemption notice by first class mail to warrant holders at their last known addresses appearing on the registration records maintained by the transfer agent of the warrants. No other form of notice by publication or otherwise will be required. If NeoStem calls any warrants for redemption, they will be exercisable until close of business on the business day next preceding the specified redemption date. Notwithstanding the foregoing, NeoStem may not redeem the Warrants unless (i) NeoStem waives the lock-up provisions in the applicable Warrant and (ii) the issuance of the shares underlying the Warrants is covered by an effective registration statement or there is an effective resale registration statement available to the holders of the Warrants with respect to the shares underlying the Warrants.

Adjustments of Exercise Price. The exercise price and redemption price of the warrants are subject to adjustment in specified circumstances, including in the event (i) there is a merger or consolidation and NeoStem is not the surviving corporation; (ii) there is subdivision, combination or reclassification of securities, recapitalization, automatic conversion, or other similar event affecting the number or character of outstanding shares of Common Stock; or (iii) NeoStem declares any stock dividend to stockholders or effects any split or reverse split with respect to the Common Stock after the issuance thereof. The warrants do not contain provisions protecting against dilution resulting from the sale of additional shares of Common Stock for less than the exercise price of the warrants or the current market price of the Common Stock.

No Voting and Dividend Rights. Until exercised, the holders of the warrants will have no voting, dividend or other stockholder rights.

Registration Rights. NeoStem has agreed to use its commercially reasonable efforts to maintain the effectiveness of a registration statement covering the shares underlying the Warrants at any time that both (a) the Warrants are exercisable and (b) the exercise price of the Warrants is less than 105% of the price at which the Common Stock is trading on the NYSE MKT (or, such other stock exchange on which the Common Stock trades). Under certain limited circumstances, if a registration statement is not effective or a prospectus supplement is not available during the last 20 business days prior to the expiration date of the Warrants, the exercise period of the Warrants would be extended for a period of 20 business days following such effectiveness or availability.

\$7.00 Warrants

General. Each \$7.00 Warrant entitles the holder to purchase one share of Common Stock at an exercise price per share of \$7.00. The exercise price per share of each \$7.00 Warrant is subject to adjustment upon the occurrence of certain events as provided in the \$7.00 Warrant certificate and summarized below. The \$7.00 Warrants may be exercised only if the \$7.00 Warrant Condition (as defined below) is satisfied and at any time thereafter during their seven year term, unless redeemed. The \$7.00 Warrants which have not been previously exercised will expire at the expiration date. A \$7.00 Warrant holder will not be deemed to be a holder of the underlying Common Stock for any purpose until the \$7.00 Warrant is exercised.

Performance Condition. The \$7.00 Warrant Condition is a performance condition that provides that the \$7.00 Warrants will not vest and will not become exercisable unless PCT secures, prior to the third annual anniversary of the Closing Date, one or more material binding commercial manufacturing contracts with one or more third parties, each on an arm's length basis, which commercial manufacturing contracts result in aggregate revenues to PCT in excess of \$5 million per year over a period of at least 3 years and in the reasonable judgment of NeoStem's Board of Directors the manufacturing contracts will be profitable each year during the term of such contracts in accordance with GAAP.

Redemption. In the event Common Stock is trading at a per share price equal to or exceeding the redemption threshold of \$9.00 for twenty (20) out of thirty (30) consecutive trading days, NeoStem has the option to call the \$7.00 Warrants. If the holders of \$7.00 Warrants have not exercised the \$7.00 Warrants within 14 days of the redemption notice, NeoStem may redeem the \$7.00 Warrants at \$0.001 per warrant. NeoStem will send the redemption notice by first class mail to \$7.00 Warrant holders at their last known addresses appearing on the registration records maintained by the transfer agent of the \$7.00 Warrants. No other form of notice by publication or otherwise will be required. If NeoStem calls any \$7.00 Warrants for redemption, they will be exercisable until close of business on the business day next preceding the specified redemption date. Notwithstanding the foregoing, NeoStem may not redeem the \$7.00 Warrants unless (i) NeoStem waives the lock-up provisions in the applicable Warrant, (ii) the issuance of the shares of Common Stock underlying the \$7.00 Warrants is covered by an effective registration statement or there is an effective resale registration statement available to the holders of the \$7.00 Warrants with respect to such shares and (iii) the \$7.00 Warrant Condition has been achieved or NeoStem waives the \$7.00 Warrant Condition concurrently with its provision of the redemption notice.

Adjustments of Exercise Price. The exercise price and redemption price of the \$7.00 Warrants are subject to adjustment in specified circumstances, including in the event (i) there is a merger or consolidation and NeoStem is not the surviving corporation; (ii) there is subdivision, combination or reclassification of securities, recapitalization, automatic conversion, or other similar event affecting the number or character of outstanding shares of Common Stock; or (iii) NeoStem declares any stock dividend to stockholders or effect any split or reverse split with respect to the Common Stock after the issuance thereof. The \$7.00 Warrants do not contain provisions protecting against dilution resulting from the sale of additional shares of Common Stock for less than the exercise price of the \$7.00 Warrants or the current market price of the Common Stock.

No Voting and Dividend Rights. Until exercised, the \$7.00 Warrants will have no voting, dividend or other stockholder rights.

Registration Rights. NeoStem has agreed to use its commercially reasonable efforts to maintain the effectiveness of a registration statement covering the shares underlying the Warrants at any time that both (a) the Warrants are exercisable and (b) the exercise price of the Warrants is less than 105% of the price at which the Common Stock is trading on the NYSE MKT (or, such other stock exchange on which the Common Stock trades). Under certain limited circumstances, if a registration statement is not effective or a prospectus supplement is not available during the last 20 business days prior to the expiration date of the Warrants, the exercise period of the Warrants would be extended for a period of 20 business days following such effectiveness or availability.

The above description of the PCT Merger Warrants does not purport to be complete and is qualified in its entirety by reference to the Warrant Agreement (with the forms of \$3.00 Warrant, \$5.00 Warrant and \$7.00 Warrant attached thereto), which was filed as Exhibit 4.1 to our Current Report on Form 8-K dated January 18, 2011 and filed with the SEC on January 24, 2011 in connection with the closing of the PCT Merger.

Series NA Warrants

Background. On July 22, 2011, we completed an underwritten offering of 13,750,000 units, with each unit consisting of one share of our Common Stock and a warrant to purchase 0.75 of a share of our Common Stock (each, a "Series NA Warrant"). The Series NA Warrants issued in connection with the July 2011 underwritten offering covered, in the aggregate, up to 10,312,500 shares of our Common Stock (with Series NA Warrants covering 10,012,500 shares of our Common Stock remaining outstanding as of August 17, 2012). The material terms and provisions of the Series NA Warrants are summarized below.

Warrant Agreement. Pursuant to the terms of the underwriting entered into in connection with the July 2011 offering, the Series NA Warrants may be issued through DTC and evidenced by a "Global Warrant" or may be delivered in physical or other appropriate form. The Series NA Warrants are governed by a warrant agreement (the "Warrant Agreement"), dated as of July 22, 2011, between us and Continental Stock Transfer & Trust Company, as our agent in respect of the Series NA Warrants. Book-entry form Series NA Warrants may be exercised by notifying a broker who is a DTC participant prior to the expiry of such warrants and providing payment of the exercise price for the number of shares of our Common Stock for which such warrants are being exercised. The following description of the terms of the Warrant Agreement is subject to the detailed provisions of such Warrant Agreement, the form of which is filed as Exhibit 2.1 to our Current Report on Form 8-K dated July 19, 2011.

Term; Exercise Price and Exercisability. Series NA Warrants representing the rights to purchase up to an aggregate of 10,012,500 shares of our Common Stock remain outstanding as of August 17, 2012. Each warrant has an exercise price of \$1.45 per share, was immediately exercisable upon issuance, and will expire on July 18, 2016. The number of warrant shares that may be acquired by any holder upon any exercise of the warrant will be limited to the extent necessary to insure that, following such exercise (or other issuance), the total number of shares of our Common Stock then beneficially owned by such holder and its affiliates and any other persons whose beneficial ownership of our Common Stock would be aggregated with the holder's for purposes of Section 13(d) of the Securities Exchange Act of 1934, as amended, does not exceed 4.99% of the total number of issued and outstanding shares of our Common Stock (including for such purpose the shares of our Common Stock issuable upon such exercise), or beneficial ownership limitation. The holder may elect to change this beneficial ownership limitation from 4.99% to 9.99% of the total number of issued and outstanding shares of our Common Stock (including for such purpose the shares of our Common Stock issuable upon such exercise) upon providing us with not less than 61 days' prior written notice.

Manner of Exercise. Holders of the Series NA Warrants may exercise their Series NA Warrants to purchase shares of our Common Stock on or before the expiration date by delivering (i) notice of exercise, appropriately completed and duly signed, and (ii) if such holder is not utilizing the cashless exercise provisions with respect to the warrants, payment of the exercise price by wire transfer or cashier's check drawn on a United States bank, for the number of shares with respect to which the warrant is being exercised. Series NA Warrants may be exercised in whole or in part, but only for full shares of our Common Stock. We provide certain buy-in rights to a holder if we fail to deliver the shares of our Common Stock underlying the Series NA Warrants by the second trading day after the date on which delivery of the stock certificate is required by the Series NA Warrant. The buy-in rights apply if after the second trading day on which delivery of the stock is required by the Series NA Warrant, the holder purchases (in an open market transaction or otherwise) shares of our Common Stock to deliver in satisfaction of a sale by the holder of the warrant shares that the holder anticipated receiving from us upon exercise of the Series NA Warrant. In such event, we will:

- pay in cash to the holder the amount equal to the excess (if any) of the buy-in price (including brokerage commissions, if any) over the product of (A) the number of warrant shares that we were required to deliver to the holder in connection with the exercise at issue, times (B) the price at which the sell order giving rise to holder's purchase obligation was executed; and
- at the election of holder, either (A) reinstate the portion of the Series NA Warrant as to such number of shares of our Common Stock for which such exercise was not honored, or (B) deliver to the holder such number of shares of our Common Stock that would have been exercised had we timely complied with our exercise and delivery obligations.

If the holder of a Series NA Warrant desires to exercise its warrant and sell the shares issuable upon exercise of its warrant and there is no effective registration statement registering, or no current prospectus available for, the issuance or resale of the shares of our Common Stock underlying such warrants, in lieu of exercising its warrant by payment of a wire transfer or cashier's check, the holder may elect to receive shares equal to the value of such holder's warrant by surrender of the warrant to us, together with a properly endorsed notice of exercise. The number of shares to be issued would be determined by a formula based on the total number of shares with respect to which the warrant is being exercised, the volume weighted average price for the shares of our Common Stock on the trading day immediately prior to the date of exercise and the applicable exercise price of the Series NA Warrants.

The shares of our Common Stock issuable on exercise of the Series NA warrants will be, when issued and paid for in accordance with the Series NA Warrants, duly authorized, validly issued and fully paid and non-assessable. We have authorized and reserved at least that number of shares of our Common Stock equal to the number of shares of our Common Stock issuable upon exercise of all outstanding Series NA Warrants.

Fundamental Transaction. If, at any time while the Series NA Warrants are outstanding, (1) we consolidate or merge with or into another corporation, (2) we sell, lease, license, assign, transfer, convey or otherwise dispose of all or substantially all of our assets, (3) any purchase offer, tender offer or exchange offer (whether by us or another individual or entity) is completed pursuant to which holders of our Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of our outstanding Common Stock or (4) we effect any reclassification or recapitalization of our Common Stock or any compulsory share exchange pursuant to which our Common Stock is converted into or exchanged for other securities, cash or property (or the occurrence of any analogous proceeding) affecting us (each, a "Fundamental Transaction"), then upon any subsequent exercise of the Series NA Warrants, the holders thereof will have the right to receive the same amount and kind of securities, as they would have been entitled to receive upon the occurrence of such Fundamental Transaction if they had been, immediately prior to such Fundamental Transaction, the holder of the number of warrant shares then issuable upon exercise of the Series NA Warrant, and any additional consideration payable as part of the Fundamental Transaction; *provided, however*, that in the event of a change of control transaction (as defined in the warrant) other than one in which the successor entity is a publicly traded corporation whose stock is listed or quoted for trading on the New York Stock Exchange, NASDAQ markets or the NYSE MKT and results in the Series NA Warrants being exercisable for publicly traded common stock of such successor entity, at the request of a holder of a warrant delivered before the 90th calendar day after consummation of such change of control transaction, we (or the successor entity) will purchase the warrant by paying to the holder, cash in an amount equal to the Black Scholes value, as described in the warrant, of the remaining unexercised portion of the warrant on the date of consummation of such change of control transaction.

Certain Adjustments. The exercise price and the number of shares of our Common Stock purchasable upon the exercise of the Series NA Warrants are subject to adjustment upon the occurrence of specific events, including stock dividends (excluding payments in respect of our Series E Preferred Stock), stock splits, combinations and reclassifications of our Common Stock. Additionally, the exercise price of the Series NA Warrants is subject to certain adjustments if we (i) issue rights, options or warrants to all holders of our Common Stock (and not to the warrant holder) entitling them to subscribe for or purchase shares of our Common Stock at a price per share less than the volume weighted average price (the "VWAP") of our Common Stock on the record date for the determination of stockholders entitled to receive such rights, options or warrants, or (ii) distribute to all holders of our Common Stock (and not to the warrant holder) evidences of our indebtedness or assets (including cash and cash dividends) or rights or warrants to purchase any security.

Delivery of Certificates. Upon the holder's exercise of a Series NA Warrant, we will promptly, but in no event later than three business days after the exercise date (referred to as the "warrant share delivery date"), issue and deliver, or cause to be issued and delivered, a certificate for the shares of our Common Stock issuable upon exercise of the Series NA Warrant. In addition, we will, if the holder provides the necessary information to us, issue and deliver the shares electronically through The Depository Trust Corporation through its Deposit Withdrawal Agent Commission System (DWAC) or another established clearing corporation performing similar functions.

Notice of Corporate Action. We will provide prior notice to holders of the Series NA Warrants in advance of certain record or effective dates (as specified below) in connection with the following corporate events, to provide the holders of the Series NA Warrants with the opportunity to exercise their warrants and hold our Common Stock:

- if we declare a dividend (or any other distribution in whatever form) on our Common Stock;
- if we declare a special nonrecurring cash dividend on or a redemption of our Common Stock;

- if we authorize the granting to all holders of our Common Stock rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any rights;
- if the approval of any of our stockholders shall be required in connection with any reclassification of our Common Stock, any consolidation or merger to which we are a party, any sale or transfer of all or substantially all of our assets, or any compulsory share exchange whereby our Common Stock is converted into other securities, cash or property; or
- if we authorize the voluntary or involuntary liquidation or winding up of the affairs of our Company, then, in each case, we will mail to the holders of the Series NA Warrants a notice stating:
- the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of our Common Stock of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined, or
- the date on which such reclassification, consolidation, merger, sale, transfer or share exchange is expected to become effective or close, and the date as of which it is expected that holders of record of our Common Stock will be entitled to exchange their shares of Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or share exchange.

Subject to applicable law, the holder will be provided a reasonable opportunity (which shall be not less than eight (8) calendar days notice) to exercise the Series NA Warrant prior to the effective date of the event triggering such notice. No holders of the Series NA Warrants will possess any rights as a stockholder under those warrants until the holder exercises those warrants.

Transferability. The Series NA Warrants may be transferred independent of the Common Stock they were issued with, on a form of assignment, subject to all applicable laws.

Fractional Shares. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of the Series NA Warrants. As to any fraction of a share which the holder would otherwise be entitled to purchase upon such exercise, we will, 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 or round up to the next whole share.

Exchange Listing. We do not plan on making an application to list the Series NA Warrants on the NYSE MKT or any other national securities exchange or recognized trading system. Our Common Stock underlying the Series NA Warrants is listed on the NYSE MKT.

The description of the Series NA Warrants contained herein does not purport to be complete and is qualified in its entirety by reference to the Warrant Agreement and the Form of Warrant Certificate, which are filed as Exhibit 4.1 to our Current Report on Form 8-K dated July 19, 2011.

Series AMO Warrants

General. Upon closing the Amorcyte Merger on October 17, 2011, as a portion of the merger consideration we issued Series AMO Warrants to purchase an aggregate of 1,881,008 shares of our Common Stock (the "Series AMO Warrants"). The Series AMO Warrants are evidenced by a "Global Warrant" and were delivered in book entry form to the former stockholders of Amorcyte. Each Series AMO Warrant entitles the holder to purchase one share of our Common Stock at an exercise price of \$1.466 per share. The exercise price per share of each Warrant will be subject to adjustment upon the occurrence of certain events as provided in the form of global warrant certificate and summarized below. The Series AMO Warrants may be exercised at any time during their seven year term, unless redeemed; provided, however, that transfer of any shares of our Common Stock issuable upon exercise of the Series AMO Warrants is restricted until the one year anniversary of the closing date of the Amorcyte Merger. The Series AMO Warrants which have not been previously exercised will expire at the expiration date. A Series AMO Warrant holder will not be deemed to be a holder of the underlying Common Stock for any purpose until the Series AMO Warrant is exercised.

Redemption. In the event our Common Stock is trading at a per share price equal to or exceeding the redemption threshold of \$3.466 per share for twenty (20) out of thirty (30) consecutive trading days, we have the option to call the Series AMO

Warrants. If the holders of Series AMO Warrants have not exercised their warrants within 14 days of the redemption notice, we may redeem the Series AMO Warrants at \$0.0001 per warrant. We will send the redemption notice by first class mail to Series AMO Warrant holders at their last known addresses appearing on the registration records maintained by the transfer agent of the Series AMO Warrants. No other form of notice by publication or otherwise will be required. If we call any Series AMO Warrants for redemption, they will be exercisable until close of business on the business day next preceding the specified redemption date.

Adjustments of Exercise Price. The exercise price and redemption price of the Series AMO Warrants is subject to adjustment in specified circumstances, including in the event (i) there is a merger or consolidation and we are not the surviving corporation; (ii) there is subdivision, combination or reclassification of securities, recapitalization, automatic conversion, or other similar event affecting the number or character of outstanding shares of our Common Stock; or (iii) we declare any stock dividend to stockholders or effect any split or reverse split with respect to our Common Stock. The Series AMO Warrants do not contain provisions protecting against dilution resulting from the sale of additional shares of our Common Stock for less than the exercise price of the Series AMO Warrants or the current market price of our Common Stock.

No Voting and Dividend Rights. Until exercised, the Series AMO Warrants have no voting, dividend or other stockholder rights.

Registration Rights. We shall use commercially reasonable efforts to maintain the effectiveness of the Registration Statement on Form S-4 which covers the shares of our Common Stock underlying the Series AMO Warrants or file and maintain the effectiveness of another registration statement covering the shares of our Common Stock issuable upon exercise of the Series AMO Warrants at any time that both (a) the Series AMO Warrants are exercisable and (b) the exercise price of the Series AMO Warrants is less than 105% of the price at which our Common Stock is trading on the NYSE MKT (or if our Common Stock is no longer trading on the NYSE MKT, such other stock exchange on which such shares trade). In no event will any holder of a Series AMO Warrant be entitled to receive a "net cash settlement" in lieu of physical settlement in shares of our Common Stock regardless of whether we comply with our obligation described in the preceding sentence.

The description of the Series AMO Warrants contained herein does not purport to be complete and is qualified in its entirety by reference to the Warrant Agreement and the Form of Global Series AMO Warrant attached thereto, which is filed as Exhibit 4.1 to our Current Report on Form 8-K dated October 17, 2011.

Warrants Issued in Our March 2012 Underwritten Offering

In connection with a public offering of our Common Stock and certain warrants which closed as to 15,000,000 units on March 30, 2012 (and which closed with respect to an exercise of the underwriter's over-allotment option to the extent of an additional 2,000,000 units on April 4, 2012) (the "March 2012 Underwritten Offering"), we issued warrants to purchase up to an aggregate of 17,000,000 shares of our Common Stock. The material terms and provisions of the warrants issued in connection with our March 2012 Underwritten Offering are summarized below.

Term; Exercise Price and Exercisability. The warrants issued in our March 2012 Underwritten Offering provided for the purchase of up to 17,000,000 shares of our Common Stock in the aggregate (with 13,919,656 of such warrants remaining outstanding as of August 17, 2012). Each warrant has an exercise price of \$0.51 per share, became exercisable in April 2012 (the Company having waived the six-month waiting period to exercise the warrants), and will expire five years from the date of issuance. The number of warrant shares that may be acquired by any holder upon any exercise of the warrant will be limited to the extent necessary to insure that, following such exercise (or other issuance), the total number of shares of Common Stock then beneficially owned by such holder and its affiliates and any other persons whose beneficial ownership of Common Stock would be aggregated with the holder's for purposes of Section 13(d) of the Securities Exchange Act of 1934, as amended, does not exceed 4.99% of the total number of issued and outstanding shares of Common Stock (including for such purpose the shares of Common Stock issuable upon such exercise), or beneficial ownership limitation. The holder may elect to change this beneficial ownership limitation from 4.99% to 9.99% of the total number of issued and outstanding shares of Common Stock (including for such purpose the shares of Common Stock issuable upon such exercise) upon providing us with not less than 61 days' prior written notice.

Manner of Exercise. Holders of the warrants may exercise their warrants to purchase shares of our Common Stock at any time on or after the Initial Exercise Date and on or before the expiration date by delivering (i) notice of exercise, appropriately completed and duly signed, and (ii) payment of the exercise price by wire transfer or cashier's check drawn on a United States bank, for the number of shares with respect to which the warrant is being exercised. Warrants may be exercised in whole or in part, but only for full shares of Common Stock. We provide certain buy-in rights to a holder if we fail to deliver the shares of Common Stock underlying the warrants by the date on which delivery of the warrant shares is required by the warrant. The

buy-in rights apply if after the day on which delivery of the warrant shares is required by the warrant, the holder purchases (in an open market transaction or otherwise) shares of our Common Stock to deliver in satisfaction of a sale by the holder of the warrant shares that the holder anticipated receiving from us upon exercise of the warrant. In such event, we will:

- pay in cash to the holder the amount equal to the excess (if any) of the buy-in price (including brokerage commissions, if any) over the product of (A) the number of warrant shares that we were required to deliver to the holder in connection with the exercise at issue, times (B) the price at which the sell order giving rise to holder's purchase obligation was executed; and
- at the election of holder, either (A) reinstate the portion of the warrant as to such number of shares of Common Stock for which such exercise was not honored, or (B) deliver to the holder such number of shares of Common Stock that would have been issued had we timely complied with our exercise and delivery obligations.

If the holder of a warrant desires to exercise its warrant and there is no effective registration statement registering, or no current prospectus available for, the issuance of the shares of Common Stock underlying the warrants, in lieu of exercising its warrant by payment of a wire transfer or cashier's check, the holder may elect to receive shares equal to the value of such holder's warrant by surrender of the warrant to us, together with a properly endorsed notice of exercise. The number of shares to be issued would be determined by a formula based on the total number of shares with respect to which the warrant is being exercised, the volume weighted average price for the shares of our Common Stock on the trading day immediately prior to the date of exercise and the applicable exercise price of the warrants.

The shares of Common Stock issuable on exercise of the warrants will be, when issued and paid for in accordance with the warrants, duly authorized, validly issued and fully paid and non-assessable. We will authorize and reserve at least that number of shares of Common Stock equal to the number of shares of Common Stock issuable upon exercise of all outstanding warrants.

Call Provision. Subject to certain exceptions, while the warrants are outstanding and following the Initial Exercise Date, if the volume weighted average price of a share of our Common Stock for each of 10 consecutive Trading Days (the "Measurement Period," which 10 consecutive Trading Day period shall not have commenced until after the Initial Exercise Date) exceeds \$1.53 (subject to adjustment), then we may, within 1 Trading Day of the end of such Measurement Period, upon notice, call for cancellation of all or any portion of the warrants (a "Call") for consideration equal to \$0.001 per Share. Our right to Call the warrants shall be exercised ratably among the holders based on each holder's initial purchase of warrants from us.

Fundamental Transaction. If, at any time while the warrants are outstanding, (1) we consolidate or merge with or into another corporation, (2) we sell, lease, license, assign, transfer, convey or otherwise dispose of all or substantially all of our assets for consideration which is distributed to the holders of all our Common Stock, (3) any purchase offer, tender offer or exchange offer (whether by us or another individual or entity) is completed pursuant to which holders of our Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of our outstanding Common Stock, (4) we effect any reclassification or recapitalization of our Common Stock or any compulsory share exchange pursuant to which our Common Stock is converted into or exchanged for other securities, cash or property or (5) we consummate a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off or scheme of arrangement) with another individual, entity or group whereby such other individual, entity or group acquires more than 50% of our outstanding stock (or the occurrence of any analogous proceeding) affecting our company (each, a "Fundamental Transaction"), then upon any subsequent exercise of the warrants, the holders thereof will have the right to receive the same amount and kind of securities, as it would have been entitled to receive upon the occurrence of such Fundamental Transaction if it had been, immediately prior to such Fundamental Transaction, the holder of the number of warrant shares then issuable upon exercise of the warrant, and any additional consideration payable as part of the Fundamental Transaction; *provided, however*, that in the event of a Fundamental Transaction that is (1) an all cash transaction, (2) a "Rule 13e-3 transaction" as defined in Rule 13e-3 under the Exchange Act, or (3) a Fundamental Transaction (other than as described solely in clause (5) above) involving a person or entity not traded on a national securities exchange, including, but not limited to, the New York Stock Exchange, the NYSE MKT, the Nasdaq Global Select Market, the Nasdaq Global Market, or the Nasdaq Capital Market, we or any Successor Entity (as defined below) shall, at the holder's option, exercisable at any time concurrently with, or within 30 days after, the consummation of the Fundamental Transaction, purchase the warrant from the holder by paying to the holder an amount of cash equal to the Black Scholes Value (as defined in the warrant) of the remaining unexercised portion of the warrant on the date of the consummation of such Fundamental Transaction, and we shall cause any successor entity in a Fundamental Transaction in which we are not the survivor (the "Successor Entity") to assume in writing all of our obligations under the warrant prior to such Fundamental Transaction and shall, at the option of the holder, deliver to the holder in exchange for the warrant a security of the Successor

Entity evidenced by a written instrument substantially similar in form and substance to the warrants which is exercisable for a corresponding number of shares of capital stock of such Successor Entity (or its parent entity) equivalent to the shares of Common Stock acquirable and receivable upon exercise of the warrants (without regard to any limitations on the exercise of the warrant) prior to such Fundamental Transaction, and with an exercise price which applies the exercise price under the warrant to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such exercise price being for the purpose of protecting the economic value of the warrant immediately prior to the consummation of such Fundamental Transaction), and which is reasonably satisfactory in form and substance to the holder.

Certain Adjustments. The exercise price and the number of shares of Common Stock purchasable upon the exercise of the warrants are subject to adjustment upon the occurrence of specific events, including stock dividends, stock splits, combinations and reclassifications of our Common Stock. Additionally, the exercise price of the warrants issued to the investors is subject to certain adjustments if we (i) issue rights, options or warrants to all holders of Common Stock (and not to the warrant holder) entitling them to subscribe for or purchase shares of Common Stock at a price per share less than the volume weighted average price (the "VWAP") of the Common Stock on the record date for the determination of stockholders entitled to receive such rights, options or warrants, or (ii) distribute to all holders of Common Stock (and not to the warrant holder) evidences of our indebtedness or assets (including cash and cash dividends) or rights or warrants to purchase any security.

Delivery of Warrant Shares. Upon the holder's exercise of a warrant, we will promptly, but in no event later than three business days after the exercise date (referred to as the "exercise share delivery date"), issue and deliver, or cause to be issued and delivered, the shares of Common Stock issuable upon exercise of the warrant. If the holder provides the necessary information to us, we will issue and deliver the shares electronically through The Depository Trust Corporation through its Deposit Withdrawal Agent Commission System (DWAC) or another established clearing corporation performing similar functions.

Notice of Corporate Action. We will provide prior notice to holders of the warrants in advance of certain record or effective dates (as specified below) in connection with the following corporate events, to provide the holders of the warrants with the opportunity to exercise their warrants and hold Common Stock:

- if we declare a dividend (or any other distribution in whatever form) on our Common Stock;
- if we declare a special nonrecurring cash dividend on or a redemption of Common Stock;
- if we authorize the granting to all holders of our Common Stock rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any rights;
- if the approval of any of our stockholders shall be required in connection with any reclassification of our Common Stock, any consolidation or merger to which our Company is a party, any sale or transfer of all or substantially all of our assets, or any compulsory share exchange whereby our Common Stock is converted into other securities, cash or property; or
- if we authorize the voluntary or involuntary liquidation or winding up of the affairs of the Company,

then, in each case, we will mail to the holders of the warrants a notice stating:

- the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of our Common Stock of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined, or
- the date on which such reclassification, consolidation, merger, sale, transfer or share exchange is expected to become effective or close, and the date as of which it is expected that holders of record of our Common Stock will be entitled to exchange their shares of Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or share exchange.

Subject to applicable law, the holder will be provided a reasonable opportunity to exercise the warrant prior to the effective date of the event triggering such notice. No holders of the warrants will possess any rights as a stockholder under those warrants until the holder exercises those warrants.

Transferability. The warrants may be transferred independent of the Common Stock they were issued with, on a form of assignment, subject to all applicable laws.

Fractional Shares. No fractional shares or scrip representing fractional shares shall be issued upon the exercise of the warrants. As to any fraction of a share which the holder would otherwise be entitled to purchase upon such exercise, we will, 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 or round up to the next whole share.

Exchange Listing. We do not plan on making an application to list the warrants on the NYSE MKT or any other national securities exchange or recognized trading system. The Common Stock underlying the warrants is listed on the NYSE MKT.

The above description of the warrants issued in our March 2012 Underwritten Offering does not purport to be complete and is qualified in its entirety by reference to the form of warrant, which was filed as Exhibit 4.1 to our Current Report on Form 8-K filed with the SEC on March 29, 2012 in connection with the March 2012 Underwritten Offering.

Warrants Issued in Connection With Our May-July 2012 Private Placement

May-July 2012 Private Placement Warrants. In closings occurring from May through August 2012, we issued in a private placement an aggregate of 5,345,834 units, with each unit consisting of (i) one share of our Common Stock and (ii) a warrant to purchase one share of our Common Stock at an exercise price of \$.51 per share, exercisable during the five-year period following the date of issuance (our board of directors having waived the six month waiting period provided for in the form of warrant) (each, a “May-July 2012 Private Placement Warrant”). As of August 17, 2012, May-July 2012 Private Placement Warrants covering an aggregate of 2,537,694 shares of our Common Stock remained outstanding. In the event the average closing price of our Common Stock equals or exceeds \$1.00 per share for 20 out of 30 consecutive trading days, we have the option to call the May-July 2012 Private Placement Warrants by mailing a notice to the registered holders thereof at least 10 business days prior to the date fixed by us for redemption (the “Redemption Date”). Any May-July 2012 Private Placement Warrants not exercised by 5:00 p.m. on the business day immediately preceding the Redemption Date shall terminate, with the holder of such terminated warrants having no further rights except to receive, upon surrender of the warrants, the redemption price of \$.0001 per warrant.

July 2012 New Warrants. In July 2012, an aggregate of 2,808,140 of the May-July 2012 Private Placement Warrants were exercised, and in consideration for such exercises, we issued to each exercising holder a new five-year warrant (each, a “July 2012 New Warrant”) to purchase the identical number of shares of our Common Stock as had been covered by such portion of the old May-July 2012 Private Placement Warrant as had been exercised. Each July 2012 New Warrant is exercisable for five years and is subject to substantially the same terms as the old May-July 2012 Private Placement Warrants that were exercised, except that the per share exercise price of each July 2012 New Warrant is between \$.66 and \$.69, the closing price of our Common Stock on the date the old May-July 2012 Private Placement Warrant was exercised. We have issued July 2012 New Warrants covering an aggregate of 2,808,140 shares of our Common Stock.

Warrants Issued in Connection With Our August 2012 Private Placement

In an August 2012 private placement, we issued an aggregate of 2,954,385 units, with each Unit consisting of (a) one share of common stock and (b) a warrant (each, an “August 2012 Private Placement Warrant”) to purchase one share of Common Stock at an exercise price equal to the greater of (i) \$.70 or (ii) a penny above the closing price of our Common stock on the date the subscription agreement was executed, expiring five years from the date of issuance and are exercisable immediately upon issuance.

Anti-Takeover Effects of Certain Provisions of Delaware Law and Our Certificate of Incorporation and Bylaws

Our Amended and Restated Certificate of Incorporation and bylaws contain some provisions that could make our acquisition by means of a tender or exchange offer, a proxy contest or otherwise more difficult. These provisions are summarized below.

Special Meetings. Our bylaws provide that special meetings of our stockholders may, unless otherwise prescribed by law, be called by our Chairman of the Board (if any), our Board of Directors or our Chief Executive Officer and shall be held at such place, on such date and at such time as shall be fixed by our Board of Directors or the person calling the meeting. Business transacted at any special meeting shall be limited to matters relating to the purpose or purposes stated in the notice of the meeting.

Undesignated Preferred Stock. The ability to authorize undesignated preferred stock makes it possible for our Board of

Directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to acquire us. The ability to issue preferred stock may have the effect of deferring hostile takeovers or delaying changes in control or management of our company.

Delaware Anti-Takeover Statute. We are subject to the provisions of Section 203 of the Delaware General Corporation Law regulating corporate takeovers. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a business combination with an interested stockholder for a period of three years following the date the person became an interested stockholder unless:

- prior to the date of the transaction, the board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
- upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the 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 number of shares outstanding (1) shares owned by persons who are directors and also officers and (2) shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; and
- on or subsequent to the date of the transaction, the business combination is approved by the board and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock which is not owned by the interested stockholder.

Generally, a business combination includes 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, within three years prior to the determination of interested stockholder status, owned 15% or more of a corporation's outstanding voting securities. We expect the existence of this provision to have an anti-takeover effect with respect to transactions our Board of Directors does not approve in advance. We also anticipate that Section 203 may discourage attempted acquisitions that might result in a premium over the market price for the shares of our Common Stock held by stockholders.

The provisions of Delaware law, our Amended and Restated Certificate of Incorporation and our bylaws could have the effect of discouraging others from attempting hostile takeovers and, as a consequence, they may also inhibit temporary fluctuations in the market price of our Common Stock that often result from actual or rumored hostile takeover attempts. These provisions may 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 may otherwise deem to be in their best interests.

Potential Effects of Authorized but Unissued Stock

We have shares of Common Stock and preferred stock available for future issuance without stockholder approval. We may utilize these additional shares for a variety of corporate purposes, including future public offerings to raise additional capital, to facilitate corporate acquisitions or payment as a dividend on the capital stock.

The existence of unissued and unreserved Common Stock and preferred stock may enable our Board of Directors to issue shares to persons friendly to current management or to issue preferred stock with terms that could render more difficult or discourage a third-party attempt to obtain control of us by means of a merger, tender offer, proxy contest or otherwise, thereby protecting the continuity of our management. In addition, the Board of Directors has the discretion to determine designations, rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences of each series of preferred stock, all to the fullest extent permissible under the Delaware General Corporation Law and subject to any limitations set forth in our certificate of incorporation. The purpose of authorizing the Board of Directors to issue preferred stock and to determine the rights and preferences applicable to such preferred stock is to eliminate delays associated with a stockholder vote on specific issuances. The issuance of preferred stock, while providing desirable flexibility in connection with possible financings, acquisitions and other corporate purposes, could have the effect of making it more difficult for a third party to acquire, or could discourage a third party from acquiring, a majority of our outstanding voting stock.

Limitations of Director Liability and Indemnification of Directors, Officers and Employees

Section 145 of the Delaware General Corporation Law, permits indemnification of directors, officers, agents and controlling persons of a corporation under certain conditions and subject to certain limitations. Section 145 empowers a corporation to

indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding whether civil, criminal, administrative or investigative, by reason of the fact that he or she is or was a director, officer or agent of the corporation or another enterprise if serving at the request of the corporation. Depending on the character of the proceeding, a corporation may indemnify against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding if the person indemnified acted in good faith and in a manner he or she reasonably believed to be in or not opposed to, the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful. In the case of an action by or in the right of the corporation, no indemnification may be made with respect to any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine that despite the adjudication of liability such person is fairly and reasonably entitled to indemnity for such expenses which the court shall deem proper. Section 145 further provides that to the extent a present or former director or officer of a corporation has been successful in the defense of any action, suit or proceeding referred to above or in the defense of any claim, issue or matter therein, such person shall be indemnified against expenses (including attorneys' fees) actually and reasonably incurred by such person in connection therewith.

Indemnification Agreements

We have entered into indemnification agreements with each of our Chief Executive Officer, Chief Financial Officer, General Counsel, certain other employees and each of our directors pursuant to which we have agreed to indemnify such party to the full extent permitted by law, subject to certain exceptions, if such party becomes subject to an action because such party is our director, officer, employee, agent or fiduciary.

Transfer Agent

The transfer agent and registrar for our Common Stock is Continental Stock Transfer & Trust Company. Its address is 17 Battery Place, New York, New York, 10004 and its telephone number is (212) 509-4000.

NYSE MKT Listing

Our Common Stock is traded on the NYSE MKT under the symbol "NBS."

DESCRIPTION OF DEBT SECURITIES

We summarize below some of the provisions that will apply to the debt securities unless the applicable prospectus supplement provides otherwise. This summary may not contain all information that is important to you. The complete terms of the debt securities will be contained in the applicable notes. The notes will be included or incorporated by reference as exhibits to the registration statement of which this prospectus is a part. You should read the provisions of the notes. You should also read the prospectus supplement, which will contain additional information and which may update or change some of the information below.

General

This prospectus describes certain general terms and provisions of the debt securities. The debt securities will be issued under an indenture between us and a trustee to be designated prior to the issuance of the debt securities. When we offer to sell a particular series of debt securities, we will describe the specific terms of the securities in a supplement to this prospectus. The prospectus supplement will also indicate whether the general terms and provisions described in this prospectus apply to a particular series of debt securities.

We may issue, from time to time, debt securities, in one or more series, that will consist of either our senior debt ("senior debt securities"), our senior subordinated debt ("senior subordinated debt securities"), our subordinated debt ("subordinated debt securities") or our junior subordinated debt ("junior subordinated debt securities" and, together with the senior subordinated debt securities and the subordinated debt securities, the "subordinated securities"). Debt securities, whether senior, senior subordinated, subordinated or junior subordinated, may be issued as convertible debt securities or exchangeable debt securities.

We have summarized herein certain terms and provisions of the form of indenture (the "indenture"). The summary is not complete and is qualified in its entirety by reference to the actual text of the indenture. The indenture is an exhibit to the registration statement of which this prospectus is a part. You should read the indenture for the provisions which may be

important to you. The indenture is subject to and governed by the Trust Indenture Act of 1939, as amended.

The indenture does not limit the amount of debt securities which we may issue. We may issue debt securities up to an aggregate principal amount as we may authorize from time to time which securities may be in any currency or currency unit designated by us. The terms of each series of debt securities will be established by or pursuant to (a) a supplemental indenture, (b) a resolution of our board of directors, or (c) an officers' certificate pursuant to authority granted under a resolution of our board of directors. The prospectus supplement will describe the terms of any debt securities being offered, including:

- the title of the debt securities;
- the limit, if any, upon the aggregate principal amount or issue price of the debt securities of a series;
- ranking of the specific series of debt securities relative to other outstanding indebtedness, including any debt of any of our subsidiaries;
- the price or prices at which the debt securities will be issued;
- the designation, aggregate principal amount and authorized denominations of the series of debt securities;
- the issue date or dates of the series and the maturity date of the series;
- whether the securities will be issued at par or at a premium over or a discount from their face amount;
- the interest rate, if any, and the method for calculating the interest rate and basis upon which interest shall be calculated;
- the right, if any, to extend interest payment periods and the duration of the extension;
- the interest payment dates and the record dates for the interest payments;
- any mandatory or optional redemption terms or prepayment, conversion, sinking fund or exchangeability or convertibility provisions;
- the currency of denomination of the securities;
- the place where we will pay principal, premium, if any, and interest, if any, and the place where the debt securities may be presented for transfer;
- if payments of principal of, premium, if any, or interest, if any, on the debt securities will be made in one or more currencies or currency units other than that or those in which the debt securities are denominated, the manner in which the exchange rate with respect to these payments will be determined;

- if other than denominations of \$1,000 or multiples of \$1,000, the denominations the debt securities will be issued in;
- whether the debt securities will be issued in the form of global securities or certificates;
- the applicability of and additional provisions, if any, relating to the defeasance of the debt securities;
- the portion of principal amount of the debt securities payable upon declaration of acceleration of the maturity date, if other than the entire principal amount;
- the currency or currencies, if other than the currency of the United States, in which principal and interest will be paid;
- the dates on which premium, if any, will be paid;
- any addition to or change in the “Events of Default” described in this prospectus or in the indenture with respect to the debt securities and any change in the acceleration provisions described in this prospectus or in the indenture with respect to the debt securities;
- any addition to or change in the covenants described in the prospectus or in the indenture with respect to the debt securities;
- our right, if any, to defer payment of interest and the maximum length of this deferral period; and
- other specific terms, including any additional events of default or covenants.

We may issue debt securities at a discount below their stated principal amount. Even if we do not issue the debt securities below their stated principal amount, for United States federal income tax purposes the debt securities may be deemed to have been issued with a discount because of certain interest payment characteristics. We will describe in any applicable prospectus supplement the United States federal income tax considerations applicable to debt securities issued at a discount or deemed to be issued at a discount, and will describe any special United States federal income tax considerations that may be applicable to the particular debt securities.

Senior Debt

Senior debt securities will rank equally and *pari passu* with all of our other unsecured and unsubordinated debt from time to time outstanding.

Subordinated Debt

The indenture does not limit our ability to issue subordinated debt securities. Any subordination provisions of a particular series of debt securities will be set forth in the supplemental indenture, board resolution or officers' certificate related to that series of debt securities and will be described in the relevant prospectus supplement.

If this prospectus is being delivered in connection with a series of subordinated debt securities, the accompanying

prospectus supplement or the information incorporated by reference in this prospectus will set forth the approximate amount of senior indebtedness outstanding as of the end of the most recent fiscal quarter.

Conversion or Exchange Rights

Debt securities may be convertible into or exchangeable for our other securities or property. The terms and conditions of conversion or exchange will be set forth in the supplemental indenture, board resolution or officers' certificate related to that series of debt securities and will be described in the relevant prospectus supplement. The terms will include, among others, the following:

- the conversion or exchange price;
- the conversion or exchange period;
- provisions regarding our ability or the ability of the holder to convert or exchange the debt securities;
- events requiring adjustment to the conversion or exchange price; and
- provisions affecting conversion or exchange in the event of our redemption of the debt securities.

Merger, Consolidation or Sale of Assets

The indenture prohibits us from merging into or consolidating with any other person or selling, leasing or conveying substantially all of our assets and the assets of our subsidiaries, taken as a whole, to any person, unless:

- either we are the continuing corporation or the successor corporation or the person which acquires by sale, lease or conveyance substantially all our or our subsidiaries' assets is a corporation organized under the laws of the United States, any state thereof, or the District of Columbia, and expressly assumes the due and punctual payment of the principal of, and premium, if any, and interest, if any, on all the debt securities and the due performance of every covenant of the indenture to be performed or observed by us, by supplemental indenture satisfactory to the trustee, executed and delivered to the trustee by such corporation;
- immediately after giving effect to such transactions, no Event of Default described under the caption "Events of Default and Remedies" below or event which, after notice or lapse of time or both would become an Event of Default, has happened and is continuing; and
- we have delivered to the trustee an officers' certificate and an opinion of counsel each stating that such transaction and such supplemental indenture comply with the indenture provisions relating to merger, consolidation and sale of assets.

Upon any consolidation or merger with or into any other person or any sale, conveyance, lease, or other transfer of all or substantially all of our or our subsidiaries' assets to any person, the successor person shall succeed, and be substituted for, us under the indenture and each series of outstanding debt securities, and we shall be relieved of all obligations under the indenture and each series of outstanding debt securities to the extent we were the predecessor person.

Events of Default and Remedies

When we use the term "Event of Default" in the indenture with respect to the debt securities of any series, we mean:

- (1) default in paying interest on the debt securities when it becomes due and the default continues for a period of 30 days or more;
- (2) default in paying principal, or premium, if any, on the debt securities when due;
- (3) default is made in the payment of any sinking or purchase fund or analogous obligation when the same becomes due, and such default continues for 30 days or more;
- (4) default in the performance, or breach, of any covenant or warranty in the indenture (other than defaults specified in clause (1), (2) or (3) above) and the default or breach continues for a period of 60 days or more after we receive written notice of such default from the trustee or we and the trustee receive notice from the holders of at least 25% in aggregate principal amount of the outstanding debt securities of the series;
- (5) certain events of bankruptcy, insolvency, reorganization, administration or similar proceedings with respect to us have occurred; and
- (6) any other Event of Default provided with respect to debt securities of that series that is set forth in the applicable prospectus supplement accompanying this prospectus.

No Event of Default with respect to a particular series of debt securities (except as to certain events of bankruptcy, insolvency or reorganization) necessarily constitutes an Event of Default with respect to any other series of debt securities. The occurrence of certain Events of Default or an acceleration under the indenture may constitute an event of default under certain of our other indebtedness that we may have outstanding from time to time. Unless otherwise provided by the terms of an applicable series of debt securities, if an Event of Default under the indenture occurs with respect to the debt securities of any series and is continuing, then the trustee or the holders of not less than 51% of the aggregate principal amount of the outstanding debt securities of that series may by written notice require us to repay immediately the entire principal amount of the outstanding debt securities of that series (or such lesser amount as may be provided in the terms of the securities), together with all accrued and unpaid interest and premium, if any. In the case of an Event of Default resulting from certain events of bankruptcy, insolvency or reorganization, the principal (or such specified amount) of and accrued and unpaid interest, if any, on all outstanding debt securities will become and be immediately due and payable without any declaration or other act on the part of the trustee or any holder of outstanding debt securities. We refer you to the prospectus supplement relating to any series of debt securities that are discount securities for the particular provisions relating to acceleration of a portion of the principal amount of such discount securities upon the occurrence of an Event of Default.

After a declaration of acceleration, the holders of a majority in aggregate principal amount of outstanding debt securities of any series may rescind this accelerated payment requirement if all existing Events of Default, except for nonpayment of the principal on the debt securities of that series that has become due solely as a result of the accelerated payment requirement, have been cured or waived and if the rescission of acceleration would not conflict with any judgment or decree. The holders of a majority in aggregate principal amount of the outstanding debt securities of any series also have the right to waive past defaults, except a default in paying principal or interest on any outstanding debt security, or in respect of a covenant or a provision that cannot be modified or amended without the consent of all holders of the debt securities of that series.

No holder of any debt security may seek to institute a proceeding with respect to the indenture unless such holder has previously given written notice to the trustee of a continuing Event of Default, the holders of not less than 51% in aggregate principal amount of the outstanding debt securities of the series have made a written request to the trustee to institute proceedings in respect of the Event of Default, the holder or holders have offered reasonable indemnity to the trustee and the trustee has failed to institute such proceeding within 60 days after it received this notice. In addition, within this 60-day period the trustee must not have received directions inconsistent with this written request by holders of a majority in aggregate principal amount of the outstanding debt securities of that series. These limitations do not apply, however, to a suit instituted by a holder of a debt security for the enforcement of the payment of principal, interest or any premium on or after the due dates for such payment.

During the existence of an Event of Default actually known to a responsible officer of the trustee, the trustee is required to exercise the rights and powers vested in it under the indenture and use the same degree of care and skill in its exercise as a prudent person would under the circumstances in the conduct of that person's own affairs. If an Event of Default has occurred and is continuing, the trustee is not under any obligation to exercise any of its rights or powers at the request or direction of any of the holders unless the holders have offered to the trustee security or indemnity reasonably satisfactory to the trustee. Subject to certain provisions, the holders of a majority in aggregate principal amount of the outstanding debt securities of any series 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.

The trustee will, within 90 days after receiving notice of any default, give notice of the default to the holders of the debt securities of that series, unless the default was already cured or waived. Unless there is a default in paying principal, interest or any premium when due, the trustee can withhold giving notice to the holders if it determines in good faith that the withholding of notice is in the interest of the holders. In the case of a default specified in clause (4) above describing Events of Default, no notice of default to the holders of the debt securities of that series will be given until 60 days after the occurrence of the event of default.

The indenture requires us, within 120 days after the end of our fiscal year, to furnish to the trustee a statement as to compliance with the indenture. The indenture provides that the trustee may withhold notice to the holders of debt securities of any series of any Event of Default (except in payment on any debt securities of that series) with respect to debt securities of that series if it in good faith determines that withholding notice is in the interest of the holders of those debt securities.

Modification and Waiver

The indenture may be amended or modified without the consent of any holder of debt securities in order to:

- evidence a successor to the trustee;
- cure ambiguities, defects or inconsistencies;
- provide for the assumption of our obligations in the case of a merger or consolidation or transfer of all or substantially all of our assets that complies with the covenant described under “- Merger, Consolidation or Sale of Assets”;
- make any change that would provide any additional rights or benefits to the holders of the debt securities of a series;
- add guarantors or co-obligors with respect to the debt securities of any series;
- secure the debt securities of a series;
- establish the form or forms of debt securities of any series;
- add additional Events of Default with respect to the debt securities of any series;
- add additional provisions as may be expressly permitted by the Trust Indenture Act;
- maintain the qualification of the indenture under the Trust Indenture Act; or

• make any change that does not adversely affect in any material respect the interests of any holder.

Other amendments and modifications of the indenture or the debt securities issued may be made with the consent of the holders of not less than a majority in aggregate principal amount of the outstanding debt securities of each series affected by the amendment or modification. However, no modification or amendment may, without the consent of the holder of each outstanding debt security affected:

- change the maturity date or the stated payment date of any payment of premium or interest payable on the debt securities;
- reduce the principal amount, or extend the fixed maturity, of the debt securities;
- change the method of computing the amount of principal or any interest of any debt security;
- change or waive the redemption or repayment provisions of the debt securities;
- change the currency in which principal, any premium or interest is paid or the place of payment;
- reduce the percentage in principal amount outstanding of debt securities of any series which must consent to an amendment, supplement or waiver or consent to take any action;
- impair the right to institute suit for the enforcement of any payment on the debt securities;
- waive a payment default with respect to the debt securities;
- reduce the interest rate or extend the time for payment of interest on the debt securities;
- adversely affect the ranking or priority of the debt securities of any series; or
- release any guarantor or co-obligor from any of its obligations under its guarantee or the indenture, except in compliance with the terms of the indenture.

Satisfaction, Discharge and Covenant Defeasance

We may terminate our obligations under the indenture with respect to the outstanding debt securities of any series, when:

- either:
 - all debt securities of any series issued that have been authenticated and delivered have been delivered to the trustee for cancellation; or

- all the debt securities of any series issued that have not been delivered to the trustee for cancellation have become due and payable, will become due and payable within one year, or are to be called for redemption within one year and we have made arrangements satisfactory to the trustee for the giving of notice of redemption by such trustee in our name and at our expense, and in each case, we have irrevocably deposited or caused to be deposited with the trustee sufficient funds to pay and discharge the entire indebtedness on the series of debt securities; and
- we have paid or caused to be paid all other sums then due and payable under the indenture; and
- we have delivered to the trustee an officers' certificate and an opinion of counsel, each stating that all conditions precedent under the indenture relating to the satisfaction and discharge of the indenture have been complied with.

We may elect to have our obligations under the indenture discharged with respect to the outstanding debt securities of any series (“legal defeasance”). Legal defeasance means that we will be deemed to have paid and discharged the entire indebtedness represented by the outstanding debt securities of such series under the indenture, except for:

- the rights of holders of the debt securities to receive principal, interest and any premium when due;
- our obligations with respect to the debt securities concerning issuing temporary debt securities, registration of transfer of debt securities, mutilated, destroyed, lost or stolen debt securities and the maintenance of an office or agency for payment for security payments held in trust;
- the rights, powers, trusts, duties and immunities of the trustee; and
- the defeasance provisions of the indenture.

In addition, we may elect to have our obligations released with respect to certain covenants in the indenture (“covenant defeasance”). If we so elect, any failure to comply with these obligations will not constitute a default or an event of default with respect to the debt securities of any series. In the event covenant defeasance occurs, certain events, not including non-payment, bankruptcy and insolvency events, described under “Events of Default and Remedies,” will no longer constitute an event of default for that series.

In order to exercise either legal defeasance or covenant defeasance with respect to outstanding debt securities of any series:

- we must irrevocably have deposited or caused to be deposited with the trustee as trust funds for the purpose of making the following payments, specifically pledged as security for, and dedicated solely to the benefits of the holders of the debt securities of a series:
 - money in an amount; or
 - U.S. government obligations (or equivalent government obligations in the case of debt securities denominated in other than U.S. dollars or a specified currency) that will provide, not later than one day before the due date of any payment, money in an amount; or

• a combination of money and U.S. government obligations (or equivalent government obligations, as applicable),

in each case sufficient, in the written opinion (with respect to U.S. or equivalent government obligations or a combination of money and U.S. or equivalent government obligations, as applicable) of a nationally recognized firm of independent public accountants to pay and discharge, and which shall be applied by the trustee to pay and discharge, all of the principal (including mandatory sinking fund payments), interest and any premium at due date or maturity;

- in the case of legal defeasance, we have delivered to the trustee an opinion of counsel stating that, under then applicable federal income tax law, the holders of the debt securities of that series will not recognize income, gain or loss for federal income tax purposes as a result of the deposit, defeasance and discharge to be effected and will be subject to the same federal income tax as would be the case if the deposit, defeasance and discharge did not occur;
- in the case of covenant defeasance, we have delivered to the trustee an opinion of counsel to the effect that the holders of the debt securities of that series will not recognize income, gain or loss for federal income tax purposes as a result of the deposit and covenant defeasance to be effected and will be subject to the same federal income tax as would be the case if the deposit and covenant defeasance did not occur;
- no event of default or default with respect to the outstanding debt securities of that series has occurred and is continuing at the time of such deposit after giving effect to the deposit or, in the case of legal defeasance, no default relating to bankruptcy or insolvency has occurred and is continuing at any time on or before the 91st day after the date of such deposit, it being understood that this condition is not deemed satisfied until after the 91st day;
- the legal defeasance or covenant defeasance will not cause the trustee to have a conflicting interest within the meaning of the Trust Indenture Act, assuming all debt securities of a series were in default within the meaning of such Act;
- the legal defeasance or covenant defeasance will not result in a breach or violation of, or constitute a default under, any other agreement or instrument to which we are a party;
- if prior to the stated maturity date, notice shall have been given in accordance with the provisions of the indenture;
- the legal defeasance or covenant defeasance will 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 the trust is registered under such Act or exempt from registration; and
- we have delivered to the trustee an officers' certificate and an opinion of counsel stating that all conditions precedent with respect to the legal defeasance or covenant defeasance have been complied with.

Covenants

We will set forth in the applicable prospectus supplement any restrictive covenants applicable to any issue of debt securities.

Paying Agent and Registrar

The trustee will initially act as paying agent and registrar for all debt securities. We may change the paying agent or registrar for any series of debt securities without prior notice, and we or any of our subsidiaries may act as paying agent or registrar.

Form of Securities

Each debt security will be represented either by a certificate issued in definitive form to a particular investor or by one or more global securities representing the entire issuance of the series of debt securities. Certificated securities will be issued 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 depository or its nominee as the owner of the debt securities represented by these global securities. The depository maintains a computerized system that will reflect each investor's beneficial ownership of the securities through an account maintained by the investor with its broker/dealer, bank, trust company or other representative, as we explain more fully below.

Global Securities

We may issue the registered debt securities in the form of one or more fully registered global securities that will be deposited with a depository or its custodian identified in the applicable prospectus supplement and registered in the name of that depository or its 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 depository for the registered global security, the nominees of the depository or any successors of the depository or those nominees.

If not described below, any specific terms of the depository 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 depository arrangements.

Ownership of beneficial interests in a registered global security will be limited to persons, called participants, that have accounts with the depository or persons that may hold interests through participants. Upon the issuance of a registered global security, the depository 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 depository, 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 your ability to own, transfer or pledge beneficial interests in registered global securities.

So long as the depository, or its nominee, is the registered owner of a registered global security, that depository 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 indenture. 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 indenture. Accordingly, each person owning a beneficial interest in a registered global security must rely on the procedures of the depository 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 indenture. 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 indenture, the depository 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, and interest payments on debt securities represented by a registered global security registered in the name of a depository or its nominee will be made to the depository or its nominee, as the case may be, as the registered owner of the registered global security. Neither we nor the trustee or any other agent of ours or the trustee 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 depository 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 depository. 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 in bearer form or registered in "street name," and will be the responsibility of those participants.

If the depository for any of these securities represented by a registered global security is at any time unwilling or unable to continue as depository or ceases to be a clearing agency registered under the Exchange Act, and a successor depository 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 depository. Any securities issued in definitive form in exchange for a registered global security will be registered in the name or names that the depository gives to the trustee or other relevant agent of ours or theirs. It is expected that the depository's instructions will be based upon directions received by the depository from participants with respect to ownership of beneficial interests in the registered global security that had been held by the depository.

Unless we state otherwise in a prospectus supplement, the Depository Trust Company ("DTC") will act as depository for each series of debt securities issued as global securities. DTC has advised us that DTC is a limited-purpose trust company created to hold securities for its participating organizations (collectively, the "Participants") and to facilitate the clearance and settlement of transactions in those securities between Participants through electronic book-entry changes in accounts of its Participants. The Participants include securities brokers and dealers, banks, trust companies, clearing corporations and certain other organizations. Access to DTC's system is also available to other entities such as banks, brokers, dealers and trust companies that clear through or maintain a custodial relationship with a Participant, either directly or indirectly (collectively, the "Indirect Participants"). Persons who are not Participants may beneficially own securities held by or on behalf of DTC only through the Participants or the Indirect Participants. The ownership interests in, and transfers of ownership interests in, each security held by or on behalf of DTC are recorded on the records of the Participants and the Indirect Participants.

Governing Law

The indenture and each series of debt securities are governed by, and construed in accordance with, the laws of the State of New York.

DESCRIPTION OF WARRANTS

The following description, together with the additional information we may include in any applicable prospectus supplements, summarizes the material terms and provisions of the warrants that we may offer under this prospectus and the related warrant agreements and warrant certificates. While the terms summarized below will apply generally to any warrants that we may offer, we will describe the particular terms of any series of warrants in more detail in the applicable prospectus supplement. If we indicate in the prospectus supplement, the terms of any warrants offered under that prospectus supplement may differ from the terms described below. Specific warrant agreements will contain additional important terms and provisions and will be incorporated by reference as an exhibit to the registration statement that includes this prospectus.

General

We may issue warrants for the purchase of common stock, preferred stock or debt securities in one or more series. We may issue warrants independently or together with common stock, preferred stock and debt securities, and the warrants may be attached to or separate from these securities.

We will evidence each series of warrants by warrant certificates that we will issue under a separate agreement. We may enter into a warrant agreement with a warrant agent. We will indicate the name and address of the warrant agent in the applicable prospectus supplement relating to a particular series of 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:

- in the case of warrants to purchase debt securities, the right to receive payments of principal of, or premium, if any, or interest on, the debt securities purchasable upon exercise or to enforce covenants in the applicable indenture; or
- in the case of warrants to purchase common stock or preferred stock, the right to receive dividends, if any, or, payments upon our liquidation, dissolution or winding up or to exercise voting rights, if any.

Additional Information

We will describe in the applicable prospectus supplement the terms of the series of warrants, including:

- 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;
- in the case of warrants to purchase debt securities, the principal amount of debt securities purchasable upon exercise of one warrant and the price at, and currency in which, this principal amount of debt securities may be purchased upon such exercise;
- in the case of warrants to purchase common stock or preferred stock, 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 agreement 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 agreement and warrants may be modified;
- a discussion on any material or special United States federal income tax consequences of holding or exercising the warrants;

• 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.

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 5 p.m., Eastern 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.

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

We may issue units comprised of one or more of the other securities described in this prospectus in any combination. 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. The applicable prospectus supplement may describe:

- 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 for the issuance, payment, settlement, transfer or exchange of the units or of the securities comprising the units;
- the terms of the unit agreement governing the units;
- United States federal income tax considerations relevant to the units; and

• whether the units will be issued in fully registered global form.

This summary of certain general terms of units and any summary description of units in the applicable prospectus supplement do not purport to be complete and are qualified in their entirety by reference to all provisions of the applicable unit agreement and, if applicable, collateral arrangements and depositary arrangements relating to such units. The forms of the unit agreements and other documents relating to a particular issue of units will be filed with the SEC each time we issue units, and you should read those documents for provisions that may be important to you.

PLAN OF DISTRIBUTION

We may sell the securities through underwriters or dealers, through agents, or directly to one or more purchasers. The accompanying prospectus supplement will describe the terms of the offering of the securities, including:

- the name or names of any underwriters;
- the purchase price of the securities being offered and the proceeds we will receive from the sale;
- any over-allotment options pursuant to which underwriters may purchase additional securities from us;
- 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 the 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 the securities offered by the prospectus supplement. We may change from time to time the public offering price and any discounts or concessions allowed or reallocated or paid to dealers. We may use underwriters with whom we have a material relationship. We will describe such relationships in the prospectus supplement naming the underwriter and the nature of any such relationship.

We may engage in "at the market" offerings of our common stock, which are offerings into an existing trading market, at other than a fixed price, on or through the facilities of a national securities exchange or to or through a market maker otherwise than on an exchange.

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

We may enter into derivative transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. If the applicable prospectus supplement indicates, in connection with those derivatives, the third parties may sell securities covered by this prospectus and the applicable prospectus supplement, including short sale transactions. If so, the third party may use securities pledged by us or borrowed from us or others to settle those sales or to close out any related open borrowings of common shares, and may use securities received from us in settlement of those derivatives to close out any related open borrowings of common shares. The third party in such sale transactions will be an underwriter and, if not identified in this prospectus, will be identified in the applicable prospectus supplement or a post-effective amendment to this registration statement.

All securities we 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.

We may provide agents and underwriters with indemnification against civil liabilities related to this offering, 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.

Rules of the Securities and Exchange Commission may limit the ability of any underwriters to bid for or purchase securities before the distribution of the securities is completed. However, underwriters may engage in the following activities in accordance with the rules:

- *Stabilizing transactions* - Underwriters may make bids or purchases for the purpose of pegging, fixing or maintaining the price of the shares, so long as stabilizing bids do not exceed a specified maximum.

- *Over-allotments and syndicate covering transactions* - Underwriters may sell more shares of our common stock than the number of shares that they have committed to purchase in any underwritten offering. This over-allotment creates a short position for the underwriters. This short position may involve either “covered” short sales or “naked” short sales. Covered short sales are short sales made in an amount not greater than the underwriters’ over-allotment option to purchase additional shares in any underwritten offering. The underwriters may close out any covered short position either by exercising their over-allotment option or by purchasing shares in the open market. To determine how they will close the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market, as compared to the price at which they may purchase shares through the over-allotment option. Naked short sales are short sales in excess of the over-allotment option. The underwriters must close out any naked position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that, in the open market after pricing, there may be downward pressure on the price of the shares that could adversely affect investors who purchase shares in the offering.

- *Penalty bids* - If underwriters purchase shares in the open market in a stabilizing transaction or syndicate covering transaction, they may reclaim a selling concession from other underwriters and selling group members who sold those shares as part of the offering.

Similar to other purchase transactions, an underwriter's purchases to cover the syndicate short sales or to stabilize the market price of our securities may have the effect of raising or maintaining the market price of our securities or preventing or mitigating a decline in the market price of our securities. As a result, the price of the securities may be higher than the price that might otherwise exist in the open market. The imposition of a penalty bid might also have an effect on the price of shares if it discourages resales of the securities.

If commenced, the underwriters may discontinue any of the activities at any time.

In compliance with guidelines of the Financial Industry Regulatory Authority, or FINRA, the maximum consideration or discount to be received by any FINRA member or independent broker dealer may not exceed 8% of the aggregate amount of the securities offered pursuant to this prospectus and any applicable prospectus supplement.

LEGAL MATTERS

The validity of the issuance of the securities offered by this prospectus will be passed upon for us by Lowenstein Sandler PC, Roseland, New Jersey.

EXPERTS

The consolidated financial statements as of and for the year ended December 31, 2011, incorporated by reference in this prospectus and elsewhere in the registration statement have been so incorporated by reference in reliance upon the report of Grant Thornton LLP, independent registered public accountants, upon the authority of said firm as experts in accounting and auditing in giving said report.

The 2010 consolidated financial statements (before the effects of the retrospective adjustments to the financial statements and financial statement disclosures) (not incorporated by reference or separately presented herein) have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report, which is incorporated herein by reference from NeoStem, Inc.'s Current Report on Form 8-K filed with the SEC on August 15, 2012 (which report expresses an unqualified opinion on the consolidated financial statements and includes an explanatory paragraph referring to the fact that Deloitte & Touche LLP was not engaged to audit, review or apply any procedures to (1) the adjustments to retrospectively apply the change in accounting related to the adoption of Financial Accounting Standards Board Accounting Standards Update 2011-05, "Comprehensive Income (Topic 220) - Presentation of Comprehensive Income" and (2) the retrospective adjustments for the discontinued operations discussed in Note 11 to the consolidated financial statements and, accordingly, does not express an opinion or any other form of assurance about whether such retrospective adjustments are appropriate and have been properly applied). The retrospective adjustments to the 2010 consolidated financial statements have been audited by Grant Thornton LLP. The 2010 consolidated financial statements incorporated in this prospectus by reference from NeoStem, Inc.'s Current Report on Form 8-K filed with the SEC on August 15, 2012, have been so incorporated in reliance upon the reports of Deloitte & Touche LLP and Grant Thornton LLP given upon their authority as experts in accounting and auditing.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The following documents previously filed by us with the SEC are incorporated in this prospectus by reference:

- (a) Our Annual Report on Form 10-K for the fiscal year ended December 31, 2011, filed with the SEC on March 20, 2012, portions of which have been updated by the Current Report on Form 8-K filed on August 15, 2012.
- (b) Amendment No. 1 on Form 10-K/A to our Annual Report on Form 10-K for the fiscal year ended December 31, 2011, filed with the SEC on April 30, 2012.
- (c) Our Preliminary Proxy Statement on Schedule 14A for our 2012 Annual Meeting of Stockholders, filed with the SEC on August 24, 2012.
- (d) Our Quarterly Reports on Form 10-Q for the quarterly periods ended March 31, 2012 and June 30, 2012, filed with the SEC on May 11, 2012 and August 14, 2012, respectively.

- (e) Our Current Reports on Form 8-K and amendments thereto, filed with the SEC on January 6, 2012, January 11, 2012, January 12, 2012, January 26, 2012, March 29, 2012, April 5, 2012, June 18, 2012, July 9, 2012, August 15, 2012 and August 24, 2012 (excluding any information deemed furnished pursuant to Item 2.02 or Item 7.01 of any such Current Report on Form 8-K).
- (f) Description of our common stock contained in the Registration Statement on Form 8-A, declared effective on August 8, 2007 (including any amendment or report filed with the SEC for the purpose of updating such description).

All reports and other documents that we file pursuant to Section 13(a) and 13(c), 14 and 15(d) of the Exchange Act prior to the filing of a post-effective amendment which indicates that all securities offered hereunder have been sold or which deregisters all such securities then remaining unsold shall be deemed to be incorporated by reference in this prospectus and to be a part hereof from the date of filing of such reports and documents.

We will provide to each person, including any beneficial owner, to whom a prospectus is delivered, copies of these filings, excluding all exhibits unless an exhibit has been specifically incorporated by reference in such filings, at no cost, upon written or oral request made to:

NeoStem, Inc.
420 Lexington Avenue, Suite 450
New York, NY 10170
(212) 584-4180
Attention: Catherine M. Vaczy, Esq., Vice President and General Counsel

WHERE YOU CAN FIND MORE INFORMATION

We have filed a registration statement on Form S-3 with the Securities and Exchange Commission under the Securities Act of 1933. This prospectus omits some information and exhibits included in the registration statement, copies of which may be obtained upon payment of a fee prescribed by the Commission or may be examined free of charge at the principal office of the SEC in Washington, D.C.

We are subject to the informational requirements of the Securities Exchange Act of 1934 and in accordance therewith file reports, proxy statements and other information with the SEC. The reports, proxy statements and other information filed by us with the SEC can be inspected and copied at the Public Reference Room maintained by the SEC at 100 Fifth Street, N.E., Washington, D.C. 20549. Copies of filings can be obtained from the Public Reference Room maintained by the SEC by calling the SEC at 1-800-SEC-0330. In addition, the Commission maintains a website that contains reports, proxy and informational statements and other information filed electronically with the SEC at <http://www.sec.gov>.

You may request, orally or in writing, a copy of these documents, which will be provided to you at no cost, by contacting Catherine M. Vaczy, Esq., Vice President and General Counsel, NeoStem, Inc., 420 Lexington Avenue, Suite 450, New York, NY 10170, telephone (212) 584-4180.

You should rely only on the information contained in this prospectus, including information incorporated by reference as described above, or any prospectus supplement that we have specifically referred you to. We have not authorized anyone else to provide you with different information. You should not assume that the information in this prospectus or any prospectus supplement is accurate as of any date other than the date on the front of those documents or that any document incorporated by reference is accurate as of any date other than its filing date. You should not consider this prospectus to be an offer or solicitation relating to the securities in any jurisdiction in which such an offer or solicitation relating to the securities is not authorized. Furthermore, you should not consider this prospectus to be an offer or solicitation relating to the securities if the person making the offer or solicitation is not qualified to do so, or if it is unlawful for you to receive such an offer or solicitation.

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

The following table sets forth the various expenses to be incurred in connection with the registration of the securities being registered hereby, all of which will be borne by us. All amounts shown are estimates except the SEC registration fee.

SEC registration fee	\$ 17,190
Transfer agent's and trustee's fees and expenses	10,000
Printing and engraving expenses	5,000
Legal fees and expenses	25,000
Accounting fees and expenses	15,000
Miscellaneous	5,000
Total expenses	\$ 77,190

Item 15. Indemnification of Directors and Officers.

We are incorporated under the laws of the State of Delaware. Under the General Corporation Law of the State of Delaware (the "Delaware GCL"), a corporation may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation), by reason of the fact that he or she is or was our director, officer, employee or agent, or is or was serving at our request as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred in connection with such action, suit or proceeding if he or she acted in good faith and in a manner he or she reasonably believed to be in or not opposed to our best interests, and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful.

In addition, the Delaware GCL also provides that we also may indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in our right to procure a judgment in our favor by reason of the fact that he or she is or was our director, officer, employee or agent, or is or was serving at our request as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against expenses (including attorneys' fees) actually and reasonably incurred by him or her in connection with the defense or settlement of such action or suit if he or she acted in good faith and in a manner he or she reasonably believed to be in or not opposed to our best interests. However, in such an action by or on our behalf, no indemnification may be made in respect of any claim, issue or matter as to which the person is adjudged liable to us unless and only to the extent that the court determines that, despite the adjudication of liability but in view of all the circumstances, the person is fairly and reasonably entitled to indemnity for such expenses which the court shall deem proper.

Our certificate of incorporation is consistent with the Delaware GCL. Each of our directors, officers, employees and agents will be indemnified to the extent permitted by the Delaware GCL. We also maintain insurance on behalf of our directors and officers against liabilities asserted against such persons and incurred by such persons in such capacities, whether or not we would have the power to indemnify such persons under the Delaware GCL.

We have entered into indemnification agreements with our Chief Executive Officer, Chief Financial Officer, General Counsel, certain other employees and each of our directors pursuant to which we have agreed to indemnify such party to the full extent permitted by law, subject to certain exceptions, if such party becomes subject to an action because such party is a our director, officer, employee, agent or fiduciary.

Item 16. Exhibits.

Exhibit	Description	Reference
1.1	Form of Underwriting Agreement for Equity Securities*	1.1
1.2	Form of Underwriting Agreement for Debt Securities*	1.2
2.1	Equity Purchase Agreement, dated as of June 18, 2012, by and among NeoStem, Inc., China Biopharmaceuticals Holdings, Inc., Fullbright Finance Limited, Suzhou Erye Economy & Trading Co., Ltd., and Suzhou Erye Pharmaceutical Co., Ltd. ⁽¹⁾	2.1
2.2	Amendment to Equity Purchase Agreement, dated as of August 14, 2012, by and among NeoStem, Inc., China Biopharmaceuticals Holdings, Inc., Highacheive Holdings Limited, Fullbright Finance Limited, Suzhou Erye Economy & Trading Co., Ltd. and Suzhou Erye Pharmaceutical Co., Ltd. ⁽²⁷⁾	2.1
2.3	Agreement and Plan of Merger, dated as of July 13, 2011, by and among NeoStem, Inc., Amo Acquisition Company I, Inc., Amo Acquisition Company II, LLC and Amorcyte, Inc. ⁽²⁾	2.1
2.4	Agreement and Plan of Merger, dated as of September 23, 2010, by and among NeoStem, Inc., NBS Acquisition Company LLC, and Progenitor Cell Therapy, LLC ⁽³⁾	2.1
2.5	Agreement and Plan of Merger, dated as of November 2, 2008, by and among NeoStem, Inc., China Biopharmaceuticals Holdings, Inc., China Biopharmaceuticals Corp., and CBH Acquisition LLC, as amended by Amendment No. 1 dated as of July 1, 2009 and Amendment No. 2 dated as of August 27, 2009 ⁽⁴⁾	Annex A
3.1	Amended and Restated Certificate of Incorporation, as amended (as certified March 25, 2011) ⁽⁵⁾	3.1
3.2	Certificate of Amendment to Amended and Restated Certificate of Incorporation, filed with the Secretary of State of the State of Delaware on October 14, 2011 ⁽⁶⁾	3.2
3.3	Amended and Restated By-Laws dated August 31, 2006 ⁽⁵⁾	3.2
4.1	Form of Underwriters' Warrant dated August 14, 2007 ⁽⁷⁾	10.2
4.2	Form of Underwriter Warrant Clarification Agreement among NeoStem, Inc. and certain members of its Underwriting Group ⁽⁸⁾	10.4
4.3	Form of Class A Warrant Agreement and Certificate from August 2007 ⁽⁹⁾	4(b)
4.4	Form of Warrant Clarification Agreement between NeoStem, Inc. and Continental Stock Transfer and Trust Company ⁽⁸⁾	10.3
4.5	Restated Warrant Agreement dated August 14, 2007 ⁽⁷⁾	10.1
4.6	Form of Warrant to Purchase Shares of Common Stock of Phase III Medical, Inc from June 2006 ⁽¹⁰⁾	10.3
4.7	Form of Phase III Medical, Inc. Warrant to Purchase Shares of Common Stock from July/August 2006 ⁽¹¹⁾	10.3
4.8	Form of Redeemable Warrant to Purchase Shares of Common Stock of NeoStem, Inc. from January/February 2007 ⁽¹²⁾	10.2
4.9	Form of Non-Redeemable Warrant to Purchase Shares of Common Stock of NeoStem, Inc. from January/February 2007 ⁽¹²⁾	10.3
4.10	Form of Redeemable Warrant to Purchase Shares of Common Stock of NeoStem, Inc. issued to JFS Investments, Inc. ⁽¹³⁾	4.15
4.11	Redeemable Warrant to Purchase Shares of Common Stock of NeoStem, Inc. issued to Solutions in Marketing, Inc. ⁽¹³⁾	4.16
4.12	Warrant to Purchase Shares of Common Stock of NeoStem, Inc. issued to Wall Street Communications Group, Inc. ⁽¹³⁾	4.17
4.13	Form of Redeemable Service Provider Warrant ⁽¹³⁾	4.19
4.14	Form of 2011 Redeemable Service Provider Warrant ⁽¹³⁾	4.20
4.15	Form of Redeemable Service Provider Warrant with cashless exercise rights ⁽¹³⁾	4.21
4.16	Form of 2010/2011 Redeemable Service Provider Warrant with cashless exercise rights ⁽¹³⁾	4.22
4.17	Form of Redeemable Warrant to Purchase Shares of Common Stock of NeoStem, Inc. from May 2008 ⁽¹⁴⁾	10.2
4.18	Form of Redeemable Finder's Warrant to Purchase Shares of Common Stock of NeoStem, Inc. from May 2008 ⁽¹³⁾	4.6
4.19	Form of Redeemable Warrant to Purchase Shares of Common Stock of NeoStem, Inc. issued to RimAsia Capital Partners L.P. in September 2008 ⁽¹⁵⁾	10.2
4.20	Letter Agreement dated December 18, 2008 between NeoStem, Inc. and RimAsia Capital Partners, L.P. ⁽¹⁶⁾	4.1
4.21	Form of Warrant to Purchase Shares of Common Stock of NeoStem, Inc. from October 2008 ⁽¹⁶⁾	4.2
4.22	Form of Redeemable Warrant to Purchase Shares of Common Stock of NeoStem, Inc. from November 2008 ⁽¹⁶⁾	4.3

4.23	Specimen Certificate for Common Stock ⁽¹⁷⁾	4.1
4.24	Form of Warrant issued in connection with April and July 2009 private placements ⁽¹⁸⁾	4.2
4.25	Form of Common Stock Purchase Warrant from June 2010 ⁽¹⁹⁾	4.1
4.26	Form of Placement Agent Warrant from June 2010 ⁽¹⁹⁾	4.2
4.27	Amended and Restated Warrant, dated March 15, 2010, issued to RimAsia Capital Partners, L.P. ⁽²⁰⁾	4.1
4.28	Form of Warrant from the November 2010 Common Stock Offering ⁽²¹⁾	4.1
4.29	Form of Warrant from the November 2010 Preferred Stock Offering ⁽²¹⁾	4.2
4.30	Warrant Agreement, dated as of January 19, 2011, between NeoStem, Inc. and Continental Stock Transfer & Trust Company, with the forms of \$3.00 Warrant, \$5.00 Warrant and \$7.00 Warrant attached thereto ⁽²²⁾	4.1
4.31	Warrant Agreement, dated as of July 22, 2011, between NeoStem, Inc. and Continental Stock Transfer & Trust Company, with the form of Series NA Warrant attached thereto ⁽²³⁾	4.1
4.32	Registration Rights Agreement, dated as of September 28, 2011, by and between NeoStem, Inc. and Aspire Capital Fund, LLC ⁽²⁴⁾	4.1
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† Filed herewith.

* To be filed by amendment or as an exhibit to a document to be incorporated by reference herein in connection with an offering of the offered securities.

** Where applicable, to be incorporated by reference to a subsequent filing in accordance with Section 305(b)(2) of the Trust Indenture Act of 1939, as amended.

(1) Filed with the SEC as an exhibit, numbered as indicated above, to our current report on Form 8-K, dated June 18, 2012, which exhibit is incorporated here by reference.

- (2) Filed with the SEC as an exhibit, numbered as indicated above, to our current report on Form 8-K dated July 11, 2011, which exhibit is incorporated here by reference.
- (3) Filed with the SEC as an exhibit, numbered as indicated above, to our current report on Form 8-K, dated September 23, 2010, which exhibit is incorporated here by reference.
- (4) Filed with the SEC as an exhibit, numbered as indicated above, to Pre-Effective Amendment No. 4 to our Registration Statement on Form S-4, File No. 333-160578, which exhibit is incorporated here by reference.
- (5) Filed with the SEC as an exhibit, numbered as indicated above, to our Annual Report on Form 10-K for the fiscal year ended December 31, 2010 (filed with the SEC on April 6, 2011), which exhibit is incorporated here by reference.
- (6) Filed with the SEC on October 17, 2011, as an exhibit, numbered as indicated above, to our current report on Form 8-K dated October 14, 2011, which exhibit is incorporated here by reference.
- (7) Filed with the SEC as an exhibit, numbered as indicated above, to our quarterly report on Form 10-QSB for the quarter ended September 30, 2007, which exhibit is incorporated here by reference.
- (8) Filed with the SEC as an exhibit, numbered as indicated above, to our quarterly report on Form 10-Q for the quarter ended September 30, 2008, which exhibit is incorporated here by reference.
- (9) Filed with the SEC as an exhibit, numbered as indicated above, to Pre-Effective Amendment No. 3 to our Registration Statement on Form SB-2/A, File No. 333-142923, which exhibit is incorporated here by reference.
- (10) Filed with the SEC as an exhibit, numbered as indicated above, to our current report on Form 8-K, dated June 2, 2006, which exhibit is incorporated here by reference.
- (11) Filed with the SEC as an exhibit, numbered as indicated above, to our Registration Statement on Form S-1, File No. 333-137045, which exhibit is incorporated here by reference.
- (12) Filed with the SEC as an exhibit, numbered as indicated above, to our current report on Form 8-K, dated January 26, 2007, which exhibit is incorporated here by reference.
- (13) Filed with the SEC as an exhibit, numbered as indicated above, to our Registration Statement on Form S-3, File No. 333-173853, which exhibit is incorporated here by reference.
- (14) Filed with the SEC as an exhibit, numbered as indicated above, to our current report on Form 8-K, dated May 20, 2008, which exhibit is incorporated here by reference.
- (15) Filed with the SEC as an exhibit, numbered as indicated above, to our current report on Form 8-K, dated August 28, 2008, which exhibit is incorporated here by reference.
- (16) Filed with the SEC as an exhibit, numbered as indicated above, to our annual report on Form 10-K for the year ended December 31, 2008, which exhibit is incorporated here by reference.
- (17) Filed with the SEC as an exhibit, numbered as indicated above, to our Registration Statement on Form S-3, File No. 333-145988, which exhibit is incorporated here by reference.
- (18) Filed with the SEC as an exhibit, numbered as indicated above, to our current report on Form 8-K, dated April 13, 2009, which exhibit is incorporated here by reference.
- (19) Filed with the SEC on June 28, 2010, as an exhibit, numbered as indicated above, to our current report on Form 8-K, dated June 25, 2010, which exhibit is incorporated here by reference.
- (20) Filed with the SEC on March 18, 2010 as an exhibit, numbered as indicated above, to our current report on Form 8-K dated March 15, 2010, which exhibit is incorporated here by reference.
- (21) Filed with the SEC on November 16, 2010, as an exhibit, numbered as indicated above, to our current report on Form 8-K dated November 16, 2010, which exhibit is incorporated here by reference.

- (22) Filed with the SEC on January 24, 2011, as an exhibit, numbered as indicated above, to our current report on Form 8-K dated January 18, 2011, which exhibit is incorporated here by reference.
- (23) Filed with the SEC as an exhibit, numbered as indicated above, to our quarterly report on Form 10-Q for the quarter ended September 30, 2011, which exhibit is incorporated here by reference.
- (24) Filed with the SEC as an exhibit, numbered as indicated above, to our current report on Form 8-K, dated September 28, 2011, which exhibit is incorporated here by reference.
- (25) Filed with the SEC as an exhibit, numbered as indicated above, to our current report on Form 8-K, dated March 29, 2012, which exhibit is incorporated here by reference.
- (26) Filed with the SEC as an exhibit, numbered as indicated above, to our quarterly report on Form 10-Q for the quarter ended June 30, 2012, which exhibit is incorporated here by reference.
- (27) Filed with the SEC as an exhibit, numbered as indicated above, to our current report on Form 8-K, dated August 23, 2012, which exhibit is incorporated here by reference.
- (28) Filed with the SEC as an exhibit, numbered as indicated above, to our resale registration statement on Form S-3, dated August 24, 2012, which exhibit is incorporated here by reference.

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 of 1933;

(ii) To reflect in the prospectus any facts or events arising after the effective date of this 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 this 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 reflected in the form of prospectus filed with the Commission pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than 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 this registration statement or any material change to such information in this registration statement; provided, however, that paragraphs (i), (ii) and (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 Securities Exchange Act of 1934 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 of 1933, 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 of 1933 to any purchaser:

(i) If the registrants are relying on Rule 430B,

(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 of 1933 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 the 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; or

(ii) If the registrant is subject to Rule 430C, each prospectus filed pursuant to Rule 424(b) as part of a registration statement relating to an offering, other than registration statements relying on Rule 430B or other than prospectuses filed in reliance on Rule 430A, shall be deemed to be part of and included in the registration statement as of the date it is first used after effectiveness; 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 first use, 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 date of first use.

(5) That, for the purpose of determining liability of the registrant under the Securities Act of 1933 to any purchaser in the initial distribution of the securities, the registrant undertakes that in a primary offering of securities of the 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;
- (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the 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 an 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 an undersigned registrant to the purchaser.

(6) That, for purposes of determining any liability under the Securities Act of 1933, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Securities Exchange Act of 1934) 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 such securities at that time shall be deemed to be the initial bona fide offering thereof.

(7) 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 (the "Act") in accordance with the rules and regulations prescribed by the Commission under Section 305(b)(2) of the Act.

(8) If this registration statement is permitted by Rule 430A, that:

(i) For purposes of determining any liability under the Securities Act of 1933, 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.

(ii) For the purpose of determining any liability under the Securities Act of 1933, 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) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the forgoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the 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 New York, State of New York, on August 24, 2012.

NEOSTEM, INC.

By: /s/ Robin L. Smith, M.D.
Name: Robin L. Smith, M.D.
Title: Chief Executive Officer

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Robin L. Smith and Catherine M. Vaczy, and either of them, as his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) and supplements to this registration statement (or any other registration statement for the same offering that is effective upon filing pursuant to Rule 462(b) under the Securities Act of 1933, as amended) and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming all that each of said attorneys-in-fact and agents, or his or her substitute or substitutes, may do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, 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/ Robin L. Smith, M.D.</u> Robin L. Smith, M.D.	Director, Chief Executive Officer and Chairman of the Board (Principal Executive Officer)	August 24, 2012
<u>/s/ Larry A. May</u> Larry A. May	Chief Financial Officer (Principal Financial Officer)	August 24, 2012
<u>/s/ Joseph Talamo</u> Joseph Talamo	Vice President, Corporate Controller and Chief Accounting Officer (Principal Accounting Officer)	August 24, 2012
<u>/s/ Richard Berman</u> Richard Berman	Director	August 24, 2012
<u>/s/ Steven S. Myers</u> Steven S. Myers	Director	August 24, 2012
<u>/s/ Drew Bernstein</u> Drew Bernstein	Director	August 24, 2012
<u>/s/ Eric Wei</u> Eric Wei	Director	August 24, 2012
<u>/s/ Edward C. Geehr, M.D.</u> Edward C. Geehr, M.D.	Director	August 24, 2012
<u>/s/ Shi Mingsheng</u> Shi Mingsheng	Director	August 24, 2012
<u>/s/ Andrew L. Pecora, M.D.</u> Andrew L. Pecora, M.D.	Director	August 24, 2012
<u>/s/ Martyn D. Greenacre</u> Martyn D. Greenacre	Director	August 24, 2012

NEOSTEM, INC.

and

_____, as Trustee

INDENTURE

Dated as of _____, 20__

Providing for the Issuance of Debt Securities

CROSS-REFERENCE TABLE*

**Trust Indenture
Act Section****Indenture Section**

310 (a)(1)	N.A.
(a)(2)	6.13
(a)(3)	6.13
(a)(4)	N.A.
(a)(5)	7.01
(b)	7.02
(c)	7.02
311 (a)	7.03
(b)	7.03
(c)	7.03
312 (a)	7.03
(b)	7.04; 1.02
(c)	1.02
313 (a)	1.02
(b)(2)	N.A.
(c)	1.02
(d)	N.A.
314 (a)	6.01
(c)(1)	6.02; 1.06
(c)(2)	6.01
(c)(3)	6.01
(e)	5.14
(f)	1.01
315 (a)	5.12
(b)	5.02
(c)	N.A.
(d)	5.08
(e)	3.07
316 (a)(last sentence)	5.03
(a)(1)(A)	5.04
(a)(1)(B)	4.06
(a)(2)	1.07
(b)	N.A.
(c)	1.07

N.A. means not applicable

* This Cross-Reference Table is not part of the Indenture.

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THIS INDENTURE, between NeoStem, Inc., a Delaware corporation (hereinafter called the “**Company**”) having its principal office at 420 Lexington Avenue, Suite 450, New York, New York 10170, and, [], a [] as trustee (hereinafter called the “**Trustee**”), is made and entered into as of this [] day of [], 20[].

Recitals of the Company

The Company has duly authorized the execution and delivery of this Indenture to provide for the issuance of its unsecured debentures, notes, bonds, and other evidences of indebtedness, to be issued in one or more fully registered series.

All things necessary to make this Indenture a valid agreement of the Company, in accordance with its terms, have been done.

Agreements of the Parties

To set forth or to provide for the establishment of the terms and conditions upon which the Securities (as hereinafter defined) are and are to be authenticated, issued, and delivered, and in consideration of the premises thereof, and the purchase of Securities by the Holders (as hereinafter defined) thereof, it is mutually covenanted and agreed as follows, for the equal and proportionate benefit of all Holders from time to time of the Securities or of any series thereof, as the case may be:

ARTICLE I DEFINITIONS AND OTHER PROVISIONS OF GENERAL APPLICATION

Section 1.01 Definitions. For all purposes of this Indenture and of any indenture supplemental hereto, except as otherwise expressly provided or unless the context otherwise requires:

(a) the terms defined in this Article have the meanings assigned to them in this Article, and include the plural as well as the singular;

(b) all other terms used herein which are defined in the Trust Indenture Act (as hereinafter defined), either directly or by reference therein, have the meanings assigned to them therein;

(c) all accounting terms not otherwise defined herein have the meanings assigned to them in accordance with generally accepted accounting principles and, except as otherwise herein expressly provided, the term “generally accepted accounting principles” with respect to any computation required or permitted hereunder shall mean such accounting principles as are generally accepted in the United States of America at the date of such computation; and

(d) all references in this instrument to designated “Articles”, “Sections” and other subdivisions are to the designated Articles, Sections and other subdivisions of this instrument as originally executed. The words “herein”, “hereof”, and “hereunder” and other words of similar import refer to this Indenture as a whole and not to any particular Article, Section, or other subdivision.

(e) the following terms will have the meanings set forth below:

“**Act**”, when used with respect to any Securityholder (as hereinafter defined), has the meaning specified in Section 1.04.

“**Affiliate**” of any specified Person (as hereinafter defined) 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” when used with respect to any specified Person means the power to direct the management and policies of such Person, directly or indirectly, whether through the ownership of voting securities, by contract, or otherwise; and the terms “controlling” and “controlled” have meanings correlative to the foregoing.

“**Authenticating Agent**” means any Person authorized by the Trustee to authenticate Securities of one or more series under Section 6.14.

“**Authentication Order**” has the meaning specified in Section 3.03.

“Board of Directors” means (i) the board of directors of the Company, (ii) any duly authorized committee of that board, or (iii) any officer, director, or authorized representative of the Company, in each case duly authorized by such Board to act hereunder.

“Board Resolution” means a copy of a resolution certified by the secretary or an assistant secretary of the Company to have been duly adopted by the Board of Directors and to be in full force and effect on the date of such certification, and delivered to the Trustee.

“Capital Stock” means, with respect to any Person, any capital stock (including preferred stock), shares, interests, participations or other ownership interests (however designated) of such Person and any rights (other than debt securities convertible or exchangeable for corporate stock), warrants or options to purchase any thereof.

“Commission” means the Securities and Exchange Commission, as from time to time constituted, created under the Securities Exchange Act of 1934, or, if at any time after the execution of this instrument such Commission is not existing and performing the duties now assigned to it under the Trust Indenture Act, then the body performing such duties on such date.

“Company” means NeoStem, Inc., unless and until a successor corporation shall have become such pursuant to the applicable provisions of this Indenture, and thereafter **“ Company ”** shall mean such successor corporation.

“Company Request”, “Company Order”, and “Company Consent” mean, respectively, a written request, order, or consent signed in the name of the Company by the chairman of the Board of Directors, the chief executive officer, the chief financial officer, the treasurer, the controller, or by any other officer or officers of the Company pursuant to an applicable Board Resolution, and delivered to the Trustee.

“Corporate Trust Office” means the office of the Trustee at which at any particular time its corporate trust business shall be principally administered, which office at the date hereof is located at [].

“Corporation” means a corporation, association, company, joint-stock company, limited liability company or business trust.

“Covenant Defeasance” has the meaning specified in Section 4.03.

“Defaulted Interest” has the meaning specified in Section 3.07.

“Defeasance” has the meaning specified in Section 4.02.

“Depository” means with respect to the Securities of any series issuable or issued in whole or in part in global form, the Person designated as Depository by the Company pursuant to Section 3.01, unless and until a successor Depository shall have become such pursuant to the applicable provisions of this Indenture, and thereafter **“Depository ”** shall mean or include each Person who is then a Depository hereunder, and if at any time there is more than one such Person, **“Depository ”** as used with respect to the Securities of any such series shall mean the **“Depository ”** with respect to the Securities of that series.

“Equivalent Government Securities” means, in relation to Securities denominated in a currency other than U.S. dollars, securities of the government that issued the currency in which such Securities are denominated or securities of government agencies backed by the full faith and credit of such government.

“Event of Default” has the meaning specified in Article 5.

“Holder”, “Securityholder” and “Holder of Securities” means a Person in whose name a Security is registered in the Security Register (as hereinafter defined).

“Indebtedness” with respect to any Person means (1) any liability of such Person (a) for borrowed money, or (b) evidenced by a bond, note, debenture or similar instrument (including purchase money obligations but excluding Trade Payables), or (c) for the payment of money relating to a lease that is required to be classified as a capitalized lease obligation in accordance with generally accepted accounting principles; (2) mandatorily redeemable preferred or preference stock of a Subsidiary held by Persons other than the Company or a Subsidiary; (3) any liability of others described in the preceding clause (1) that such Person has guaranteed, that is recourse to such Person or that is otherwise such Person's legal liability; and (4) any amendment, supplement, modification, deferral, renewal, extension or refunding of any liability of the types referred to in clauses (1), (2) and (3) above.

“Indenture” or **“this Indenture”** means this instrument as originally executed or as it may from time to time be supplemented or amended by one or more indentures supplemental hereto entered into pursuant to the applicable provisions hereof and shall include the terms of any particular series of Securities established as contemplated by Section 3.01.

“Interest Payment Date”, when used with respect to any series of Securities, means any date on which an installment of interest on those Securities is scheduled to be paid.

“Maturity”, when used with respect to any Security, means the date on which the principal amount outstanding under such Security or an installment of principal amount outstanding under such Security becomes due and payable, as therein or herein provided, whether on the Scheduled Maturity Date (as hereinafter defined), by declaration of acceleration, call for redemption, or otherwise.

“New York Business Day” means (except, with respect to any particular series of Securities, as may be otherwise provided in the form of such Securities) any day other than a Saturday or Sunday that is neither a legal holiday nor a day on which banking institutions are authorized or required by law, regulation, or executive order to be closed.

“Officers' Certificate” means a certificate signed by any two of the chairman of the Board of Directors, the chief executive officer, the president, any vice president, the treasurer or by any other officer or officers of the Company pursuant to an applicable Board Resolution, and delivered to the Trustee.

“Opinion of Counsel” means a written opinion of counsel to the Company, which counsel may be an employee of the Company or other counsel who shall be reasonably acceptable to the Trustee.

“Original Issue Discount Security” means any Security which is initially sold at a discount from the principal amount thereof and the terms of which provide that upon redemption or acceleration of the Maturity thereof, an amount less than the principal amount thereof would become due and payable.

“Outstanding”, when used with respect to any particular Securities or to the Securities of any particular series means, as of the date of determination, all such Securities theretofore authenticated and delivered under this Indenture, except:

(a) such Securities theretofore canceled by the Trustee or delivered by the Company to the Trustee for cancellation;

(b) such Securities, or portions thereof, for whose payment or redemption money in the necessary amount has been theretofore deposited in trust with the Trustee or with any Paying Agent (as hereinafter defined) other than the Company, or, if the Company shall act as its own Paying Agent, has been set aside and segregated in trust by the Company; provided, in any case, that if such Securities are to be redeemed prior to their Scheduled Maturity Date, notice of such redemption has been duly given pursuant to this Indenture or provision therefor satisfactory to the Trustee has been made; and

(c) such Securities in exchange for or in lieu of which other Securities have been authenticated and delivered pursuant to this Indenture, or which shall have been paid, in each case, pursuant to the terms of Section 3.06 (except with respect to any such Security as to which proof satisfactory to the Trustee is presented that such Security is held by a Person in whose hands such Security is a legal, valid, and binding obligation of the Company).

In determining whether the Holders of the requisite principal amount of such Securities Outstanding have given any request, demand, authorization, direction, notice, consent or waiver hereunder, the principal amount of any Original Issue Discount Security that shall be deemed to be Outstanding 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. In determining whether the Holders of the requisite principal amount of such Securities Outstanding have given a direction concerning the time, method, and place of conducting any proceeding for any remedy available to the Trustee, or concerning the exercise of any trust or power conferred upon the Trustee under this Indenture, or concerning a consent on behalf of the Holders of any series of Securities to the waiver of any past default and its consequences, Securities owned by the Company, any other obligor upon the Securities, or any Affiliate of the Company or such other obligor shall be disregarded and deemed not to be Outstanding. In determining whether the Trustee shall be protected in relying upon any such request, demand, authorization, direction, notice, consent, or waiver, only Securities which a Responsible Officer assigned to the corporate trust department of the Trustee knows to be owned by the Company or any other obligor upon the Securities or any Affiliate of the Company or such other obligor shall be so disregarded. Securities so owned which have been pledged in good faith may be regarded as Outstanding if the pledgee establishes to the satisfaction of the Trustee the pledgee's right to act as owner with respect to such Securities and that the pledgee is not the Company or any other obligor upon the Securities or any Affiliate of the Company or such other obligor.

"Paying Agent" means, with respect to any Securities, any Person appointed by the Company to distribute amounts payable by the Company on such Securities. If at any time there shall be more than one such Person, "Paying Agent" as used with respect to the Securities of any particular series shall mean the Paying Agent with respect to Securities of that series. As of the date of this Indenture, the Company has appointed [] as Paying Agent with respect to all Securities issuable hereunder.

"Person" means any individual, corporation, partnership, joint venture, association, joint-stock company, trust, unincorporated organization, or government, or any agency or political subdivision thereof.

"Place of Payment" means with respect to any series of Securities issued hereunder the city or political subdivision so designated with respect to the series of Securities in question in accordance with the provisions of Section 3.01.

"Predecessor Securities" of any particular Security means every previous Security evidencing all or a portion of the same debt as that evidenced by such particular Security; and, for the purposes of this definition, any Security authenticated and delivered under Section 3.06 in lieu of a lost, destroyed, mutilated, or stolen Security shall be deemed to evidence the same debt as the lost, destroyed, mutilated, or stolen Security.

"Record Date" means any date as of which the Holder of a Security will be determined for any purpose described herein, such determination to be made as of the close of business on such date by reference to the Security Register.

"Redemption Date", when used with respect to any Security to be redeemed, means the date fixed for such redemption by or pursuant to this Indenture.

"Redemption Price", when used with respect to any Security to be redeemed, means the price specified in the Security at which it is to be redeemed pursuant to this Indenture.

"Repayment Date", when used with respect to any Security to be repaid, means the date fixed for such repayment pursuant to such Security.

"Repayment Price", when used with respect to any Security to be repaid, means the price at which it is to be repaid pursuant to such Security.

"Responsible Officer", when used with respect to the Trustee, shall mean an officer or assistant officer of the Trustee in the Corporate Trust Office, having direct responsibility for the administration of this Indenture, and also, with respect to a particular corporate trust matter, any other officer to whom such matter is referred because of such officer's knowledge of and familiarity with the particular subject.

"Scheduled Maturity Date", when used with respect to any Security, means the date specified in such Security as the date on which all outstanding principal and interest will be due and payable.

“**Security**” or “**Securities**” means any note or notes, bond or bonds, debenture or debentures, or any other evidences of indebtedness, as the case may be, of any series authenticated and delivered from time to time under this Indenture.

“**Security Register**” shall have the meaning specified in Section 3.05.

“**Security Registrar**” means the Person who maintains the Security Register, which Person shall be the Trustee unless and until a successor Security Registrar is appointed by the Company.

“**Senior Indebtedness**” means all obligations or indebtedness of, or guaranteed or assumed by, the Company, whether or not represented by bonds, debentures notes or similar instruments, for borrowed money, and any amendments, renewals, extensions, modifications and refundings of any such obligations or indebtedness, unless in the instrument creating or evidencing any such indebtedness or obligations or pursuant to which the same is outstanding it is specifically stated, at or prior to the time the Company becomes liable in respect thereof, that any such obligation or indebtedness or such amendment, renewal, extension, modification and refunding thereof is not Senior Indebtedness.

“**Significant Subsidiary**” means each Subsidiary which is a “significant subsidiary” as defined in Rule 1-02(w) of Regulation S-X, as amended or modified and in effect from time to time.

“**Special Record Date**” for the payment of any Defaulted Interest means a date fixed by the Trustee pursuant to Section 3.07.

“**Specified Currency**” has the meaning specified in Section 3.01.

“**Subsidiary**” means any corporation, partnership or other entity of which at the time of determination the Company owns or controls directly or indirectly more than 50% of the shares of voting stock or equivalent interest.

“**Trade Payables**” means accounts payable or any other Indebtedness or monetary obligations to trade creditors created or assumed in the ordinary course of business in connection with the obtaining of materials, finished products, inventory or services.

“**Trust Indenture Act**” or “**TIA**” means the Trust Indenture Act of 1939, as in force as of the date hereof, except as provided in Section 9.05.

“**Trustee**” means the party named as such above until a successor becomes such pursuant to this Indenture and thereafter means or includes each party who is then a trustee hereunder, and if at any time there is more than one such party, “Trustee” as used with respect to the Securities of any series means the Trustee with respect to Securities of that series. If Trustees with respect to different series of Securities are trustees under this Indenture, nothing herein shall constitute the Trustees co-trustees of the same trust, and each Trustee shall be the trustee of a trust separate and apart from any trust administered by any other Trustee with respect to a different series of Securities.

“**U.S. Government Obligations**” means (i) securities that are direct obligations of the United States of America, the payment of which is unconditionally guaranteed by the full faith and credit of the United States of America and (ii) securities that are 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 by the full faith and credit of the United States of America, and also includes depository receipts issued by a bank or trust company as custodian with respect to any of the securities described in the preceding clauses (i) and (ii), and any payment of interest or principal payable under any of the securities described in the preceding clauses (i) and (ii) that is 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, or from any amount received by the custodian in respect of such securities, or from any specific payment of interest or principal payable under the securities evidenced by such depository receipt.

“**Voting Stock**”, as applied to the stock of any corporation, means stock of any class or classes (however designated), the outstanding shares of which have, by the terms thereof, ordinary voting power to elect a majority of the members of the board of directors (or other governing body) of such corporation, other than stock having such power only by reason of the happening of a contingency.

Section 1.02 Officers' Certificates and Opinions. Every Officers' Certificate, Opinion of Counsel, and other certificate or opinion to be delivered to the Trustee under this Indenture with respect to any action to be taken by the Trustee (except for the Officers' Certificate required by Section 10.04) shall include the following:

(a) a statement that each individual signing such certificate or opinion has read all covenants and conditions of this Indenture relating to such proposed action, including the definitions herein 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 each such individual, he or she has made such examination or investigation as is necessary to enable him or her 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, in the opinion of each such individual, such condition or covenant has been complied with.

Section 1.03 Form of Documents Delivered to Trustee. In any case where several matters are required to be certified by, or covered by an opinion of, any specified Person, it is not necessary that all such matters be certified by, or covered by the opinion of, only one such Person, or that they be so certified or covered by only one document, but one such Person may certify or give an opinion with respect to some matters and one or more other such Persons as to the other matters, and any such Person may certify or give an opinion as to such matters in one or several documents.

Any certificate or opinion of an officer of the Company may be based, insofar as it relates to legal matters, upon a certificate or opinion of, or representations by, legal counsel, unless such officer knows that any such certificate, opinion, or representation is erroneous. Any opinion of counsel for the Company may be based, insofar as it relates to factual matters, upon a certificate or opinion of, or representations by, an officer or officers of the Company, unless such counsel knows that any such certificate, opinion, or representation is erroneous.

Where any Person is required to make, give, or execute two or more applications, requests, consents, certificates, statements, opinions, or other instruments under this Indenture, such instruments may, but need not, be consolidated and form a single instrument.

Section 1.04 Acts of Securityholders.

(a) Any request, demand, authorization, direction, notice, consent, waiver, or other action provided by this Indenture to be given or taken by Securityholders may be embodied in and evidenced by one or more instruments of substantially similar tenor signed by such Securityholders in person or by an agent duly appointed in writing; and, except as herein otherwise expressly provided, such action shall become effective when such instrument or instruments are delivered to the Trustee and (if expressly required by the applicable terms of this Indenture) to the Company. If any Securities are denominated in coin or currency other than that of the United States, then for the purposes of determining whether the Holders of the requisite principal amount of Securities have taken any action as herein described, the principal amount of such Securities shall be deemed to be that amount of United States dollars that could be obtained for such principal amount on the basis of the spot rate of exchange into United States dollars for the currency in which such Securities are denominated (as evidenced to the Trustee by a certificate provided by a financial institution, selected by the Company, that maintains an active trade in the currency in question, acting as conversion agent) as of the date the taking of such action by the Holders of such requisite principal amount is evidenced to the Trustee as provided in the immediately preceding sentence. Such instrument or instruments (and the action embodied therein and evidenced thereby) are herein sometimes referred to as the "Act" of the Securityholders signing such instrument or instruments. Proof of execution of any such instrument or of a writing appointing any such agent shall be sufficient for any purpose of this Indenture and (subject to Section 6.01) conclusive in favor of the Trustee and the Company, if made in the manner provided in this Section.

(b) The fact and date of the execution by any Person of any such instrument or writing may be proved by the affidavit of a witness to such execution or by the certificate of any notary public or other officer authorized by law to take acknowledgments of deeds, certifying that the individual signing such instrument or writing acknowledged to him the execution thereof. Where such execution is by an officer of a corporation or a member of a partnership, on behalf of such corporation or partnership, such certificate or affidavit shall also constitute sufficient proof of his authority. The fact and date of the execution of any such instrument or writing, or the authority of the person executing the same, may also be proved in any other manner which the Trustee deems sufficient.

(c) The ownership of Securities shall for all purposes be determined by reference to the Security Register, as such register shall exist as of the applicable date.

(d) If the Company shall solicit from the Holders any request, demand, authorization, direction, notice, consent, waiver or other action, the Company may, at its option, by Board Resolution, fix in advance a Record Date for the determination of Holders entitled to give such request, demand, authorization, direction, notice, consent, waiver or other action, but the Company shall have no obligation to do so. If such Record Date is fixed, such request, demand, authorization, direction, notice, consent, waiver or other action may be given before or after such Record Date, but only the Holders of record at the close of business on such Record Date shall be deemed to be Holders for the purpose of determining whether Holders of the requisite proportion of Securities Outstanding have authorized or agreed or consented to such request, demand, authorization, direction, notice, consent, waiver or other action, and for that purpose the Securities Outstanding shall be computed as of such Record Date; provided that no such authorization, agreement or consent by the Holders on such Record Date shall be deemed effective unless it shall become effective pursuant to the provisions of this Indenture not later than six months after such Record Date.

(e) Any request, demand, authorization, direction, notice, consent, waiver or other action by the Holder of any Security shall bind each subsequent Holder of such Security, and each Holder of any Security issued upon the registration of transfer thereof or in exchange therefor or in lieu thereof, with respect to anything done or suffered to be done by the Trustee or the Company in reliance upon such action, whether or not notation of such action is made upon such Security.

Section 1.05 Notices, etc., to Trustee and Company. Any request, order, authorization, direction, consent, waiver, or other action to be taken by the Trustee, the Company, or the Securityholders hereunder (including any Authentication Order), and any notice to be given to the Trustee or the Company with respect to any action taken or to be taken by the Trustee, the Company, or the Securityholders hereunder, shall be sufficient if made in writing and

(a) (if to be furnished or delivered to or filed with the Trustee by the Company or any Securityholder) delivered to the Trustee at its Corporate Trust Office, Attention: [], or

(b) (if to be furnished or delivered to the Company by the Trustee or any Securityholder, and except as otherwise provided in Section 5.01(d) and, in the case of a request for repayment, except as specified in the Security carrying the right to repayment) mailed to the Company, first-class postage prepaid, at its principal office (as specified in the first paragraph of this instrument), Attention: [], or at any other address hereafter furnished in writing by the Company to the Trustee.

Section 1.06 Notice To Securityholders; Waiver. Where this Indenture or any Security provides for notice to Securityholders of any event, such notice shall be sufficiently given (unless otherwise expressly provided herein or in such Security) if in writing and mailed, first-class postage prepaid, to each Securityholder affected by such event, at his or her address as it appears in the Security Register as of the applicable Record Date, not later than the latest date or earlier than the earliest date prescribed by this Indenture or such Security for the giving of such notice. In any case where notice to Securityholders is given by mail, neither the failure to mail such notice nor any defect in any notice so mailed to any particular Securityholder shall affect the sufficiency of such notice with respect to other Securityholders. Where this Indenture or any Security provides for notice in any manner, such notice may be waived in writing by the Person entitled to receive such notice, either before or after the event, and such waiver shall be the equivalent of such notice. Waivers of notice by Securityholders shall be filed with the Trustee, but such filing shall not be a condition precedent to the validity of any action taken in reliance upon such waiver.

In case, by reason of the suspension of regular mail service as a result of a strike, work stoppage or otherwise, it shall be impractical to mail notice of any event to any Securityholder when such notice is required to be given pursuant to any provision of this Indenture or the applicable Security, then any method of notification as shall be satisfactory to the Trustee and the Company shall be deemed to be sufficient for the giving of such notice.

Section 1.07 Conflict with Trust Indenture Act. If any provision hereof limits, qualifies or conflicts with another provision hereof which is required to be included in this Indenture by any of the provisions of the TIA, such required provision shall control.

Section 1.08 Effect of Headings and Table of Contents. The Article and Section headings herein and the Table of Contents hereof are for convenience only and shall not affect the construction of any provision of this Indenture.

Section 1.09 Successors and Assigns. All covenants and agreements in this Indenture by the Company shall bind its successors and assigns, whether so expressed or not.

Section 1.10 Separability Clause. 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 1.11 Benefits of Indenture. Nothing in this Indenture or in any Securities, express or implied, shall give to any Person, other than the parties hereto, their successors hereunder, the Authenticating Agent, the Security Registrar, any Paying Agent, and the Holders of Securities (or such of them as may be affected thereby), any benefit or any legal or equitable right, remedy or claim under this Indenture.

Section 1.12 Governing Law. This Indenture shall be governed by and construed in accordance with the laws of the State of New York.

Section 1.13 Counterparts. This instrument may be executed in any number of counterparts, each of which when so executed shall be deemed to be an original, but all of which shall together constitute but one and the same instrument.

Section 1.14 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 with respect to the Securities of any series it is necessary to convert the sum due in respect of the principal, premium, if any, or interest, if any, payable with respect to such Securities into a currency in which a judgment can be rendered (the “**Judgment Currency**”), the rate of exchange from the currency in which payments under such Securities is payable (the “**Required Currency**”) into the Judgment Currency shall be the highest bid quotation (assuming European-style quotation - *i.e.*, Required Currency per Judgment Currency) received by the Company from three recognized foreign exchange dealers in the City of New York for the purchase of the aggregate amount of the judgment (as denominated in the Judgment Currency) on the New York Business Day preceding the date on which a final unappealable judgment is rendered, for settlement on such payment date, and at which the applicable dealer timely commits to execute a contract, and (b) the Company's obligations under this Indenture to make payments in the Required Currency (i) shall not be discharged or satisfied by any tender, or by any recovery pursuant to any judgment (whether or not entered in accordance with the preceding clause (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 judgment creditor 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.

Section 1.15 Legal Holidays. In any case where any Interest Payment Date, Redemption Date, Repayment Date or Maturity of any Security shall not be a New York Business Day at any Place of Payment, then (notwithstanding any other provision of this Indenture or of the Securities) payment of interest or principal (and premium, if any) need not be made at such Place of Payment on such date, but may be made on the next succeeding Business Day at such Place of Payment with the same force and effect as if made on the Interest Payment Date, Redemption Date, Repayment Date or at Maturity, *provided that no interest shall accrue* for the period from and after such Interest Payment Date, Redemption Date, Repayment Date or Maturity, as the case may be.

ARTICLE II SECURITY FORMS

Section 2.01 Forms Generally. The Securities of each series shall have such appropriate insertions, omissions, substitutions and other variations as are required or permitted by this Indenture and may have such letters, numbers or other marks of identification and such legends or endorsements placed thereon, as may be required to comply with the rules of any securities exchange, or as may, consistently herewith, be determined by the officers executing such Securities, as evidenced by their execution of the Securities. Any portion of the text of any Security may be set forth on the reverse thereof, with an appropriate reference thereto on the face of the Security.

The definitive Securities, if any, shall be printed, lithographed or engraved or produced by any combination of these methods on steel engraved borders or may be produced in any other manner permitted by the rules of any securities exchange, all as determined by the officers executing such Securities, as evidenced by their execution of such Securities.

Section 2.02 Forms of Securities. Each Security shall be in one of the forms approved from time to time by or pursuant to any Board Resolution, or established in one or more indentures supplemental hereto. Prior to the delivery to the Trustee for authentication of any Security in any form approved by or pursuant to a Board Resolution, the Company shall deliver to the Trustee a copy of such Board Resolution, together with a true and correct copy of the form of Security which has been approved thereby, or, if a Board Resolution authorizes a specific officer or officers to approve a form of Security, together with a certificate of such officer or officers approving the form of Security attached thereto, *provided, however*, that with respect to all Securities issued pursuant to the same Board Resolution, the required copy of such Board Resolution, together with the appropriate attachment, need be delivered only once. Any form of Security approved by or pursuant to a Board Resolution must be acceptable as to form to the Trustee, such acceptance to be evidenced by the Trustee's authentication of Securities in that form or by a certificate signed by a Responsible Officer of the Trustee and delivered to the Company.

Section 2.03 Securities in Global Form. If Securities of a series are issuable in whole or in part in global form, the global security representing such Securities may provide that it shall represent the aggregate amount of Outstanding Securities from time to time endorsed thereon and may also provide that the aggregate amount of Outstanding Securities represented thereby may from time to time be reduced to reflect exchanges or increased to reflect the issuance of additional Securities. Any endorsement of a Security in global form to reflect the amount (or any increase or decrease in the amount) of Outstanding Securities represented thereby shall be made in such manner and by such Person or Persons as shall be specified therein or in the Authentication Order delivered to the Trustee pursuant to Section 3.03 hereof.

Section 2.04 Form of Trustee's Certificate of Authentication. The form of Trustee's Certificate of Authentication for any Security issued pursuant to this Indenture shall be substantially as follows:

TRUSTEE'S CERTIFICATE OF AUTHENTICATION

This is one of the Securities of the series designated therein referred to in the within-mentioned Indenture.

[], as Trustee,

By:

Authorized Officer:

ARTICLE III THE SECURITIES

Section 3.01 General Title; General Limitations; Issuable in Series; Terms of Particular Series.

(a) The aggregate principal amount of Securities that may be authenticated, delivered, and Outstanding at any time under this Indenture is not limited.

(b) The Securities may be issued in one or more series in such aggregate principal amount as may from time to time be authorized by the Board of Directors. All Securities of a series issued under this Indenture shall in all respects be equally and ratably entitled to the benefits hereof, without preference, priority, or distinction on account of the actual time of the authentication and delivery or Scheduled Maturity Date thereof.

(c) Each series of Securities shall be created either by or pursuant to one or more Board Resolutions, by an Officers' Certificate or by one or more indentures supplemental hereto. Any such Board Resolution or supplemental indenture (or, in the case of a series of Securities created pursuant to a Board Resolution, any officer or officers authorized by such Board Resolution) shall establish the terms of any such series of Securities, including the following (as and to such extent as may be applicable):

(1) the title of such series;

(2) the limit, if any, upon the aggregate principal amount or issue price of the Securities of such series;

(3) the issue date or issue dates of the Securities of such series;

(4) the Scheduled Maturity Date of the Securities of such series;

(5) the place or places where the principal, premium, if any, interest, if any, and additional amounts, if any, payable with respect to the Securities of such series shall be payable;

(6) whether the Securities of such series will be issued at par or at a premium over or a discount from their face amount;

(7) the rate or rates (which may be fixed or variable) at which the Securities of such series shall bear interest, if any, and, if applicable, the method by which such rate or rates may be determined;

(8) the date or dates (or the method by which such date or dates may be determined) from which interest, if any, shall accrue, and the Interest Payment Dates on which such interest shall be payable;

(9) the rights, if any, to defer payments of interest on the Securities by extending the interest payment periods and the duration of such extension;

(10) the period or periods within which, the Redemption Price(s) or Repayment Price(s) at which, and any other terms and conditions upon which the Securities of such series may be redeemed or repaid, in whole or in part, by the Company;

(11) the obligation, if any, of the Company to redeem, repay, or purchase any of the Securities of such series pursuant to any sinking fund, mandatory redemption, purchase obligation, or analogous provision at the option of a Holder thereof, and the period or periods within which, the Redemption Price(s) or Repayment Price(s) or other price or prices at which, and any other terms and conditions upon which the Securities of such series shall be redeemed, repaid, or purchased, in whole or in part, pursuant to such obligation;

(12) the issuance of the Securities of such series in whole or in part in global form and, if so, the identity of the Depositary for such global security and the terms and conditions, if any, upon which interests in the Securities represented by such global security may be exchanged, in whole or in part, for the individual Securities represented thereby (if other than as provided in Section 3.05);

(13) whether such securities are subordinated securities and if so, the provisions for such subordination;

(14) the denominations in which the Securities of such series will be issued (which may be any denomination as set forth in the terms of such Securities) if other than U.S. \$1,000 or an integral multiple thereof;

(15) whether and under what circumstances additional amounts on the Securities of such series shall be payable in respect of any taxes, assessments, or other governmental charges withheld or deducted and, if so, whether the Company will have the option to redeem such Securities rather than pay such additional amounts;

(16) the basis upon which interest shall be calculated;

(17) if the Securities of such series are to be issuable in definitive form (whether upon original issue or upon exchange of a temporary Security for a definitive Security of such series) only upon receipt of certain certificates or other documents or upon satisfaction of other conditions, then the form and terms of such certificates, documents, and/or conditions;

(18) the exchange or conversion of the Securities of that series, whether or not at the option of the Holders thereof, for or into new Securities of a different series or for or into any other securities which may include shares of Capital Stock of the Company or any Subsidiary of the Company or securities directly or indirectly convertible into or exchangeable for any such shares or securities of entities unaffiliated with the Company or any Subsidiary of the Company;

(19) if other than U.S. dollars, the foreign or composite currency or currencies (each such currency a “**Specified Currency**”) in which the Securities of such series shall be denominated and in which payments of principal, premium, if any, interest, if any, or additional amounts, if any, payable with respect to such Securities shall or may be payable;

(20) if the principal, premium, if any, interest, if any, or additional amounts, if any, payable with respect to the Securities of such series are to be payable in any currency other than that in which the Securities are stated to be payable, whether at the election of the Company or of a Holder thereof, the period or periods within which, and the terms and conditions upon which, such election may be made;

(21) if the amount of any payment of principal, premium, if any, interest, if any, or other sum payable with respect to the Securities of such series may be determined by reference to the relative value of one or more Specified Currencies, commodities, securities, or instruments, the level of one or more financial or non-financial indices, or any other designated factors or formulas, the manner in which such amounts shall be determined;

(22) the exchange of Securities of such series, at the option of the Holders thereof, for other Securities of the same series of the same aggregate principal amount of a different authorized kind or different authorized denomination or denominations, or both;

(23) the appointment by the Trustee of an Authenticating Agent in one or more places other than the Corporate Trust Office of the Trustee, with power to act on behalf of the Trustee, and subject to its direction, in the authentication and delivery of the Securities of such series;

(24) any trustees, depositaries, paying agents, transfer agents, exchange agents, conversion agents, registrars, or other agents with respect to the Securities of such series if other than the Trustee, Paying Agent and Security Registrar named herein;

(25) the portion of the principal amount of Securities of such series, if other than the principal amount thereof, that shall be payable upon declaration of acceleration of the Maturity thereof pursuant to Section 5.02 or provable in bankruptcy pursuant to Section 5.04;

(26) any Event of Default with respect to the Securities of such series, if not set forth herein, or any modification of any Event of Default set forth herein with respect to such series;

(27) any covenant solely for the benefit of the Securities of such series;

(28) the inapplicability of Section 4.02 and Section 4.03 of this Indenture to the Securities of such series and if Section 4.03 is applicable, the covenants subject to Covenant Defeasance under Section 4.03; and

(29) any other terms of the securities of such series (which terms shall not be inconsistent with the provisions of this Indenture, but which may modify or delete any provision of this Indenture insofar as it applies to such series).

If all of the Securities issuable by or pursuant to any Board Resolution are not to be issued at one time, it shall not be necessary to deliver the Officers' Certificate and Opinion of Counsel required by Section 3.03 hereof at the time of issuance of each such Security, but such Officers' Certificate and Opinion of Counsel shall be delivered at or before the time of issuance of the first such Security.

If any series of Securities shall be established by action taken pursuant to any Board Resolution, the execution by the officer or officers authorized by such Board Resolution of an Authentication Order (as defined in Section 3.03 below) with respect to the first Security of such series to be issued, and the delivery of such Authentication Order to the Trustee at or before the time of issuance of the first Security of such series, shall constitute a sufficient record of such action. Except as otherwise permitted by Section 3.03, if all of the Securities of any such series are not to be issued at one time, the Company shall deliver an Authentication Order with respect to each subsequent issuance of Securities of such series, but such Authentication Orders may be executed by any authorized officer or officers of the Company, whether or not such officer or officers would have been authorized to establish such series pursuant to the aforementioned Board Resolution.

Unless otherwise provided by or pursuant to the Board Resolution or supplemental indenture creating such series, (i) a series may be reopened for issuances of additional Securities of such series, and (ii) all Securities of the same series shall be substantially identical, except for the initial Interest Payment Date, issue price, initial interest accrual date and the amount of the first interest payment.

The form of the Securities of each series shall be established in a supplemental indenture or by or pursuant to the Board Resolution creating such series. The Securities of each series shall be distinguished from the Securities of each other series in such manner as the Board of Directors or its authorized representative or representatives may determine.

Unless otherwise provided with respect to Securities of a particular series, the Securities of any series may only be issuable in registered form, without coupons.

Section 3.02 Denominations and Currency. The Securities of each series shall be issuable in such denominations and currency as shall be provided in the provisions of this Indenture or by or pursuant to the Board Resolution or supplemental indenture creating such series. In the absence of any such provisions with respect to the Securities of any series, the Securities of that series shall be issuable only in fully registered form in denominations of U.S. \$1,000 and any integral multiple thereof.

Section 3.03 Execution, Authentication and Delivery, and Dating. The Securities shall be executed on behalf of the Company by the president, any vice president, the treasurer or any assistant treasurer and attested by the secretary or any one of its assistant secretaries, under its corporate seal. The signature of any of these officers on the Securities may be manual or facsimile. The seal of the Company, if set forth thereon, may be in the form of a facsimile thereof and may be impressed, affixed, imprinted, or otherwise reproduced on the Securities. Typographical and other minor errors or defects in any such reproduction of the seal or any such signature shall not affect the validity or enforceability of any Security that has been duly authenticated and delivered by the Trustee.

Unless otherwise provided in the form of Security for any series, all Securities shall be dated the date of their authentication.

Securities bearing the manual or facsimile signatures of individuals who were at any time the proper officers of the Company shall bind the Company, notwithstanding that such individuals or any of them have ceased to hold such offices prior to the authentication and delivery of such Securities or did not hold such offices at the date of such Securities.

At any time and from time to time after the execution and delivery of this Indenture, the Company may deliver Securities to the Trustee for authentication, together with a Company Order for authentication and delivery (such Order an “ **Authentication Order** ”) with respect to such Securities, and the Trustee shall, upon receipt of such Authentication Order, in accordance with procedures acceptable to the Trustee set forth in the Authentication Order, and subject to the provisions hereof, authenticate and deliver such Securities to such recipients as may be specified from time to time pursuant to such Authentication Order. The material terms of such Securities shall be determinable by reference to such Authentication Order and procedures. If provided for in such procedures, such Authentication Order may authorize authentication and delivery of such Securities pursuant to oral instructions from the Company or its duly authorized agent, which instructions shall be promptly confirmed in writing. In authenticating such Securities and accepting the additional responsibilities under this Indenture in relation to such Securities, the Trustee shall be entitled to receive, and (subject to the provisions of Section 6.01 hereof) shall be fully protected in relying upon:

- (1) an executed supplemental indenture, if any;
- (2) an Officers' Certificate, certifying as to the authorized form or forms and terms of such Securities; and
- (3) an Opinion of Counsel, stating that:

(a) the form or forms and terms of such Securities have been established by and in conformity with the provisions of this Indenture; *provided* that if all such Securities are not to be issued at the same time, such Opinion of Counsel may state that such terms will be established in conformity with the provisions of this Indenture, subject to any conditions specified in such Opinion of Counsel; and

(b) such Securities, when authenticated and delivered by the Trustee and issued by the Company in the manner and subject to any conditions specified in such Opinion of Counsel, will constitute valid and legally binding obligations of the Company, enforceable in accordance with their terms, subject to bankruptcy, insolvency, moratorium, reorganization, and other laws of general applicability relating to or affecting the enforcement of creditors' rights and to general principles of equity;

provided, however, that if all Securities issuable by or pursuant to a Board Resolution or supplemental indenture are not to be originally issued at one time, it shall not be necessary to deliver the Officers' Certificate or Opinion of Counsel otherwise required pursuant to this paragraph at or prior to the time of authentication of each such Security if such documents are delivered at or prior to the time of authentication upon original issuance of the first such Security to be issued. After the original issuance of the first such Security to be issued, any separate request by the Company that the Trustee authenticate such Securities for original issuance will be deemed to be a certification by the Company that it is in compliance with all conditions precedent provided for in this Indenture relating to the authentication and delivery of such Securities.

The Trustee shall not be required to authenticate such Securities if the issue thereof will adversely affect the Trustee's own rights, duties, or immunities under the Securities and this Indenture.

If the Company shall establish pursuant to Section 3.01 that Securities of a series may be issued in whole or in part in global form, then the Company shall execute, and the Trustee shall (in accordance with this Section 3.03 and the Authentication Order with respect to such series) authenticate and deliver, one or more Securities in global form that (i) shall represent and shall be denominated in an aggregate amount equal to the aggregate principal amount of the Outstanding Securities of such series to be represented by such one or more Securities in global form, (ii) shall be registered, in the name of the Depository for such Security or Securities in global form, or in the name of a nominee of such Depository, (iii) shall be delivered to such Depository or pursuant to such Depository's instruction, and (iv) shall bear a legend substantially as follows: “Unless and until it is exchanged in whole or in part for Securities in certificated form, this Security may not be transferred except as a whole by the Depository to a nominee of the Depository, or 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 successor Depository.” Each Depository designated pursuant to Section 3.01 for a Security in global form must, at the time of its designation and at all times while it serves as Depository, be a clearing agency registered under the Securities Exchange Act of 1934 and any other applicable statute or regulation.

No Security shall be entitled to any benefit under this Indenture or be valid or obligatory for any purpose unless there appears on such Security a certificate of authentication substantially in the form provided for herein executed by the Trustee by manual signature of an authorized officer, and such certificate upon any Security shall be conclusive evidence, and the only evidence, that such Security has been duly authenticated and delivered hereunder.

Section 3.04 Temporary Securities. Pending the preparation of definitive Securities of any series, the Company may execute, and, upon receipt of the documents required by Sections 2.02, 3.01 and 3.03 hereof, together with an Authentication Order, the Trustee shall authenticate and deliver, temporary Securities of such series that are printed, lithographed, typewritten, mimeographed, or otherwise produced, in any authorized denomination, substantially of the tenor of the definitive Securities in lieu of which they are issued in registered form, without coupons, and with such appropriate insertions, omissions, substitutions, and other variations as the officers executing such Securities may determine, as evidenced by their execution of such Securities. In the case of Securities of any series for which a temporary Security may be issued in global form, such temporary global security shall represent all of the Outstanding Securities of such series and tenor.

Except in the case of temporary Securities in global form, which shall be exchanged in accordance with the provisions thereof, if temporary Securities of any series are issued, the Company will cause definitive Securities of such series to be prepared without unreasonable delay. After the preparation of definitive Securities, the temporary Securities of such series shall be exchangeable, at the Corporate Trust Office of the Trustee, or at such other office or agency as may be maintained by the Company in a Place of Payment pursuant to Section 10.02 hereof, for definitive Securities of such series having identical terms and provisions, upon surrender of the temporary Securities of such series, at the Company's own expense and without charge to the Holder; and upon surrender for cancellation of any one or more temporary Securities of any series, the Company shall execute and the Trustee shall authenticate and deliver in exchange therefor a like principal amount of definitive Securities of such series in authorized denominations containing identical terms and provisions. Unless otherwise specified as contemplated by Section 3.01 with respect to a temporary Security in global form, until so exchanged, the temporary Securities of such series shall in all respects be entitled to the same benefits under this Indenture as definitive Securities of such series.

Section 3.05 Registration, Transfer and Exchange. With respect to the Securities of each series, the Trustee shall keep a register (herein sometimes referred to as the "**Security Register**") which shall provide for the registration of Securities of such series, and for transfers of Securities of such series, in accordance with information to be provided to the Trustee by the Company, subject to such reasonable regulations as the Trustee may prescribe. Such register shall be in written form or in any other form capable of being converted into written form within a reasonable time. At all reasonable times the information contained in such register or registers shall be available for inspection at the Corporate Trust Office of the Trustee or at such other office or agency to be maintained by the Company pursuant to Section 10.02 hereof.

Upon due presentation for registration of transfer of any Security of any series at the Corporate Trust Office of the Trustee or at any other office or agency maintained by the Company with respect to that series pursuant to Section 10.02 hereof, the Company shall execute, and the Trustee shall authenticate and deliver, in the name of the designated transferee or transferees, one or more new Securities of such series of any authorized denominations, of like aggregate principal amount, tenor, terms and Scheduled Maturity Date.

Any other provision of this Section 3.05 notwithstanding, unless and until it is exchanged in whole or in part for the individual Securities represented thereby, in definitive form, a Security in global form representing all or a portion of the Securities of a series may not be transferred except as a whole by the Depositary for such series to a nominee of such Depositary, or by a nominee of such Depositary to such Depositary or another nominee of such Depositary, or by such Depositary or any such nominee to a successor Depositary for such series or a nominee of such successor Depositary.

At the option of the Holder, Securities of any series may be exchanged for other Securities of such series of any authorized denominations, of like aggregate principal amount, tenor, terms and Scheduled Maturity Date, upon surrender of the Securities to be exchanged at such office or agency. Whenever any Securities are so surrendered for exchange, the Company shall execute, and the Trustee shall authenticate and deliver, the Securities which the Securityholder making the exchange is entitled to receive.

If at any time the Depositary for the Securities of a series represented by one or more Securities in global form notifies the Company that it is unwilling or unable to continue as Depositary for the Securities of such series, or if at any time the Depositary for the Securities of such series shall no longer be eligible under Section 3.03 hereof, the Company, by Company Order, shall appoint a successor Depositary with respect to the Securities of such series. If a successor Depositary for the Securities of such series is not appointed by the Company within 90 days after the Company receives such notice or becomes aware of such ineligibility, the Company's election pursuant to Section 3.01 that such Securities be represented by one or more Securities in global form shall no longer be effective with respect to the Securities of such series and the Company will execute, and the Trustee, upon receipt of an Authentication Order for the authentication and delivery of definitive Securities of such series, will authenticate and deliver Securities of such series in definitive form, in authorized denominations, in an aggregate principal amount, and of like terms and tenor, equal to the principal amount of the Security or Securities in global form representing such series, in exchange for such Security or Securities in global form.

The Company may at any time and in its sole discretion and subject to the procedures of the Depositary determine that individual Securities of any series issued in global form shall no longer be represented by such Security or Securities in global form. In such event the Company will execute, and the Trustee, upon receipt of an Authentication Order for the authentication and delivery of definitive Securities of such series and of the same terms and tenor, will authenticate and deliver Securities of such series in definitive form, in authorized denominations, and in aggregate principal amount equal to the principal amount of the Security or Securities in global form representing such series in exchange for such Security or Securities in global form.

If specified by the Company pursuant to Section 3.01 with respect to a series of Securities issued in global form, the Depositary for such series of Securities may surrender a Security in global form for such series of Securities in exchange in whole or in part for Securities of such series in definitive form and of like terms and tenor on such terms as are acceptable to the Company and such Depositary. Thereupon, the Company shall execute, and the Trustee upon receipt of an Authentication Order for the authentication and delivery of definitive Securities of such series, shall authenticate and deliver, without service charge:

(a) to each Person specified by such Depositary, a new definitive Security or Securities of the same series and of the same tenor and terms, in authorized denominations, in aggregate principal amount equal to and in exchange for such Person's beneficial interest in the Security in global form; and

(b) to such Depositary, a new Security in global form in a denomination equal to the difference, if any, between the principal amount of the surrendered Security in global form and the aggregate principal amount of the definitive Securities delivered to Holders pursuant to clause (a) above.

Upon the exchange of a Security in global form for Securities in definitive form, such Security in global form shall be canceled by the Trustee or an agent of the Company or the Trustee. Securities issued in definitive form in exchange for a Security in global form pursuant to this Section 3.05 shall be registered in such names and in such authorized denominations as the Depositary for such Security in global form, pursuant to instructions from its direct or indirect participants or otherwise, shall instruct the Trustee or an agent of the Company or the Trustee in writing. The Trustee or such agent shall deliver such Securities to or as directed by the Persons in whose names such Securities are so registered or to the Depositary.

Whenever any securities are so surrendered for exchange, the Company shall execute, and the Trustee shall authenticate and deliver, the Securities which the Holder making the exchange is entitled to receive.

All Securities issued upon any registration of 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 registration of transfer, exchange, redemption or payment 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 Security Registrar duly executed by the Holder thereof or his attorney duly authorized in writing.

Unless otherwise provided in the Security to be transferred or exchanged, no service charge shall be imposed for any registration of transfer or exchange of Securities, but the Company may (unless otherwise provided in such Security) require payment of a sum sufficient to cover any tax or other governmental charge that may be imposed in connection with any transfer or exchange of Securities, other than exchanges pursuant to Section 3.04, 3.06, 9.06 and 11.07 hereof not involving any transfer.

The Company shall not be required to (i) issue, register the transfer of, or exchange any Security of any series during a period beginning at the opening of business 15 days before the day of the mailing of a notice of redemption of Securities of such series selected for redemption under Section 11.03 and ending at the close of business on the date of such mailing, or (ii) register the transfer of or exchange any Security so selected for redemption in whole or in part, except, in the case of any Security to be redeemed in part, the portion thereof not to be redeemed.

Section 3.06 Mutilated, Destroyed, Lost and Stolen Securities. If (i) any mutilated Security is surrendered to the Trustee, or the Company and the Trustee receive evidence to their satisfaction of the destruction, loss or theft of any Security, and (ii) there is delivered to the Company and the Trustee such security or indemnity as may be required by them to save each of them harmless, then, in the absence of notice to the Company or the Trustee that such Security has been acquired by a bona fide purchaser, the Company may in its discretion execute and upon request of the Company the Trustee shall authenticate and deliver, in exchange for or in lieu of any such mutilated, destroyed, lost or stolen Security, a new Security of like tenor, terms, series, Scheduled Maturity Date, and principal amount, 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.

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 governmental 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 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 the same 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 3.07 Payment of Interest; Interest Rights Preserved. Interest on any Security which is payable and is punctually paid or duly provided for on any Interest Payment Date shall, if so provided in such Security, be paid to the Person in whose name that Security (or one or more Predecessor Securities) is registered at the close of business on the applicable Record Date, notwithstanding any transfer or exchange of such Security subsequent to such Record Date and prior to such Interest Payment Date. (unless such Interest Payment Date is also the date of Maturity of such Security).

Any interest on any Security which is payable, but is not punctually paid or duly provided for, on any Interest Payment Date (herein called “**Defaulted Interest**”) shall forthwith cease to be payable to the registered Holder on the applicable Record Date by virtue of his having been such Holder; and, except as hereinafter provided, such Defaulted Interest may be paid by the Company, at its election in each case, as provided in clause (a) or clause (b) below:

(a) The Company may elect to make payment of any Defaulted Interest to the Persons in whose names any such Securities (or their respective Predecessor Securities) are registered at the close of business on a Special Record Date for the payment of such Defaulted Interest, which shall be fixed in the following manner. The Company shall notify the Trustee in writing of the amount of Defaulted Interest proposed to be paid on each such Security and the date of the proposed payment, and at the same time the Company shall deposit with the Trustee an amount of money equal to the aggregate amount proposed to be paid in respect of such Defaulted Interest or shall make arrangements satisfactory to the Trustee for such deposit prior to the date of the proposed payment, such money when deposited to be held in trust for the benefit of the Persons entitled to such Defaulted Interest as in this clause provided. Thereupon the Trustee shall fix a Special Record Date for the payment of such Defaulted Interest which shall be not more than 15 nor less than 10 days prior to the date of the proposed payment and not less than 10 days after the receipt by the Trustee of the notice of the proposed payment. The Trustee shall promptly notify the Company of such Special Record Date and, in the name and at the expense of the Company, shall cause notice of the proposed payment of such Defaulted Interest and the Special Record Date therefor to be mailed, first-class postage prepaid, to the Holder of each such Security at his address as it appears in the Security Register, not less than 10 days prior to such Special Record Date. Notice of the proposed payment of such Defaulted Interest and the Special Record Date therefor having been mailed as aforesaid, such Defaulted Interest shall be paid to the Persons in whose names such Securities (or their respective Predecessor Securities) are registered at the close of business on such Special Record Date and shall no longer be payable pursuant to the following clause (b).

(b) The Company may make payment of any Defaulted Interest in any other lawful manner not inconsistent with the requirements of any securities exchange on which such Securities may be listed, and upon such notice as may be required by such exchange, if, after notice given by the Company to the Trustee of the proposed payment pursuant to this clause, such manner of payment shall be deemed practicable by the Trustee.

Interest on Securities of any series that bear interest may be paid by mailing a check to the address of the Person entitled thereto at such address as shall appear in the Securities Register for such series or by such other means as may be specified in the form of such Security.

Subject to the foregoing provisions of this Section 3.07 and the provisions of Section 3.05 hereof, each Security delivered under this Indenture upon registration of transfer of or in exchange for or in lieu of any other Security shall carry the rights to interest accrued and unpaid, and to accrue, which were carried by such other Security.

Section 3.08 Persons Deemed Owners. Prior to due presentment of a Security for registration of transfer, the Company, the Trustee, and any agent of the Company or the Trustee may treat the Person in whose name any Security is registered on the applicable Record Date(s) as the owner of such Security for the purpose of receiving payment of principal, premium, if any, interest, if any (subject to Sections 3.05 and 3.07 hereof), and any additional amounts payable with respect to such Security, and for all other purposes whatsoever, whether or not such Security be overdue, and neither the Company, the Trustee, nor any agent of the Company or the Trustee shall be affected by notice to the contrary.

None of the Company, the Trustee, any Authenticating Agent, any Paying Agent, the Security Registrar, or any Co-Security Registrar will have any responsibility or liability for any aspect of the records relating to or payments made on account of beneficial ownership interests of a Security in global form or for maintaining, supervising or reviewing any records relating to such beneficial ownership interests and each of them may act or refrain from acting without liability on any information relating to such records provided by the Depositary.

Section 3.09 Cancellation. All Securities surrendered for payment, redemption, registration of transfer, exchange, or credit against a sinking or analogous fund shall, if surrendered to any Person other than the Trustee, be delivered to the Trustee and, if not already canceled, shall be promptly canceled by it. The Company may at any time deliver to the Trustee for cancellation any Securities previously authenticated and delivered hereunder which the Company may have acquired in any manner whatsoever, and all Securities so delivered shall be promptly canceled by the Trustee. Acquisition of such Securities by the Company shall not operate as a redemption or satisfaction of the indebtedness represented by such Securities unless and until the same are delivered to the Trustee for cancellation. No Security shall be authenticated in lieu of or in exchange for any Securities canceled as provided in this Section, except as expressly permitted by this Indenture. The Trustee shall dispose of all canceled Securities in accordance with its customary procedures and deliver a certificate of such disposition to the Company.

Section 3.10 Computation of Interest. Unless otherwise provided as contemplated in Section 3.01, interest on the Securities shall be calculated on the basis of a 360-day year of twelve 30-day months.

ARTICLE IV
SATISFACTION AND DISCHARGE

Section 4.01 Satisfaction and Discharge of Indenture. This Indenture shall cease to be of further effect with respect to any series of Securities (except as to any surviving rights of conversion or transfer or exchange of Securities of such series expressly provided for herein or in the form of Security for such series and obligations described as surviving below), and the Trustee, on demand of and at the expense of the Company, shall execute proper instruments acknowledging satisfaction and discharge of this Indenture as to such series, when

(a) either

(i) all Securities of that series theretofore authenticated and delivered (other than (A) Securities of such series which have been destroyed, lost, or stolen and which have been replaced or paid as provided in Section 3.06, and (B) Securities of such series for whose payment money has theretofore been deposited in trust or segregated and held in trust by the Company and thereafter repaid to the Company or discharged from such trust, as provided in Section 4.07) have been delivered to the Trustee canceled or for cancellation; or

(ii) all such Securities of that series not theretofore delivered to the Trustee canceled or for cancellation

(A) have become due and payable, or

(B) will, in accordance with their Scheduled Maturity Date, become due and payable within one year, or

(C) 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, in any of the cases described in subparagraphs (A), (B), or (C) above, the Company has irrevocably deposited or caused to be deposited with the Trustee, as trust funds in trust for the purpose, (x) an amount in money sufficient, (y) U.S. Government Obligations or Equivalent Government Securities which through the payment of interest and principal in respect thereof in accordance with their terms will provide, not later than one day before the due date of any payment, money sufficient, or (z) a combination of (x) and (y) sufficient, in the opinion with respect to (y) and (z) of a nationally recognized firm of independent public accountants expressed in a written certification thereof delivered to the Trustee, to pay and discharge the entire indebtedness on such Securities with respect to principal, premium, if any, and interest, if any, to the date of such deposit (in the case of Securities which have become due and payable), or to the Scheduled Maturity Date or Redemption Date, as the case may be; provided, however, that if such U.S. Government Obligations or Equivalent Government Securities are callable or redeemable at the option of the issuer thereof, the amount of such money, U.S. Government Obligations, and Equivalent Government Securities deposited with the Trustee must be sufficient to pay and discharge the entire indebtedness referred to above if such issuer elects to exercise such call or redemption provisions at any time prior to the Scheduled Maturity Date or Redemption Date, as the case may be, and the Company, but not the Trustee, shall be responsible for monitoring any such call or redemption provision; and

(b) the Company has paid or caused to be paid all other sums payable hereunder by the Company with respect to the Securities of such series; 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 with respect to the Securities of such series have been complied with.

Notwithstanding the satisfaction and discharge of this Indenture with respect to any series of Securities, the obligations of the Company under paragraph (a) of this Section 4.01 and its obligations to the Trustee with respect to that series under Section 6.07 shall survive, and the obligations of the Trustee under Sections 4.05, 4.07 and 10.03 shall survive.

Section 4.02 Discharge and Defeasance. The provisions of this Section and Section 4.04 (insofar as relating to this Section) shall apply to the Securities of each series unless specifically otherwise provided in a Board Resolution or indenture supplemental hereto provided pursuant to Section 3.01. In addition to discharge of this Indenture pursuant to Section 4.01, in the case of any series of Securities with respect to which the exact amount described in subparagraph (a) of Section 4.04 can be determined at the time of making the deposit referred to in such subparagraph (a), the Company shall be deemed to have paid and discharged the entire indebtedness on all the Securities of such a series as provided in this Section on and after the date the conditions set forth in Section 4.04 are satisfied, and the provisions of this Indenture with respect to the Securities of such series shall no longer be in effect (except as to (i) rights of registration of transfer and exchange of Securities of such series, (ii) substitution of mutilated, destroyed, lost or stolen Securities of such series, (iii) rights of Holders of Securities of such series to receive, solely from the trust fund described in subparagraph (a) of Section 4.04, payments of principal thereof, premium, if any, and interest, if any, thereon upon the original stated due dates or upon the Redemption Dates therefor (but not upon acceleration), and remaining rights of the Holders of Securities of such series to receive mandatory sinking fund payments, if any, (iv) the rights, obligations, duties and immunities of the Trustee hereunder, (v) this Section 4.02, Section 4.07, Section 10.02 and Section 10.03 and (vi) the rights of the Holders of Securities of such series as beneficiaries hereof with respect to the property so deposited with the Trustee payable to all or any of them) (hereinafter called “**Defeasance**”), and the Trustee at the cost and expense of the Company, shall execute proper instruments acknowledging the same.

Section 4.03 Covenant Defeasance. The provisions of this Section and Section 4.04 (insofar as relating to this Section) shall apply to the Securities of each series unless specifically otherwise provided in a Board Resolution or indenture supplemental hereto provided pursuant to Section 3.01. In the case of any series of Securities with respect to which the exact amount described in subparagraph (a) of Section 4.04 can be determined at the time of making the deposit referred to in such subparagraph (a), (i) the Company shall be released from its obligations under any covenants specified in or pursuant to Section 3.01 as being subject to Covenant Defeasance with respect to such series (except as to (a) rights of registration of transfer and exchange of Securities of such series and rights under Section 4.07, Section 10.02 and Section 10.03, (b) substitution of mutilated, destroyed, lost or stolen Securities of such series, (c) rights of Holders of Securities of such series to receive, from the Company pursuant to Section 10.01, payments of principal thereof and interest, if any, thereon upon the original stated due dates or upon the Redemption Dates therefor (but not upon acceleration), and remaining rights of the Holders of Securities of such series to receive mandatory sinking fund payments, if any, (d) the rights, obligations, duties and immunities of the Trustee hereunder and (e) the rights of the Holders of Securities of such series as beneficiaries hereof with respect to the property so deposited with the Trustee payable to all or any of them), and (ii) the occurrence of any event specified in Section 5.01(d) (with respect to any of the covenants specified in or pursuant to Section 3.01 as being subject to Covenant Defeasance with respect to such series) shall be deemed not to be or result in a default or an Event of Default, in each case with respect to the Outstanding Securities of such series as provided in this Section on and after the date the conditions set forth in Section 4.04 are satisfied (hereinafter called “**Covenant Defeasance**”), and the Trustee at the cost and expense of the Company, shall execute proper instruments acknowledging the same. For this purpose, such Covenant Defeasance means that the Company may omit to comply with and shall have no liability in respect of any term, condition or limitation set forth in any such covenant (to the extent so specified in the case of Section 5.01(d)), whether directly or indirectly by reason of any reference elsewhere herein to any such covenant or by reason of any reference in any such covenant to any other provision herein or in any other document, but the remainder of this Indenture and the Securities of such series shall be unaffected thereby.

Section 4.04 Conditions To Defeasance Or Covenant Defeasance. The following shall be the conditions to application of either Section 4.02 or Section 4.03 to the Outstanding Securities:

(a) with reference to Section 4.02 or Section 4.03, the Company has irrevocably deposited or caused to be irrevocably deposited with the Trustee as funds in trust, specifically pledged as security for, and dedicated solely to, the benefit of the Holders of Securities of such series (i) money in an amount, or (ii) U.S. Government Obligations or Equivalent Government Securities which through the payment of interest and principal in respect thereof in accordance with their terms will provide, not later than one day before the due date of any payment, money in an amount, or (iii) a combination of (i) and (ii), sufficient, in the opinion (with respect to (ii) and (iii)) 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 (including mandatory sinking fund payments) of, premium, if any, and interest on, the Outstanding Securities of such series on the dates such installments of interest, premium or principal are due, including upon redemption; provided, however, that if such U.S. Government Obligations and Equivalent Government Securities are callable or redeemable at the option of the issuer thereof, the amount of such money, U.S. Government Obligations, and/or Equivalent Government Securities deposited with the Trustee must be sufficient to pay and discharge the entire indebtedness referred to above if the issuer of any such U.S. Government Obligations or Equivalent Government Securities elects to exercise such call or redemption provisions at any time prior to the Scheduled Maturity Date or Redemption Date of such Securities, as the case may be. The Company, but not the Trustee, shall be responsible for monitoring any such call or redemption provision.

(b) in the case of Defeasance under Section 4.02, the Company has delivered to the Trustee an Opinion of Counsel based on the fact that (x) the Company has received from, or there has been published by, the Internal Revenue Service a ruling or (y) since the date hereof, there has been a change in the applicable United States federal income tax law, in either case to the effect that, and such opinion 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 amount 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;

(c) in the case of Covenant Defeasance under Section 4.03, the Company has delivered to the Trustee an Opinion of Counsel to the effect that, and such opinion 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 and Covenant Defeasance and will be subject to federal income tax on the same amount and in the same manner and at the same times, as would have been the case if such deposit and Covenant Defeasance had not occurred;

(d) no Event of Default or event which, with notice or lapse of time or both, would become an Event of Default with respect to the Securities of such series shall have occurred and be continuing on the date of such deposit, after giving effect to such deposit or, in the case of a Defeasance under Section 4.02, no Event of Default specified in Section 5.01(e) or Section 5.01(f) shall have occurred, at any time during the period ending on the 91st day after the date of such deposit or, if longer, ending on the day following the expiration of the longest preference period applicable to the Company in respect of such deposit (it being understood that this condition shall not be deemed satisfied until the expiration of such period);

(e) such Defeasance or Covenant Defeasance will not cause the Trustee to have a conflicting interest within the meaning of the TIA, assuming all Securities of a series were in default within the meaning of the TIA;

(f) such Defeasance or Covenant Defeasance will not result in a breach or violation of, or constitute a default under, any agreement or instrument to which the Company is a party or by which it is bound;

(g) such Defeasance or Covenant Defeasance will 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 the trust is registered under such Act or exempt from registration;

(h) if the Securities of such series are to be redeemed prior to their Stated Maturity Date (other than from mandatory sinking fund payments or analogous payments), notice of such redemption shall have been duly given pursuant to this Indenture or provision therefor satisfactory to the Trustee shall have been made; and

(i) the Company shall have delivered to the Trustee an Officers' Certificate and an Opinion of Counsel, each stating that all conditions precedent provided for herein relating to such Defeasance or Covenant Defeasance, as the case may be, have been complied with.

Section 4.05 Application of Trust Money; Excess Funds. All money and U.S. Government Obligations or Equivalent Government Securities (including the proceeds thereof) deposited with the Trustee pursuant to Section 4.01 or Section 4.04 hereof shall be held in trust and applied by it, in accordance with the provisions of this Indenture and of the series of Securities in respect of which it was deposited, to the payment, either directly or through any Paying Agent (including the Company acting as its own Paying Agent), as the Trustee may determine, to the Persons entitled thereto, of the principal, premium, if any, and interest, if any, for whose payment such money has been deposited with the Trustee; but such money need not be segregated from other funds except to the extent required by law.

The Company will pay and indemnify the Trustee against any tax, fee or other charge imposed on or assessed against the cash or U.S. Government Obligations or Equivalent Government Securities deposited pursuant to Section 4.01 or Section 4.04 hereof or the principal and interest received in respect thereof other than any such tax, fee or other charge which by law is for the account of the Holders of the Outstanding Securities.

Anything in this Article 4 to the contrary notwithstanding, the Trustee shall deliver or pay to the Company from time to time upon Company Request any money or U.S. Governmental Obligations or Equivalent Government Securities held by it as provided in Section 4.01 or Section 4.04 which, in the opinion of a nationally recognized investment bank, appraisal firm or firm of independent public accountants, expressed in a written certification thereof delivered to the Trustee, (which may be the opinion delivered under Section 4.01 or Section 4.04, as applicable), are in excess of the amount thereof that would then be required to be deposited to effect an equivalent satisfaction and discharge, Covenant Defeasance or Defeasance of the applicable series.

Section 4.06 Paying Agent to Repay Moneys Held. Upon the satisfaction and discharge of this Indenture, all moneys then held by any Paying Agent of the Securities (other than the Trustee) shall, upon demand of the Company, be repaid to it or paid to the Trustee, and thereupon such Paying Agent shall be released from all further liability with respect to such moneys.

Section 4.07 Return of Unclaimed Amounts. Any amounts deposited with or paid to the Trustee or any Paying Agent or then held by the Company, in trust for payment of the principal of, premium, if any, or interest, if any, on the Securities and not applied but remaining unclaimed by the Holders of such Securities for two years after the date upon which the principal of, premium, if any, or interest, if any, on such Securities, as the case may be, shall have become due and payable, shall be repaid to the Company by the Trustee on Company Request or (if then held by the Company) shall be discharged from such trust; and the Holder of any of such Securities shall thereafter look only to the Company for any payment which such Holder may be entitled to collect (until such time as such unclaimed amounts shall escheat, if at all, to the State of New York) and all liability of the Trustee or such Paying Agent with respect to such trust money, and all liability of the Company as trustee thereof, shall thereupon cease. Notwithstanding the foregoing, the Trustee or Paying Agent, before being required to make any such repayment, may at the expense of the Company cause to be published once a week for two successive weeks (in each case on any day of the week) in a newspaper printed in the English language and customarily published at least once a day at least five days in each calendar week and of general circulation in the Borough of Manhattan, in the City and State of New York, a notice that said amounts have not been so applied and that after a date named therein any unclaimed balance of said amounts then remaining will be promptly returned to the Company.

ARTICLE V ARTICLE V REMEDIES

Section 5.01 Events of Default. “**Event of Default**”, wherever used herein, means with respect to any series of Securities any one of the following events (whatever the reason for such Event of Default and whether it shall be voluntary or involuntary or be effected by operation of law or pursuant to any judgment, decree or order of any court or any order, rule or regulation of any administrative or governmental body), unless such event is either inapplicable to a particular series or it is specifically deleted or modified in the manner contemplated by Section 3.01:

(a) default in the payment of any interest on any Security of such 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 the principal amount of (or premium, if any, on) any Security of such series as and when the same shall become due, either at Maturity, upon redemption, by declaration, or otherwise; or

(c) default in the payment of any sinking or purchase fund or analogous obligation when the same becomes due by the terms of the Securities of such series and continuance of such default for a period of 30 days; or

(d) default in the performance or breach of any covenant or warranty of the Company in this Indenture in respect of the Securities of such series (other than a covenant or warranty in respect of the Securities of such series a default in the performance of which or the breach of which is elsewhere in this Section specifically dealt with), and continuance of such default or breach for a period of 60 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 at least 25% in the principal amount of the Outstanding Securities of such 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

(e) the entry of an order for relief against the Company under the Federal Bankruptcy Act by a court having jurisdiction in the premises or a decree or order by a court having jurisdiction in the premises adjudging the Company a bankrupt or insolvent under any other applicable Federal or State law, or the entry of a decree or order approving as properly filed a petition seeking reorganization, arrangement, adjustment or composition of or in respect of the Company under the Federal Bankruptcy Code or any other applicable Federal or State law, or appointing a receiver, liquidator, assignee, trustee, sequestrator (or other similar official) of the Company or of any substantial part of its property, or ordering the winding up or liquidation of its affairs, and the continuance of any such decree or order unstayed and in effect for a period of 90 consecutive days; or

(f) the consent by the Company to the institution of bankruptcy or insolvency proceedings against it, or the filing by it of a petition or answer or consent seeking reorganization or relief under the Federal Bankruptcy Code or any other applicable Federal or State law, or the consent by it to the filing of any such petition or to the appointment of a receiver, liquidator, assignee, trustee, sequestrator (or other similar official) of the Company or of any substantial part of its property, or the making by it of an assignment for the benefit of creditors, or the admission by it in writing of its inability to pay its debts generally as they become due, or the taking of corporate action by the Company in furtherance of any such action; or

(g) any other Event of Default provided for with respect to the Securities of such series in accordance with Section 3.01. A default under any indebtedness of the Company other than the Securities will not constitute an Event of Default under this Indenture, and a default under one series of Securities will not constitute a default under any other series of Securities. The Trustee shall not be charged with knowledge of an Event of Default unless a Responsible Officer at the Corporate Trust Office has actual knowledge thereof.

Section 5.02 Acceleration of Maturity; Rescission, and Annulment. If any Event of Default described in Section 5.01 above (other than Events of Default described in Section 5.01(e) and Section 5.01(f)) shall have occurred and be continuing with respect to any series, then and in each and every such case, unless the principal of all the Securities of such series shall have already become due and payable, either the Trustee or the Holders of not less than 51% in aggregate principal amount of the Securities of such series then Outstanding hereunder, by notice in writing to the Company (and to the Trustee if given by Holders), may declare the principal amount (or, if the Securities of such series are Original Issue Discount Securities, such portion of the principal amount as may be specified in the terms of that series) of all the Securities of such series and any and all accrued interest thereon to be due and payable immediately, and upon any such declaration the same shall become and shall be immediately due and payable, any provision of this Indenture or the Securities of such series to the contrary notwithstanding. If an Event of Default specified in Section 5.01(e) or Section 5.01(f) occurs, the principal amount of the Securities of such series and any and all accrued interest thereon shall immediately become and be due and payable without any declaration or other act on the party of the Trustee or any Holder. No declaration of acceleration by the Trustee with respect to any series of Securities shall constitute a declaration of acceleration by the Trustee with respect to any other series of Securities, and no declaration of acceleration by the Holders of at least 51% in aggregate principal amount of the Outstanding Securities of any series shall constitute a declaration of acceleration or other action by any of the Holders of any other series of Securities, in each case whether or not the Event of Default on which such declaration is based shall have occurred and be continuing with respect to more than one series of Securities, and whether or not any Holders of the Securities of any such affected series shall also be Holders of Securities of any other such affected series.

At any time after such a declaration of acceleration has been made with respect to the Securities of any series 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 not less than a majority of the aggregate principal amount of the Outstanding Securities of such series, by written notice to the Company and the Trustee, may rescind and annul such declaration and its consequences if all Events of Default with respect to such series of Securities, other than the nonpayment of the principal of the Securities of such series which have become due solely by such acceleration, have been cured or waived as provided in Section 5.13, if such cure or waiver does not conflict with any judgment or decree set forth in Section 5.01(e) and Section 5.01(f) and if all sums paid or advanced by the Trustee hereunder and the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel have been paid.

No such rescission shall affect any subsequent default or impair any right consequent thereon.

Section 5.03 Collection of Indebtedness and Suits for Enforcement by Trustee. The Company covenants that if:

- (a) default is made in the payment of any installment of interest on any Security of any series when such interest becomes due and payable, or
- (b) default is made in the payment of the principal of (or premium, if any, on) any Security at the Maturity thereof, or

(c) default is made in the payment of any sinking or purchase fund or analogous obligation when the same becomes due by the terms of the Securities of any series, and

(d) any such default continues for any period of grace provided in relation to such default pursuant to Section 5.01, then, with respect to the Securities of such series, the Company will, upon demand of the Trustee, pay to it, for the benefit of the Holder of any such Security (or the Holders of any such series in the case of clause (c) above), the whole amount then due and payable on any such Security (or on the Securities of any such series in the case of clause (c) above) for principal (and premium, if any) and interest, if any, with interest (to the extent that payment of such interest shall be legally enforceable) upon the overdue principal (and premium, if any) and upon overdue installments of interest, if any, at such rate or rates as may be prescribed therefor by the terms of any such Security (or of Securities of any such series in the case of clause (c) above); 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 and all other amounts due the Trustee under Section 6.07.

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, and may prosecute such proceeding to judgment or final decree, and may enforce the same against the Company or any other obligor upon the Securities of such series and collect the money adjudged or decreed 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 series of Securities 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 5.04 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 proceedings or otherwise,

(a) to file and prove a claim for the whole amount of principal (or, with respect to Original Discount Securities, such portion of the principal amount as may be specified in the terms of such Securities), premium, if any, and interest, if any, owing and unpaid in respect of the Securities, and to file such other papers or documents as may be necessary and 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 all other amounts due the Trustee under Section 6.07) and of the Securityholders allowed in such judicial proceedings, 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 receiver, assignee, trustee, liquidator, sequestrator (or other similar official) in any such judicial proceeding is hereby authorized by each Securityholder 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 Securityholders, to pay to the Trustee any amount due to it for the reasonable compensation, expenses, disbursements and advances of the Trustee and its agent and counsel, and any other amounts due the Trustee under Section 6.07 hereof.

Nothing herein contained shall be deemed to authorize the Trustee to authorize or consent to or accept or adopt on behalf of any Securityholder 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 Securityholder in any such proceeding.

Section 5.05 Trustee May Enforce Claims Without Possession of Securities. All rights of action and claims under this Indenture or the Securities of any series may be prosecuted and enforced by the Trustee without the possession of any of the Securities of such series 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 and its agents and counsel, be for the ratable benefit of the Holders of the Securities, of the series in respect of which such judgment has been recovered.

Section 5.06 Application of Money Collected. Any money collected by the Trustee with respect to a series of Securities 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, premium, if any, or interest, if any, upon presentation of the Securities of such series 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 6.07 hereof.

Second: To the payment of the amounts then due and unpaid upon the Securities of that series for principal, premium, if any, interest, if any, and additional amounts, if any, in respect of which or for the benefit of which such money has been collected, ratably, without preference or priority of any kind.

Section 5.07 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 Securities of such series;

(b) the Holders of not less than 51 % in principal amount of the Outstanding Securities of such 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 have offered to the Trustee reasonable indemnity 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 such series; it being understood and intended that no one or more Holders of Securities of such series 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 Holders of Securities of such series, or to obtain or to seek to obtain priority or preference over any other such Holders or to enforce any right under this Indenture, except in the manner herein provided and for the equal and proportionate benefit of all the Holders of all Securities of such series.

Section 5.08 Unconditional Right of Securityholders to Receive Principal, Premium, 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, premium, if any, and (subject to Section 3.07) interest, if any, (and additional amounts, if any) on such Security on or after the respective payment dates expressed in such Security (or, in the case of redemption or repayment, on the Redemption Date or Repayment Date, as the case may be) and to institute suit for the enforcement of any such payment on or after such respective date, and such right shall not be impaired or affected without the consent of such Holder.

Section 5.09 Restoration of Rights and Remedies. If the Trustee or any Securityholder has instituted any proceeding to enforce any right or remedy under this Indenture and such proceeding has been discontinued or abandoned for any reason, then and in every such case the Company, the Trustee and the Securityholders shall, subject to any determination in such proceeding, be restored severally and respectively to their former positions hereunder, and thereafter all rights and remedies of the Trustee and the Securityholders shall continue as though no such proceeding had been instituted.

Section 5.10 Rights and Remedies Cumulative. No right or remedy herein conferred upon or reserved to the Trustee or to the Securityholders is intended to be exclusive of any other right or remedy, and every right or 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 prevent the concurrent assertion or employment of any other appropriate right or remedy.

Section 5.11 Delay or Omission Not Waiver. No delay or omission of the Trustee or of any Holder of any Security 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 an acquiescence therein. Every right and remedy given by this Article or by law to the Trustee or to the Securityholders may be exercised from time to time, and as often as may be deemed expedient, by the Trustee or by the Securityholders, as the case may be.

Section 5.12 Control by Securityholders. 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) the Trustee shall have the right to decline to follow any such direction if the Trustee, being advised by counsel, determines that the action so directed may not lawfully be taken or would conflict with this Indenture or if the Trustee in good faith shall, by a Responsible Officer, determine that the proceedings so directed would involve it in personal liability or be unjustly prejudicial to the Holders not taking part in such direction, and

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

Section 5.13 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 not theretofore cured:

(a) in the payment of principal, premium, if any, or interest, if any, on any Security of such series, or in the payment of any sinking or purchase fund or analogous obligation with respect to the Securities of such series, or

(b) in respect of a covenant or provision in this Indenture which, under Article Nine hereof, cannot be modified or amended without the consent of the Holder of each Outstanding Security of such series.

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 5.14 Undertaking for Costs. All parties to this Indenture agree, and each Holder of any Security by his 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 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 Trustee, to any suit instituted by any Securityholder or group of Securityholders holding in the aggregate more than 10% in principal amount of the Outstanding Securities of any series to which the suit relates, or to any suit instituted by any Securityholder for the enforcement of the payment of principal, premium, if any, or interest, if any, on any Security on or after the respective payment dates expressed in such Security (or, in the case of redemption or repayment, on or after the Redemption Date or Repayment Date).

Section 5.15 Waiver of Stay or Extension Laws. The Company covenants (to the extent that 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 (other than any bankruptcy 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 VI THE TRUSTEE

Section 6.01 Certain Duties and Responsibilities of Trustee.

(a) Except during the continuance of an Event of Default with respect to any series of Securities,

(i) the Trustee undertakes to perform such duties and only such duties as are specifically set forth in this Indenture with respect to the Securities of such series, and no implied covenants or obligations shall be read into this Indenture against the Trustee; and

(ii) in the absence of bad faith on its part, the Trustee may, with respect to Securities of such series, conclusively rely upon certificates or opinions furnished to the Trustee and conforming to the requirements of this Indenture; but in the case of any such certificates or opinions which by any provision hereof are specifically required to be furnished to the Trustee, the Trustee shall be under a duty to examine the same to determine whether or not they conform on their face to the requirements of this Indenture (but need not confirm or investigate the accuracy of calculations or other facts stated therein).

(b) If an Event of Default with respect to any series of Securities actually known to a Responsible Officer of the Trustee has occurred and is continuing, the Trustee shall exercise, with respect to the Securities of such series, 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 person would exercise or use under the circumstances in the conduct of his own affairs.

(c) No provision of this Indenture shall be construed to relieve the Trustee from liability for its own negligent action, its own negligent failure to act, or its own willful misconduct, except that

(i) this Subsection shall not be construed to limit the effect of Subsection (a) 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 shall be proved that the Trustee was negligent in ascertaining the pertinent facts;

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

(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 relating to the conduct or affecting the liability of or affording protection to the Trustee shall be subject to the provisions of this Section.

Section 6.02 Notice of Defaults. Within 90 days after receipt of notice of the occurrence of any default hereunder with respect to Securities of any series, the Trustee shall transmit by mail to all Securityholders of such series, as their names and addresses appear in the Security Register, notice of such default hereunder known to the Trustee, unless such default shall have been cured or waived; *provided, however*, that, except in the case of a default in the payment of the principal, premium, if any, or interest, if any, on any Security of such series or in the payment of any sinking or purchase fund installment or analogous obligation with respect to Securities of such series, the Trustee shall be protected in withholding such notice if and so long as the board of directors, the executive committee or a trust committee of directors and/or Responsible Officers of the Trustee in good faith determine that the withholding of such notice is in the interests of the Securityholders of such series and; *provided, further*, that, in the case of any default of the character specified in Section 5.01(d) with respect to Securities of such series, no such notice to Securityholders of such series shall be given until at least 60 days after the occurrence thereof. For the purpose of this Section, the term “**default**”, with respect to Securities of any series, means any event which is, or after notice or lapse of time or both would become, an Event of Default with respect to Securities of such series.

Section 6.03 Certain Rights of Trustee. Except as otherwise provided in Section 6.01 above:

(a) the Trustee may rely and shall be protected in acting or refraining from acting upon any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order, bond, debenture or other paper or document believed by it to be genuine and to have been signed or presented by the proper party or parties;

(b) any request, direction or order of the Company mentioned herein shall be sufficiently evidenced by a Company Request or Company Order and any resolution of the Board of Directors may be sufficiently evidenced by a Board Resolution;

(c) whenever in the administration of this Indenture the Trustee shall deem it desirable that a matter be proved or established prior to taking, suffering or omitting any action hereunder, the Trustee (unless other evidence be herein specifically prescribed) may, in the absence of bad faith on its part, rely upon an Officers' Certificate or Opinion of Counsel or both, and shall not be liable for any action it takes or omits to take in good faith reliance on such certificate or opinion;

(d) the Trustee may consult with counsel of its selection and the advice or opinion of such counsel as to matters of law shall be full and complete authorization and protection from liability in respect of any action taken, suffered or omitted by it hereunder in good faith and in reliance thereon;

(e) 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 Securityholders pursuant to this Indenture, unless such Securityholders 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 it in compliance with such request or direction;

(f) 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 or other paper or document, but the Trustee, in its discretion, may make such further inquiry or investigation into such facts or matters as it may see fit, and, if the Trustee shall determine to make such further inquiry or investigation, it shall be entitled to examine the books, records and premises of the Company, personally or by agent or attorney; and

(g) the Trustee may execute any of the trusts or powers hereunder or perform any duties hereunder either directly or by or through agents or attorneys and the Trustee shall not be responsible for any misconduct or negligence on the part of any agent or attorney appointed with due care by it hereunder.

Section 6.04 Not Responsible for Recitals or Issuance of Securities. The recitals contained herein and in the Securities, except the certificates of authentication, shall be taken as the statements of the Company, and the Trustee assumes no responsibility for their correctness. The Trustee makes no representations as to the validity or sufficiency of this Indenture or of the Securities. The Trustee shall not be accountable for the use or application by the Company of Securities or the proceeds thereof.

Section 6.05 May Hold Securities. The Trustee or any Paying Agent, Security Registrar, or other agent of the Company, in its individual or any other capacity, may become the owner or pledgee of Securities and, subject to Sections 6.08 and 6.13 hereof, may otherwise deal with the Company with the same rights it would have if it were not Trustee, Paying Agent, Security Registrar, or such other agent.

Section 6.06 Money Held in Trust. Money held by the Trustee in trust hereunder need not be segregated from other funds except to the extent required by law. The Trustee shall be under no liability for interest on any money received by it hereunder except as otherwise agreed with the Company.

Section 6.07 Compensation and Reimbursement. The Company covenants and agrees

(a) to pay the Trustee from time to time, and the Trustee shall be entitled to, reasonable compensation for all services rendered by it hereunder (which compensation shall not be limited by any provision of law in regard to the compensation of a trustee of an express trust);

(b) except as otherwise expressly provided herein, to reimburse the Trustee upon its request for all reasonable expenses, disbursements and advances incurred or made by the Trustee in accordance with any provision of this Indenture (including the reasonable compensation and the reasonable expenses and disbursements of its agents and counsel), except any such expense, disbursement or advance as may be attributable to its negligence or bad faith; and

(c) to indemnify the Trustee for, and to hold it harmless against, any loss, liability or expense incurred without negligence or bad faith on its part, arising out of or in connection with the acceptance or administration of this trust, including the reasonable 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.

Without prejudice to any other rights available to the Trustee under applicable law, when the Trustee incurs expenses or renders services in connection with an Event of Default specified in Section 5.01(e) and Section 5.01(f) above, such expenses (including the reasonable charges and expenses of its counsel) and compensation for such services are intended to constitute expenses of administration under any applicable Federal or State bankruptcy, insolvency, reorganization, or other similar law.

The Trustee shall have a lien prior to the Securities upon all property and funds held or collected by it as such for any amount owing to it or any predecessor Trustee pursuant to this Section 6.07, except with respect to funds held in trust for the benefit of the Holders of particular Securities.

The provisions of this Section shall survive the satisfaction and discharge of this Indenture.

Section 6.08 Disqualification; Conflicting Interests. If the Trustee has or shall acquire any conflicting interest within the meaning of the Trust Indenture Act, it shall either eliminate such interest or resign as Trustee with respect to one or more series of Securities, to the extent and in the manner provided by, and subject to the provisions of, the Trust Indenture Act and this Indenture. To the extent permitted by the Trust Indenture Act, the Trustee shall not be deemed to have a conflicting interest by virtue of being a trustee under this Indenture with respect to Securities of more than one series.

Section 6.09 Corporate Trustee Required; Eligibility. There shall at all times be a Trustee hereunder with respect to each series of Securities that shall be a corporation organized and doing business under the laws of the United States of America or of any State or Territory thereof or of the District of Columbia, authorized under such laws to exercise corporate trust powers, having a combined capital and surplus of at least \$50,000,000, and subject to supervision or examination by Federal or State authority and having its principal office and place of business in the City of New York, if there be such a corporation having its principal office and place of business in said City and willing to act as Trustee on customary and usual terms. If such corporation publishes reports of condition at least annually, pursuant to law or to the requirements of the aforesaid supervising or examining authority, then for the purposes of this Section, the combined capital and surplus of such corporation shall be deemed to be its combined capital and surplus as set forth in its most recent report of condition so published. If at any time the Trustee with respect to any series of Securities shall cease to be eligible in accordance with the provisions of this Section, it shall resign immediately in the manner and with the effect hereinafter specified in this Article.

Section 6.10 Resignation and Removal; Appointment of Successor.

(a) No resignation or removal of the Trustee and no appointment of a successor Trustee pursuant to this Article shall become effective until the acceptance of appointment by the successor Trustee under Section 6.11.

(b) The Trustee may resign with respect to any one or more series of Securities at any time by giving at least 60 days' written notice thereof to the Company. If an instrument of acceptance by a successor Trustee shall not have been delivered to the Trustee within 30 days after the giving of such notice of resignation, the resigning Trustee may petition any court of competent jurisdiction for the appointment of a successor Trustee.

(c) The Trustee may be removed with respect to any series of Securities at any time by Act of the Holders of 66 2/3% in principal amount of the Outstanding Securities of that series, delivered to the Trustee and to the Company.

(d) If at any time:

(i) the Trustee shall fail to comply with Section 6.08 above with respect to any series of Securities after written request therefor by the Company or by any Securityholder who has been a bona fide Holder of a Security of that series for at least six months, or

(ii) the Trustee shall cease to be eligible under Section 6.09 above with respect to any series of Securities and shall fail to resign after written request therefor by the Company or by any such Securityholder, or

(iii) the Trustee shall become incapable of acting with respect to any series of Securities, or

(iv) the Trustee shall be adjudged a bankrupt or insolvent or a receiver of the Trustee or of its property shall be appointed or any public officer shall take charge or control of the Trustee or of its property or affairs for the purpose of rehabilitation, conservation or liquidation,

then, in any such case (A) the Company may remove the Trustee, with respect to the series or, in the case of clause (iv), with respect to all series, or (B) subject to Section 5.14, any Securityholder who has been a bona fide Holder of a Security of such series for at least 6 months may, on behalf of himself and all others similarly situated, petition any court of competent jurisdiction for the removal of the Trustee and the appointment of a successor Trustee with respect to the series or, in the case of clause (iv), with respect to all series.

(e) If the Trustee shall resign, be removed or become incapable of acting with respect to any series of Securities, or if a vacancy shall occur in the office of Trustee with respect to any series of Securities for any cause, the Company shall promptly appoint a successor Trustee for that series of Securities. If, within one year after such resignation, removal or incapacity, or the occurrence of such vacancy, a successor Trustee with respect to such series of Securities shall be appointed by Act of the Holders of 66 2/3% in principal amount of the Outstanding Securities of such series delivered to the Company and the retiring Trustee, the successor Trustee so appointed shall, forthwith upon its acceptance of such appointment, become the successor Trustee with respect to such series and supersede the successor Trustee appointed by the Company with respect to such series. If no successor Trustee with respect to such series shall have been so appointed by the Company or the Securityholders of such series and accepted appointment in the manner hereinafter provided, any Securityholder who has been bona fide Holder of a Security of that series for at least six months may, on behalf of himself and all others similarly situated, petition any court of competent jurisdiction for the appointment of a successor Trustee with respect to such series.

(f) The Company shall give notice of each resignation and each removal of the Trustee with respect to any series and each appointment of a successor Trustee with respect to any series by mailing written notice of such event by first-class mail, postage prepaid, to the Holders of Securities of that series as their names and addresses appear in the Security Register. Each notice shall include the name of the successor Trustee and the address of its principal Corporate Trust Office.

Section 6.11 Acceptance of Appointment by Successor. Every successor Trustee appointed hereunder with respect to all series of Securities shall execute, acknowledge and deliver to the Company and to the predecessor Trustee an instrument accepting such appointment, and thereupon the resignation or removal of the predecessor Trustee shall become effective, and such successor Trustee, without any further act, deed or conveyance, shall become vested with all the rights, powers, trusts and duties of the predecessor Trustee with respect to any such series; but, on request of the Company or the successor Trustee, such predecessor Trustee shall, upon payment of its reasonable charges, if any, execute and deliver an instrument transferring to such successor Trustee all the rights, powers and trusts of the predecessor Trustee, and shall duly assign, transfer and deliver to such successor Trustee all property and money held by such predecessor Trustee hereunder.

In case of the appointment hereunder of a successor Trustee with respect to the Securities of one or more (but not all) series, the Company, 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 (1) shall contain such provisions as shall be deemed necessary or desirable to transfer and to conform to, and to vest in, each successor Trustee all the rights, powers, trusts and duties of the predecessor Trustee with respect to the Securities of any series as to which the appointment of such successor Trustee relates and (2) if the predecessor Trustee is not retiring with respect to all Securities, 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 being succeeded shall continue to be vested in the predecessor Trustee, and (3) 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 hereunder separate and apart from any trust or trusts hereunder administered by any other such Trustee; and upon the execution and delivery of such supplemental indenture the resignation or removal of the retiring Trustee shall become effective to the extent provided therein and each such successor Trustee, without any further act, deed or conveyance, shall become vested with all the rights, powers, trusts and duties of the retiring Trustee with respect to the Securities of that or those series to which the appointment of such successor Trustee relates; and, on request of the Company or any successor Trustee, such retiring Trustee shall duly assign, transfer and deliver to such successor Trustee all property and money held by such retiring Trustee hereunder with respect to the Securities of that or those series to which the appointment of such successor Trustee relates.

Upon request of any such successor Trustee, the Company shall execute any and all instruments for more fully and certainly vesting in and confirming to such successor Trustee all such rights, powers and trusts referred to in the first or second preceding paragraph, as the case may be.

No successor Trustee with respect to any series of Securities shall accept its appointment unless at the time of such acceptance such successor Trustee shall be qualified and eligible with respect to that series under this Article.

Notwithstanding replacement of the Trustee pursuant to this Section, the Company's obligations under Section 6.07 hereof shall continue for the benefit of the retiring Trustee.

Section 6.12 Merger, Conversion, Consolidation or Succession to Business. Any corporation into which the Trustee may be merged or converted or with which it may be consolidated, or any corporation resulting from any merger, conversion or consolidation to which the Trustee shall be a party, or any corporation succeeding to all or substantially all of the corporate trust business of the Trustee, shall be the successor of the Trustee hereunder, provided that such corporation shall be otherwise qualified and eligible under this Article, without the execution or filing of any paper or any further act on the part of any of the parties hereto. In case any Securities shall have been authenticated, but not delivered, by the Trustee then in office, any successor Trustee by merger, conversion or consolidation to such authenticating Trustee may adopt such authentication and deliver the Securities so authenticated with the same effect as if such successor Trustee had itself authenticated such Securities.

Section 6.13 Preferential Collection of Claims Against Company. If and when the Trustee shall be or shall become a creditor, of the Company (or of any other obligor upon the Securities), the Trustee shall be subject to the provisions of the Trust Indenture Act regarding the collection of claims against the Company (or against any such other obligor, as the case may be).

Section 6.14 Appointment of Authenticating Agent. At any time when any of the Securities remain Outstanding the Trustee, with the approval of the Company, may appoint an Authenticating Agent or Agents with respect to one or more series of Securities which shall be authorized to act on behalf of the Trustee to authenticate Securities of such series issued upon exchange, registration of transfer or partial redemption thereof or pursuant to Section 3.06, and Securities so authenticated shall be entitled to the benefits of this Indenture and shall be valid and obligatory for all purposes as if authenticated by the Trustee hereunder. Wherever reference is made in this Indenture to the authentication and delivery of Securities by the Trustee or the Trustee's certificate of authentication, such reference shall be deemed to include authentication and delivery on behalf of the Trustee by an Authenticating Agent and a certificate of authentication executed on behalf of the Trustee by an Authenticating Agent. Each Authenticating Agent shall be acceptable to the Company and shall at all times be a corporation organized and doing business under the laws of the United States of America, any State thereof or the District of Columbia, authorized under such laws to act as an Authenticating Agent, having a combined capital and surplus of not less than \$50,000,000 and subject to supervision or examination by Federal or State authority. If such Authenticating Agent publishes reports of condition at least annually, pursuant to law or to the requirements of said supervising or examining authority, then for the purposes of this Section, the combined capital and surplus of such Authenticating Agent shall be deemed to be its combined capital and surplus as set forth in its most recent report of condition so published. If at any time an Authenticating Agent shall cease to be eligible in accordance with the provisions of this Section, such Authenticating Agent shall resign immediately in the manner and with the effect specified in this Section.

Any corporation into which an Authenticating Agent may be merged or converted or with which it may be consolidated, or any corporation resulting from any merger, conversion or consolidation to which such Authenticating Agent shall be a party, or any corporation succeeding to the corporate agency or corporate trust business of an Authenticating Agent, shall continue to be an Authenticating Agent, provided such corporation shall be otherwise eligible under this Section, without the execution or filing of any paper or any further act on the part of the Trustee or the Authenticating Agent.

An Authenticating Agent may resign at any time by giving written notice thereof to the Trustee and, if other than the Company, to the Company. The Trustee may at any time terminate the agency of an Authenticating Agent by giving written notice thereof to such Authenticating Agent and, if other than the Company, to the Company. Upon receiving such a notice of resignation or upon such a termination, or in case at any time such Authenticating Agent shall cease to be eligible in accordance with the provisions of this Section, the Trustee, with the approval of the Company, may appoint a successor Authenticating Agent which shall be acceptable to the Company and shall mail written notice of such appointment by first-class mail, postage prepaid, to all Holders of Securities of the series with respect to which such Authenticating Agent will serve, as their names and addresses appear in the Security Register. Any successor Authenticating Agent upon acceptance of its appointment hereunder shall become vested with all the rights, powers and duties of its predecessor hereunder, with like effect as originally named as an Authenticating Agent. No successor Authenticating Agent shall be appointed unless eligible under the provisions of this Section.

The Company agrees to pay to each Authenticating Agent from time to time reasonable compensation for its services under this Section.

If an appointment with respect to one or more series is made pursuant to this Section, the Securities of such series may have endorsed thereon, in addition to the Trustee's certificate of authentication, an alternate certificate of authentication in the following form:

This is one of the Securities of the series designated therein referred to in the within-mentioned Indenture. [], as Trustee

By:
As Authenticating Agent:

By:
Authorized Officer:

ARTICLE VII SECURITYHOLDERS' LISTS AND REPORTS BY TRUSTEE AND COMPANY

Section 7.01 Company to Furnish Trustee Names and Addresses of Securityholders. The Company will furnish or cause to be furnished to the Trustee:

(a) semiannually, not more than 15 days after January 1 and July 1 in each year, in such form as the Trustee may reasonably require, a list of the names and addresses of the Holders of Securities of each series as of such date, and

(b) at such other times as the Trustee may request in writing, within 30 days after the receipt by the Company of any such request, a list of similar form and content as of a date not more than 15 days prior to the time such list is furnished, provided that if the Trustee shall be the Security Registrar for such series, such list shall not be required to be furnished.

Section 7.02 Preservation of Information; Communications to Securityholders.

(a) The Trustee shall preserve, in as current a form as is reasonably practicable, the names and addresses of Holders of Securities contained in the most recent list furnished to the Trustee as provided in Section 7.01 and the names and addresses of Holders of Securities received by the Trustee in its capacity as Security Registrar. The Trustee may destroy any list furnished to it as provided in Section 7.01 upon receipt of a new list so furnished.

(b) If three or more Holders of Securities of any series (hereinafter referred to as “**applicants**”) apply in writing to the Trustee, and furnish to the Trustee reasonable proof that each such applicant has owned a Security of such series for a period of at least six months preceding the date of such application, and such application states that the applicants desire to communicate with other Holders of Securities of such series or with the Holders of all Securities with respect to their rights under this Indenture or under such Securities and is accompanied by a copy of the form of proxy or other communication which such applicants propose to transmit, then the Trustee shall, within five Business Days after the receipt of such application, at its election, either:

(i) afford such applicants access to the information preserved at the time by the Trustee in accordance with Section 7.02(a), or

(ii) inform such applicants as to the approximate number of Holders of Securities of such series or all Securities, as the case may be, whose names and addresses appear in the information preserved at the time by the Trustee in accordance with Section 7.02(a), and as to the approximate cost of mailing to such Securityholders the form of proxy or other communication, if any, specified in such application.

If the Trustee shall elect not to afford such applicants access to such information, the Trustee shall, upon the written request of such applicants, mail to each Holder of a Security of such series or to all Securityholders, as the case may be, whose names and addresses appear in the information preserved at the time by the Trustee in accordance with Section 7.02 (a), a copy of the form of proxy or other communication which is specified in such request, with reasonable promptness after a tender to the Trustee of the material to be mailed and of payment, or provision for the payment, of the reasonable expenses of mailing, unless within five days after such tender, the Trustee shall mail to such applicants and file with the Commission, together with a copy of the material to be mailed, a written statement to the effect that, in the opinion of the Trustee, such mailing would be contrary to the best interests of the Holders of Securities of such series or all Securityholders, as the case may be, or would be in violation of applicable law. Such written statement shall specify the basis of such opinion. If the Commission, after opportunity for a hearing upon the objections specified in the written statement so filed, shall enter an order refusing to sustain any of such objections or if, after the entry of an order sustaining one or more of such objections, the Commission shall find, after notice and opportunity for hearing, that all the objections so sustained have been met and shall enter an order so declaring, the Trustee shall mail copies of such material to all Securityholders of such series or all Securityholders, as the case may be, with reasonable promptness after the entry of such order and the renewal of such tender; otherwise the Trustee shall be relieved of any obligation or duty to such applicants respecting their application.

(c) Every Holder of Securities, by receiving and holding the same, agrees with the Company and the Trustee that neither the Company nor the Trustee shall be held accountable by reason of the disclosure of any such information as to the names and addresses of the Holders of Securities in accordance with Section 7.02(b), regardless of the source from which such information was derived, and that the Trustee shall not be held accountable by reason of mailing any material pursuant to a request made under Section 7.02(b).

Section 7.03 Reports by Trustee.

(a) The Trustee shall transmit to Holders such reports concerning the Trustee and its actions under this Indenture as may be required pursuant to the Trust Indenture Act at the times and in the manner provided pursuant thereto. If required by Section 313(a) of the Trust Indenture Act, the Trustee shall, within 60 days after each June 1 following the date of this Indenture, deliver to each Holder, as provided in Trust Indenture Act Section 313(c), a brief report dated as of such June 1, which complies with the provisions of such Section 313(a).

(b) A copy of each such report shall, at the time of such transmission to Holders, be filed by the Trustee with each stock exchange upon which any Securities are listed, with the Commission and with the Company as required by Trust Indenture Act Section 313(d). The Company will promptly notify the Trustee when any Securities are listed on any stock exchange.

Section 7.04 Reports by Company. The Company will:

(a) file with the Trustee, within 30 days after the Company is required to file the same with the Commission, copies of the annual reports and of the information, documents and other reports (or copies of such portions of any of the foregoing as the Commission may from time to time by rules and regulations prescribe) which the Company may be required to file with the Commission pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934; or, if the Company is not required to file information, documents or reports pursuant to either of said Sections, then it will file with the Trustee and the Commission, in accordance with rules and regulations prescribed from time to time by the Commission, such of the supplementary and periodic information, documents and reports which may be required pursuant to Section 13 of the Securities Exchange Act of 1934 in respect of a security listed and registered on a national securities exchange as may be prescribed from time to time in such rules and regulations;

(b) file with the Trustee and the Commission, in accordance with rules and regulations prescribed from time to time by the Commission, such additional information, documents and reports with respect to compliance by the Company with the conditions and covenants of this Indenture as may be required from time to time by such rules and regulations; and

(c) transmit by mail to all Securityholders, as their names and addresses appear in the Security Register, within 30 days after the filing thereof with the Trustee, such summaries of any information, documents and reports required to be filed by the Company pursuant to paragraphs (a) and (b) of this Section as may be required by rules and regulations prescribed from time to time by the Commission.

ARTICLE VIII CONSOLIDATION, MERGER, CONVEYANCE OR TRANSFER

Section 8.01 Company May Consolidate, etc., Only on Certain Terms. The Company shall not consolidate with or merge into any other corporation or convey or transfer all or substantially all of its properties and assets and the properties and assets of the Subsidiaries, taken as a whole, to any Person, unless;

(a) either the Company shall be the continuing corporation, or the corporation formed by such consolidation or into which the Company is merged or the Person which acquires by conveyance or transfer all or substantially all of the properties and assets of the Company and the Subsidiaries, taken as a whole, shall be a corporation organized and existing under the laws of the United States of America or any State or the District of Columbia, and shall expressly assume, by an indenture supplemental hereto, executed and delivered to the Trustee, in form satisfactory to the Trustee, the due and punctual payment of the principal, premium, if any, and interest, if any, on all the Securities and the performance of every covenant of this Indenture on the part of the Company to be performed or observed;

(b) immediately after giving effect to such transaction, no Event of Default, or event which, after notice or lapse of time, or both, would become an Event of Default, shall have happened and be continuing; and

(c) the Company has delivered to the Trustee an Officers' Certificate and an Opinion of Counsel to the effect that any such consolidation, merger, conveyance or transfer and any assumption permitted or required by this Article complies with the provisions of this Article.

Section 8.02 Successor Corporation Substituted. Upon any consolidation or merger, or any conveyance or transfer of all or substantially all of the properties and assets of the Company in accordance with Section 8.01, the successor corporation formed by such consolidation or into which the Company is merged or the Person to which such conveyance or transfer 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 corporation had been named as the Company herein and the Company shall thereupon be released from all obligations hereunder and under the Securities. Such successor corporation thereupon may cause to be signed and may issue any or all of the Securities issuable hereunder which theretofore shall not have been signed by the Company and delivered to the Trustee; and, upon the order of such successor corporation, instead of the Company, and subject to all the terms, conditions and limitations in this Indenture prescribed, the Trustee shall authenticate and shall deliver any Securities which previously shall have been signed and delivered by the officers of the Company to the Trustee for authentication, and any Securities which such successor corporation thereafter shall cause to be signed and delivered to the Trustee for that purpose. All of the Securities so issued shall in all respects have the same legal rank and benefit under this Indenture as the Securities theretofore or thereafter issued in accordance with the terms of this Indenture as though all of such Securities had been issued at the date of the execution hereof.

In case of any such consolidation, merger, sale or conveyance, such changes in phraseology and form (but not in substance) may be made in the Securities thereafter to be issued as may be appropriate.

ARTICLE IX SUPPLEMENTAL INDENTURES

Section 9.01 Supplemental Indentures Without Consent of Securityholders. Without the consent of the Holders of any Securities, the Company and the Trustee, at any time and from time to time, may enter into one or more indentures supplemental hereto (which shall conform to the provisions of the Trust Indenture Act as in force at the date of execution thereof), in form satisfactory to the Trustee, for any of the following purposes:

(a) to evidence the succession of another corporation to the Company, or successive successions, and the assumption by any such successor of the covenants, agreements and obligations of the Company pursuant to Article 8 hereof; or

(b) to add to the covenants of the Company such further covenants, restrictions or conditions for the protection of the Holders of the Securities of any or all series as the Company and the Trustee shall consider to be for the protection of the Holders of the Securities of any or all series or to surrender any right or power herein conferred upon the Company (and if such covenants or the surrender of such right or power are to be for the benefit of less than all series of Securities, stating that such covenants are expressly being included or such surrenders are expressly being made solely for the benefit of one or more specified series); or

(c) to cure any ambiguity, to correct or supplement any provision herein which may be inconsistent with any other provision herein or in any supplemental indenture, or to make any other provisions with respect to matters or questions arising under this Indenture that do not adversely affect the interests of the Holders of Securities of any series in any material respect; or

(d) to add to this Indenture such provisions as may be expressly permitted by the Trust Indenture Act, excluding, however, the provisions referred to in Section 316(a)(2) of the Trust Indenture Act as in effect at the date as of which this instrument is executed or any corresponding provision in any similar federal statute hereafter enacted; or

(e) to add guarantors or co-obligors with respect to any series of Securities; or

(f) to secure any series of Securities; or

(g) to establish any form of Security, as provided in Article 2 hereof, and to provide for the issuance of any series of Securities, as provided in Article 3 hereof, and to set forth the terms thereof, and/or to add to the rights of the Holders of the Securities of any series; or

(h) to evidence and provide for the acceptance of appointment by another corporation as a successor Trustee hereunder with respect to one or more series of Securities 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, pursuant to Section 6.11 hereof; or

(i) to add any additional Events of Default in respect of the Securities of any or all series (and if such additional Events of Default are to be in respect of less than all series of Securities, stating that such Events of Default are expressly being included solely for the benefit of one or more specified series); or

(j) to comply with the requirements of the Commission in connection with the qualification of this Indenture under the Trust Indenture Act; or

(k) to make any change in any series of Securities that does not adversely affect in any material respect the interests of the Holders of such Securities.

Section 9.02 Supplemental Indentures With Consent of Securityholders. With the consent of the Holders of not less than a majority in principal amount of the Outstanding Securities of each series affected by such supplemental indenture or indentures, by Act of said Holders delivered to the Company and the Trustee, the Company and the Trustee may from time to time and at any time enter into an indenture or indentures supplemental hereto 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 the Securities of each such series under this Indenture; provided, however, that no such supplemental indenture shall, without the consent of the Holder of each Outstanding Security affected thereby:

(a) change the Scheduled Maturity Date or the stated payment date of any payment of premium or interest payable on any Security, or reduce the principal amount thereof, or any amount of interest or premium payable thereon, or

(b) change the method of computing the amount of principal of any Security or any interest payable thereon on any date, or change any Place of Payment where, or the coin or currency in which, any Security or any payment of premium or interest thereon is payable, or

(c) impair the right to institute suit for the enforcement of any payment described in clauses (a) or (b) on or after the same shall become due and payable, whether at Maturity or, in the case of redemption or repayment, on or after the Redemption Date or the Repayment Date, as the case may be; or

(d) change or waive the redemption or repayment provisions of any series;

(e) reduce the percentage in principal amount of the Outstanding Securities of any series, the consent of whose Holders is required for any such supplemental indenture, or the consent of whose Holders is required for any waiver of compliance with certain provisions of this Indenture or certain defaults hereunder and their consequences, provided for in this Indenture; or

(f) modify any of the provisions of this Section or Section 5.13, except to increase any such percentage or to provide that certain other provisions of this Indenture cannot be modified or waived without the consent of the Holder of each Outstanding Security affected thereby; provided, however, that this clause shall not be deemed to require the consent of any Holder with respect to changes in the references to "the Trustee" and concomitant changes in this Section, or the deletion of this proviso, in accordance with the requirements of Sections 6.11 and 9.01(h); or

(g) adversely affect the ranking or priority of any series;

(h) release any guarantor or co-obligor from any of its obligations under its guarantee of the Securities or this Indenture, except in compliance with the terms of this Indenture; or

(i) waive any Event of Default pursuant to Section 5.01(a), Section 5.01(b) or Section 5.01(c) hereof with respect to such Security.

A supplemental indenture that changes or eliminates any covenant or other provision of this Indenture that has expressly been included solely for the benefit of one or more particular series of Securities, or that modifies the rights of the Holders of Securities of such series with respect to such covenant or other provision, shall be deemed not to affect the rights under this Indenture of the Holders of Securities of any other series.

It shall not be necessary for any Act of Securityholders under this Section 9.02 to approve the particular form of any proposed supplemental indenture, but it shall be sufficient if such Act shall approve the substance thereof.

Section 9.03 Execution of Supplemental Indentures. Upon request of the Company and upon filing with the Trustee of evidence of an Act of Securityholders as aforementioned, the Trustee shall join with the Company in the execution of such supplemental indenture unless such supplemental indenture affects the Trustee's own rights, powers, trusts, duties or immunities under this Indenture or otherwise, in which case the Trustee may in its discretion, but shall not be obligated to, enter into such supplemental indenture. 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 be entitled to receive, and (subject to Section 6.01) shall be fully protected in relying upon, an Opinion of Counsel stating that the execution of such supplemental indenture is authorized or permitted by this Indenture.

Section 9.04 Effect of Supplemental Indentures. Upon the execution of any supplemental indenture under this Article, this Indenture shall be and be deemed to be modified and amended in accordance therewith, and such supplemental indenture shall form a part of this Indenture for all purposes; and the respective rights, limitation of rights, duties, powers, trusts and immunities under this Indenture of the Trustee, the Company, and every Holder of Securities theretofore or thereafter authenticated and delivered hereunder shall be determined, exercised and enforced thereunder to the extent provided therein.

Section 9.05 Conformity With Trust Indenture Act. Every supplemental indenture executed pursuant to this Article shall conform to the requirements of the Trust Indenture Act as then in effect.

Section 9.06 Reference in Securities to Supplemental Indentures. Securities of any series authenticated and delivered after the execution of any supplemental indenture pursuant to this Article may, and shall if required by the Trustee, bear a notation in form approved by the Trustee as to any matter provided for in such supplemental indenture. If the Company shall so determine, new Securities so modified as to conform, in the opinion of the Trustee and the Company, to any modification of this Indenture contained in any such supplemental indenture may be prepared and executed by the Company and authenticated and delivered by the Trustee in exchange for Outstanding Securities.

ARTICLE X COVENANTS

Section 10.01 Payment of Principal, Premium and Interest. With respect to each series of Securities, the Company will duly and punctually pay or cause to be paid the principal, premium, if any, and interest, if any, on such Securities in accordance with their terms and this Indenture, and will duly comply with all the other terms, agreements and conditions contained in the Indenture for the benefit of the Securities of such series.

Section 10.02 Maintenance of Office or Agency. So long as any of the Securities remain outstanding, the Company will maintain an office or agency in each Place of Payment where Securities may be presented or surrendered for payment, where Securities may be surrendered for registration of transfer or exchange, and where notices and demands to or upon the Company in respect of the Securities and this Indenture may be served. The Company will give prompt written notice to the Trustee of the location, and of any change in the location, of such office or agency. If at any time the Company shall fail to maintain such 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 its agent to receive all such presentations, surrenders, notices and demands.

Section 10.03 Money or Security Payments to Be Held in Trust. If the Company shall at any time act as its own Paying Agent for any series of Securities, it will, on or before each due date of the principal, premium, if any, or interest, if any, on any of the Securities of such series, segregate and hold in trust for the benefit of the Holders of the Securities of such series a sum sufficient to pay such principal, premium, or interest so becoming due until such sums shall be paid to such Holders of such Securities or otherwise disposed of as herein provided, and will promptly notify the Trustee of its action or failure so to act.

Whenever the Company shall have one or more Paying Agents for any series of Securities, it will, on or prior to each due date of the principal, premium, if any, or interest, if any, on any Securities of such series, deposit with a Paying Agent a sum sufficient to pay such principal, premium, or interest so becoming due, such sum to be held in trust for the benefit of the Holders of the Securities entitled to the same and (unless such Paying Agent is the Trustee) the Company will promptly notify the Trustee of its action or failure so to act.

The Company will cause each Paying Agent other than the Trustee for any series of Securities to execute and deliver to the Trustee an instrument in which such Paying Agent shall agree with the Trustee, subject to the provisions of this Section, that such Paying Agent will

(a) hold all sums held by it for the payment of principal, premium, if any, or interest, if any, on Securities of such series in trust for the benefit of the Holders of the Securities entitled thereto until such sums shall be paid to such Holders of such Securities or otherwise disposed of as herein provided;

(b) give the Trustee notice of any default by the Company (or any other obligor upon the Securities of such series) in the making of any such payment of principal, premium, if any, or interest, if any, on the Securities of such series; and

(c) at any time during the continuance of any such default, upon the written request of the Trustee, forthwith pay to the Trustee all sums so held in trust by such Paying Agent.

The Company may, at any time, for the purpose of obtaining the satisfaction and discharge of this Indenture with respect to any series of Securities or for any other purpose, pay, or by Company Order direct any Paying Agent to pay, to the Trustee all sums held in trust by the Company or such Paying Agent in respect of each and every series of Securities as to which it seeks to discharge this Indenture or, if for any other purpose, all sums so held in trust by the Company in respect of all Securities, such sums to be held by the Trustee upon the same trusts as those upon which such sums were held by the Company or such Paying Agent; and, upon such payment by any Paying Agent to the Trustee, such Paying Agent shall be released from all further liability with respect to such money.

Section 10.04 Certificate to Trustee. The Company will deliver to the Trustee within 120 days after the end of each fiscal year, an Officers' Certificate, one of whose signatories shall be the Company's principal executive, accounting or financial officer, stating that in the course of the performance by the signers of their duties as officers of the Company they would normally have knowledge of any default by the Company in the performance of any of its covenants, conditions or agreements contained herein (without regard to any period of grace or requirement of notice provided hereunder), stating whether or not they have knowledge of any such default and, if so, specifying each such default of which the signers have knowledge and the nature thereof.

Section 10.05 Corporate Existence. Subject to Article 8 the Company will do or cause to be done all things necessary to preserve and keep in full force and effect its corporate existence.

ARTICLE XI REDEMPTION OF SECURITIES

Section 11.01 Applicability of Article. The Company may reserve the right to redeem and pay before the Scheduled Maturity Date all or any part of the Securities of any series, either by optional redemption, sinking or purchase fund or analogous obligation or otherwise, by provision therefor in the form of Security for such series established and approved pursuant to Section 2.02 and 2.03 or as otherwise provided in Section 3.01, and on such terms as are specified in such form or in the indenture supplemental hereto with respect to Securities of such series as provided in Section 3.01. Redemption of Securities of any series shall be made in accordance with the terms of such Securities and, to the extent that this Article does not conflict with such terms, the succeeding Sections of this Article.

Section 11.02 Election to Redeem; Notice to Trustee. In case of any redemption at the election of the Company, the Company shall, at least 60 days prior to the Redemption Date fixed by the Company (unless a shorter notice shall be satisfactory to the Trustee) notify the Trustee in writing of such Redemption Date and of the principal amount of Securities of such series to be redeemed. In the case of any redemption of Securities (a) prior to the expiration of any restriction on such redemption provided in the terms of such Securities or elsewhere in this Indenture, or (b) pursuant to an election of the Company which is subject to a condition specified in the terms of such Securities or elsewhere in this Indenture, the Company shall furnish the Trustee with an Officers' Certificate evidencing compliance with such restriction or condition.

Section 11.03 Selection by Trustee of Securities to be Redeemed. If fewer than all the Securities of any series are to be redeemed, the particular Securities to be redeemed shall be selected not more than 60 days prior to the Redemption Date by the Trustee, from the Outstanding Securities of such series not previously called for redemption, by such method as the Trustee shall deem fair and appropriate, which may include provision for the selection for redemption of portions of the principal of Securities of such series of a denomination larger than the minimum authorized denomination for Securities of that series. Unless otherwise provided in the terms of a particular series of Securities, the portions of the principal of Securities so selected for partial redemption shall be equal to the minimum authorized denomination of the Securities of such series, or an integral multiple thereof, and the principal amount which remains outstanding shall not be less than the minimum authorized denomination for Securities of such series.

The Trustee shall promptly notify the Company in writing of the Securities selected for redemption and, in the case of any Security selected for partial redemption, the principal amount thereof to be redeemed.

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 11.04 Notice of Redemption. Notice of redemption shall be given by first-class mail, postage prepaid, mailed not fewer than 30 nor more than 60 days prior to the Redemption Date, to each Holder of Securities to be redeemed, at his or her address appearing in the Security Register on the applicable Record Date.

All notices of redemption shall state:

(1) the Redemption Date;

(2) the Redemption Price, or if not then ascertainable, the manner of calculation thereof;

(3) if fewer than all Outstanding Securities of any series are to be redeemed, the identification (and, in the case of partial redemption, the respective principal amounts) of the Securities to be redeemed, from the Holder to whom the notice is given and that on and after the date fixed for redemption, upon surrender of such Security, a new Security or Securities of the same series in the aggregate principal amount equal to the unredeemed portion thereof will be issued in accordance with Section 11.07;

(4) that on the Redemption Date the Redemption Price will become due and payable upon each such Security, and that interest, if any, thereon shall cease to accrue from and after said date;

(5) the place where such Securities are to be surrendered for payment of the Redemption Price, which shall be the office or agency maintained by the Company in the Place of Payment pursuant to Section 10.02 hereof; and

(6) that the redemption is on account of a sinking or purchase fund, or other analogous obligation, if that be the case.

Notice of redemption of Securities to be redeemed at the election of the Company shall be given by the Company or, at the Company's request, made at least five business days prior to the date on which notice is to be given, by the Trustee in the name and at the expense of the Company.

Section 11.05 Deposit of Redemption Price. On or prior to any Redemption Date, the Company shall deposit with the Trustee or with a Paying Agent (or, if the Company is acting as its own Paying Agent, segregate and hold in trust as provided in Section 10.03) an amount of money, in immediately available funds, sufficient to pay the Redemption Price of all the Securities which are to be redeemed on that date.

Section 11.06 Securities Payable on Redemption Date. Notice of Redemption having been given as aforesaid, the Securities so to be redeemed shall, on the Redemption Date, become due and payable at the Redemption Price therein specified and from and after such date (unless the Company shall default in the payment of the Redemption Price) such Securities shall cease to bear interest. Upon surrender of such Securities for redemption in accordance with the notice, such Securities shall be paid by the Company at the Redemption Price. Any installment of interest due and payable on or prior to the Redemption Date shall be payable to the Holders of such Securities registered as such on the relevant Record Date according to the terms and the provisions of Section 3.07 above; unless, with respect to an Interest Payment Date that falls on a Redemption Date, such Securities provide that interest due on such date is to be paid to the Person to whom principal is payable.

If any Security called for redemption shall not be so paid upon surrender thereof for redemption, the principal shall, until paid, bear interest from the Redemption Date at the rate borne by the Security, or as otherwise provided in such Security.

Section 11.07 Securities Redeemed in Part. Any Security that is to be redeemed only in part shall be surrendered at the office or agency maintained by the Company in the Place of Payment pursuant to Section 10.02 hereof with respect to that series (with, if the Company or the Trustee so requires, due endorsement by, or a written instrument of transfer in form satisfactory to the Company and the Trustee duly executed by, the Holder thereof or his attorney duly authorized in writing) and the Company shall execute and the Trustee shall authenticate and deliver to the Holder of such Security without service charge and at the expense of the Company, a new Security or Securities of the same series, tenor, terms and Scheduled Maturity Date, of any authorized denomination as requested by such Holders in aggregate principal amount equal to and in exchange for the unredeemed portion of the principal of the Security so surrendered.

Section 11.08 Provisions with Respect to any Sinking Funds. Unless the form or terms of any series of Securities shall provide otherwise, in lieu of making all or any part of any mandatory sinking fund payment with respect to such series of Securities in cash, the Company may at its option (a) deliver to the Trustee for cancellation any Securities of such series theretofore acquired by the Company, or (b) receive credit for any Securities of such series (not previously so credited) acquired or redeemed by the Company (other than through operation of a mandatory sinking fund) and theretofore delivered to the Trustee for cancellation, and if it does so then (i) Securities so delivered or credited shall be credited at the applicable sinking fund Redemption Price with respect to Securities of such series, and (ii) on or before the 60th day next preceding each sinking fund Redemption Date with respect to such series of Securities, the Company will deliver to the Trustee (A) an Officers' Certificate specifying the portions of such sinking fund payment to be satisfied by payment of cash and by the delivery or credit of Securities of such series acquired or redeemed by the Company, and (B) such Securities, to the extent not previously surrendered. Such Officers' Certificate shall also state the basis for any such credit and that the Securities for which the Company elects to receive credit have not been previously so credited and were not acquired by the Company through operation of the mandatory sinking fund, if any, provided with respect to such Securities and shall also state that no Event of Default with respect to Securities of such series has occurred and is continuing. All Securities so delivered to the Trustee shall be canceled by the Trustee and no Securities shall be authenticated in lieu thereof.

If the sinking fund payment or payments (mandatory or optional) with respect to any series of Securities made in cash plus any unused balance of any preceding sinking fund payments with respect to Securities of such series made in cash shall exceed \$50,000 (or a lesser sum if the Company shall so request), unless otherwise provided by the terms of such series of Securities, that cash shall be applied by the Trustee on the sinking fund Redemption Date with respect to Securities of such series next following the date of such payment to the redemption of Securities of such series at the applicable sinking fund Redemption Price with respect to Securities of such series, together with accrued interest, if any, to the date fixed for redemption, with the effect provided in Section 11.06. The Trustee shall select, in the manner provided in Section 11.03, for redemption on such sinking fund Redemption Date a sufficient principal amount of Securities of such series to utilize that cash and shall thereupon cause notice of redemption of the Securities of such series for the sinking fund to be given in the manner provided in Section 11.04 (and with the effect provided in Section 11.06) for the redemption of Securities in part at the option of the Company. Any sinking fund moneys not so applied or allocated by the Trustee to the redemption of Securities of such series shall be added to the next cash sinking fund payment with respect to Securities of such series received by the Trustee and, together with such payment, shall be applied in accordance with the provisions of this Section 11.08. Any and all sinking fund moneys with respect to Securities of any series held by the Trustee at the Maturity of Securities of such series, and not held for the payment or redemption of particular Securities of such series, shall be applied by the Trustee, together with other moneys, if necessary, to be deposited sufficient for the purpose, to the payment of the principal of the Securities of such series at Maturity.

On or before each sinking fund Redemption Date provided with respect to Securities of any series, the Company shall pay to the Trustee in cash a sum equal to all accrued interest, if any, to the date fixed for redemption on Securities to be redeemed on such sinking fund Redemption Date pursuant to this Section 11.08.

The Trustee shall not redeem any Securities with sinking fund moneys or give any notice of redemption of Securities by operation of the applicable sinking fund during the continuance of a default in payment of interest on Securities of such series or of any Event of Default with respect to such series, except that if the notice of redemption of any Securities shall theretofore have been mailed in accordance with the provisions hereof, the Trustee shall redeem such Securities if cash sufficient for that purpose shall be deposited with the Trustee for that purpose in accordance with the terms of this Article 11. Except as aforesaid, any moneys in the sinking fund with respect to Securities of any series at the time when any such default or Event of Default with respect to such series shall occur, and any moneys thereafter paid into such sinking fund shall, during the continuance of such default or Event of Default with respect to such series, be held as security for the payment of all Securities of such series; provided, however, that in case such default or Event of Default with respect to such series shall have been cured or waived as provided herein, such moneys shall thereafter be applied on the next sinking fund payment date on which such moneys may be applied pursuant to the provisions of this Section 11.08.

ARTICLE XII REPAYMENT AT OPTION OF HOLDERS

Section 12.01 Applicability of Article. Repayment of Securities of any series before their Scheduled Maturity Date at the option of Holders thereof shall be made in accordance with the terms of such Securities and (except as otherwise specified as contemplated by Section 3.01 for Securities of any series) in accordance with this Article.

Section 12.02 Repayment of Securities. Securities of any series subject to repayment in whole or in part at the option of the Holders thereof will, unless otherwise provided in the terms of such Securities, be repaid at a price equal to the principal amount thereof, together with interest thereon accrued to the Repayment Date specified in the terms of such Securities. On or before the Repayment Date, the Company will deposit with the Trustee or with a Paying Agent (or, if the Company is acting as its own Paying Agent, segregate and hold in trust as provided in Section 10.03) an amount of money, in immediately available funds, sufficient to pay the Repayment Price of all the Securities which are to be repaid on such date.

Section 12.03 Exercise of Option. Securities of any series subject to repayment at the option of the Holders thereof will contain an “ **Option to Elect Repayment** ” form on the reverse of such Securities. To be repaid at the option of the Holder, any Security so providing for such repayment, with the “Option to Elect Repayment” form on the reverse of such Security duly completed by the Holder, must be received by the Company at the Place of Payment therefor specified in the terms of such Security (or at such other place or places of which the Company shall from time to time notify the Holders of such Securities) not earlier than 30 days nor later than 15 days prior to the Repayment Date. If less than the entire principal amount of such Security is to be repaid in accordance with the terms of such Security, the principal amount of such Security to be repaid, in increments of \$1,000 unless otherwise specified in the terms of such Security, and the denomination or denominations of the Security or Securities to be issued to the Holder for the portion of the principal amount of such Security surrendered that is not to be repaid must be specified. The principal amount of any Security providing for repayment at the option of the Holder thereof may not be repaid in part, if, following such repayment, the unpaid principal amount of such Security would be less than the minimum authorized denomination of Securities of the series of which such Security to be repaid is a part. Except as otherwise may be provided by the terms of any Security providing for repayment at the option of the Holder thereof, exercise of the repayment option by the Holder shall be irrevocable unless waived by the Company.

Section 12.04 When Securities Presented for Repayment Become Due and Payable. If Securities of any series providing for repayment at the option of the Holders thereof shall have been surrendered as provided in this Article and as provided by the terms of such Securities, such Securities or the portions thereof, as the case may be, to be repaid shall become due and payable and shall be paid by the Company on the Repayment Date therein specified, and on and after such Repayment Date (unless the Company shall default in the payment of such Securities on such Repayment Date) interest on such Securities or the portions thereof, as the case may be, shall cease to accrue.

Section 12.05 Securities Repaid in Part. Upon surrender of any Security which is to be repaid in part only, the Company shall execute and the Trustee shall authenticate and deliver to the Holder of such Security, without service charge and at the expense of the Company, a new Security or Securities of the same series, tenor, terms and Scheduled Maturity Date, of any authorized denomination specified by the Holder, in an aggregate principal amount equal to and in exchange for the portion of the principal of such Security so surrendered which is not to be repaid.

(signature page follows)

IN WITNESS WHEREOF, the parties hereto have caused this Indenture to be duly executed, and their respective corporate seals to be hereunto affixed and attested; all as of the day and year first above written.

NEOSTEM, INC.

By: _____
Name:
Title:

Attest:

By: _____
Name:
Title:

TRUSTEE

By: _____
Name:
Title:

Attest:

By: _____
Name:
Title:

State of

ss.:

County of

On the [] day of [], 20[] before me personally came [] to me known, who, being by me duly sworn, did depose and say that he resides at []; that he is of [], one of the parties described in and which executed the above instrument; that he knows the corporate seal of said corporation; that the seal affixed to that instrument is such corporate seal; that it was affixed by authority of the board of directors of said corporation; and that he signed his name thereto by like authority.

Name

Notary Public

State of

ss.:

County of

On the [] day of [], 20[] before me personally came [], to me known, who, being by me duly sworn, did depose and say that he resides at []; that he is the [] of NeoStem, Inc., one of the parties described in and which executed the above instrument; that he knows the corporate seal of said corporation; that the seal affixed to that instrument is such corporate seal; that it was affixed by authority of the board of directors of said corporation; and that he signed his name thereto by like authority.

Name

Notary Public

[Lowenstein Sandler PC Letterhead]

August 24, 2012

NeoStem, Inc.
420 Lexington Avenue, Suite 450
New York, New York 10170

Re: Shelf Registration Statement on Form S-3

Ladies and Gentlemen:

This opinion is being furnished to you in connection with the Registration Statement on Form S-3 (the "Registration Statement"), including the prospectus that is part of the Registration Statement (the "Prospectus"), filed by NeoStem, Inc., a Delaware corporation (the "Company"), with the Securities and Exchange Commission (the "Commission") on August 24, 2012 under the Securities Act of 1933, as amended (the "Securities Act").

The Prospectus provides that it will be supplemented in the future by one or more prospectus supplements (each, a "Prospectus Supplement"). The Prospectus, as supplemented by the various Prospectus Supplements, will provide for the issuance and sale by the Company from time to time of (i) shares of the Company's common stock, par value \$0.001 per share (the "Common Stock"), (ii) shares of the Company's preferred stock, par value \$0.01 per share (the "Preferred Stock"), in one or more series or classes, (iii) warrants to purchase Common Stock or Preferred Stock (the "Warrants"), (iv) secured or unsecured debt securities, in one or more series, which may be either senior debt securities, senior subordinated debt securities, subordinated debt securities or junior subordinated securities (the "Debt Securities") to be issued pursuant to an Indenture between the Company and a trustee or bank to be named (the "Trustee"), which may be supplemented for any series of Debt Securities (the "Indenture"), or (v) units composed of the foregoing (the "Units"). The Common Stock, Preferred Stock, Warrants, Debt Securities and Units are collectively referred to herein as the "Securities." The Warrants may be issued pursuant to a warrant agreement (the "Warrant Agreement") between the Company and a bank or trust company as warrant agent. Any Preferred Stock may be exchangeable for and/or convertible into shares of Common Stock or another series of Preferred Stock. Any Debt Securities may be exchangeable and/or convertible into shares of Common Stock or Preferred Stock. The Units may be issued pursuant to a Unit Agreement (the "Unit Agreement") between the Company and a bank or trust company as unit agent. The Securities are being registered for offering and sale from time to time pursuant to Rule 415 under the Securities Act.

In rendering our opinions set forth below, we have reviewed the Registration Statement and the exhibits thereto. We have also reviewed such corporate documents and records of the Company, such certificates of public officials and officers of the Company and such other matters as we have deemed necessary or appropriate for purposes of this opinion. In our examination, we have assumed: (i) the authenticity of original documents and the genuineness of all signatures; (ii) the conformity to the originals of all documents submitted to us as copies; (iii) the truth, accuracy and completeness of the information, representations and warranties contained in the instruments, documents, certificates and records we have reviewed; and (iv) the legal capacity for all purposes relevant hereto of all natural persons and, with respect to all parties to agreements or instruments relevant hereto other than the Company, that such parties had the requisite power and authority (corporate or otherwise) to execute, deliver and perform such agreements or instruments, that such agreements or instruments have been duly authorized by all requisite action (corporate or otherwise), executed and delivered by such parties and that such agreements or instruments are the valid, binding and enforceable obligations of such parties. As to any facts material to the opinions expressed herein that were not independently established or verified, we have relied upon oral or written statements and representations of officers and other representatives of the Company.

Based on the foregoing, and subject to the assumptions, limitations and qualifications set forth herein, we are of the opinion that:

1. With respect to shares of Common Stock, when (a) the issuance and the terms of the sale of the shares of Common Stock have been duly authorized by the Board of Directors of the Company in conformity with the Company's certificate of incorporation and bylaws; (b) such shares have been issued and delivered against payment of the purchase price therefor in an amount in excess of the par value thereof, in accordance with the applicable definitive purchase, underwriting or similar agreement, and as contemplated by the Registration Statement, the Prospectus and the related Prospectus Supplement; and (c) to the extent such shares of Common Stock are to be issued upon the conversion, exchange or exercise of any Preferred

Stock, Warrants or Debt Securities, when such shares have been duly issued and delivered as contemplated by the terms of the applicable Preferred Stock, the Warrant Agreement relating to such Warrants or the Indenture relating to such Debt Securities, respectively, the shares of Common Stock will be validly issued, fully paid and nonassessable.

2. With respect to any particular series of shares of Preferred Stock, when (a) the issuance and the terms of the sale of the shares of Preferred Stock have been duly authorized by the Board of Directors of the Company in conformity with the Company's certificate of incorporation and bylaws; (b) an appropriate certificate of designation relating to a series of the Preferred Stock to be sold under the Registration Statement has been duly authorized and adopted and filed with the Secretary of State of Delaware; (c) the terms of issuance and sale of shares of such series of Preferred Stock have been duly established in conformity with the Company's certificate of incorporation and bylaws so as not to violate any applicable law or result in a default under or breach of any agreement or instrument binding upon the Company and comply with any requirement or restriction imposed by any court or governmental body having jurisdiction over the Company or any of its property; (d) such shares have been issued and delivered against payment of the purchase price therefor in an amount in excess of the par value thereof, in accordance with the applicable definitive purchase, underwriting or similar agreement, and as contemplated by the Registration Statement, the Prospectus and the related Prospectus Supplement; and (e) to the extent such shares of Preferred Stock are to be issued upon the conversion, exchange or exercise of any Warrants or Debt Securities, when such shares have been duly issued and delivered as contemplated by the terms of the Warrant Agreement relating to such Warrants or Indenture relating to such Debt Securities, respectively, the shares of Preferred Stock will be validly issued, fully paid and nonassessable.

3. With respect to Warrants, when (a) the issuance and the terms of the sale of the Warrants have been duly authorized by the Board of Directors of the Company; (b) the terms of the Warrants and of their issuance and sale have been duly established so as not to violate any applicable law or result in a default under or breach of any agreement or instrument binding upon the Company and comply with any requirement or restriction imposed by any court or governmental body having jurisdiction over the Company or any of its property; (c) the Warrants and the applicable Warrant Agreement relating to the Warrants have been duly executed and countersigned and the Warrants have been issued and sold in accordance with the applicable definitive purchase, underwriting or similar agreement, as contemplated by the Registration Statement, the Prospectus and the related Prospectus Supplement; and (d) the Company has received the applicable consideration for the Warrants as contemplated by the Registration Statement, the Prospectus and the related Prospectus Supplement(s), the Warrants will constitute valid and binding obligations of the Company enforceable against the Company in accordance with their terms.

4. With respect to Debt Securities, when (a) the issuance and the terms of the sale of the Debt Securities have been duly authorized by the Board of Directors of the Company; (b) the terms of the Debt Securities and of their issuance and sale have been duly established so as not to violate any applicable law or result in a default under or breach of any agreement or instrument binding upon the Company and comply with any requirement or restriction imposed by any court or governmental body having jurisdiction over the Company or any of its property; (c) the Debt Securities and the applicable Indenture relating to the Debt Securities have been duly executed and countersigned and in the case of the Indenture, duly authenticated by the Trustee, and the Debt Securities have been issued and sold as contemplated by the Registration Statement, the Prospectus and the related Prospectus Supplement; and (d) the Company has received the applicable consideration for the Debt Securities as contemplated by the Registration Statement, the Prospectus and the related Prospectus Supplement(s), the Debt Securities will constitute valid and binding obligations of the Company enforceable against the Company in accordance with their terms.

5. With respect to Units, when (a) the issuance and the terms of the sale of the Units have been duly authorized by the Board of Directors of the Company; (b) the terms of the Units and of their issuance and sale have been duly established so as not to violate any applicable law or result in a default under or breach of any agreement or instrument binding upon the Company and comply with any requirement or restriction imposed by any court or governmental body having jurisdiction over the Company or any of its property; (c) the Unit Agreement and the Units have been duly executed and countersigned and the Units have been issued and sold in accordance with the applicable Unit Agreement, as contemplated by the Registration Statement, the Prospectus and the related Prospectus Supplement; and (d) the Company has received the applicable consideration for the Units as contemplated by the Registration Statement, the Prospectus and the related Prospectus Supplement(s), the Units will constitute valid and binding obligations of the Company enforceable against the Company in accordance with their terms.

In rendering the opinions set forth above, we have assumed that (i) the Registration Statement (and any applicable post-effective amendment thereto) will have become effective under the Securities Act, a Prospectus Supplement will have been prepared and filed with the Commission describing the Securities offered thereby and such Securities will have been issued and sold in accordance with the terms of such Prospectus Supplement and in compliance with all applicable laws; (ii) a definitive purchase, underwriting or similar agreement with respect to such Securities (if applicable) will have been duly authorized, executed and delivered by the Company and the other parties thereto; (iii) the Securities will be duly authorized by all necessary corporate action by the Company and any agreement pursuant to which such Securities may be issued will be duly

authorized, executed and delivered by the Company and the other parties thereto; (iv) the Company is and will remain duly organized, validly existing and in good standing under applicable state law; and (v) the Company has reserved a sufficient number of shares of its duly authorized, but unissued, Common Stock and Preferred Stock as is necessary to provide for the issuance of the shares of Common Stock and Preferred Stock pursuant to the Registration Statement.

The opinions set forth above are subject to the following exceptions, limitations and qualifications: (i) the effect of bankruptcy, insolvency, reorganization, fraudulent conveyance, moratorium or other similar laws now or hereafter in effect relating to or affecting the rights and remedies of creditors; (ii) the effect of general principles of equity, including without limitation, concepts of materiality, reasonableness, good faith and fair dealing and the possible unavailability of specific performance or injunctive relief, regardless of whether enforcement is considered in a proceeding in equity or at law, and the discretion of the court before which any proceeding therefor may be brought; (iii) the unenforceability under certain circumstances under law or court decisions of provision providing for the indemnification of, or contribution to, a party with respect to liability where such indemnification or contribution is contrary to public policy. We express no opinion concerning the enforceability of any waiver of rights or defenses with respect to stay, extension or usury laws. Our opinion expressed herein is also subject to the qualification that no term or provision shall be included in any certificate of designation relating to any series of the Preferred Stock, Warrant Agreement, Indenture, Unit Agreement or any other agreement or instrument pursuant to which any of the Securities are to be issued that would affect the validity of such opinion.

Our opinion is limited to the federal laws of the United States and to the General Corporation Law of the State of Delaware. We express no opinion as to the effect of the law of any other jurisdiction. Our opinion is rendered as of the date hereof, and we assume no obligation to advise you of changes in law or fact (or the effect thereof on the opinions expressed herein) that hereafter may come to our attention.

We hereby consent to the inclusion of this opinion as Exhibit 5.1 to the Registration Statement and to the references to our firm therein and in the Prospectus and in any Prospectus Supplement under the caption "Legal Matters." 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/ LOWENSTEIN SANDLER PC

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We have issued our report dated March 20, 2012 (except for Notes 3 and 11, as to which the date is August 14, 2012), with respect to the consolidated financial statements of NeoStem, Inc. and subsidiaries included in the Current Report on Form 8-K, dated August 14, 2012, which is incorporated by reference in this Registration Statement. We consent to the incorporation by reference in the Registration Statement of the aforementioned report, and to the use of our name as it appears under the caption "Experts."

/s/ GRANT THORNTON LLP

New York, New York
August 24, 2012

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 April 5, 2011, relating to the 2010 financial statements (before retrospective adjustments to the financial statements and financial statement disclosures) of NeoStem, Inc. and subsidiaries (not presented herein), (which report expresses an unqualified opinion and includes an explanatory paragraph relating to the fact that Deloitte & Touche LLP was not engaged to audit, review or apply any procedures to (1) the adjustments to retrospectively apply the change in accounting related to the adoption of Financial Accounting Standards Board Accounting Standards Update 2011-05, "Comprehensive Income (Topic 220) - Presentation of Comprehensive Income", and (2) the retrospective adjustments for the discontinued operations discussed in Note 11 to the consolidated financial statements and, accordingly, does not express an opinion or any other form of assurance about whether such retrospective adjustments are appropriate and have been properly applied), appearing in the Current Report on Form 8-K filed with the SEC on August 15, 2012, of NeoStem, Inc., and to the reference to us under the heading "Experts" in the Prospectus, which is part of such Registration Statement.

/s/ DELOITTE & TOUCHE LLP

Parsippany, New Jersey
August 24, 2012