

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

FORM 8-K

CURRENT REPORT

Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934

Date of Report (Date of earliest event reported): **October 18, 2018**

AKOUSTIS TECHNOLOGIES, INC.
(Exact name of registrant as specified in its charter)

Delaware
(State or Other Jurisdiction
of Incorporation)

001-38029
(Commission File
Number)

33-1229046
(I.R.S. Employer
Identification Number)

9805 Northcross Center Court, Suite A
Huntersville, NC 28078
(Address of principal executive offices, including zip code)

704-997-5735
(Registrant's telephone number, including area code)

Not Applicable
(Former name or former address, if changed since last report)

Check the appropriate box below if the Form 8-K filing is intended to simultaneously satisfy the filing obligation of the registrant under any of the following provisions (see General Instruction A.2. below):

- Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)
- Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)
- Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))
- Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

Indicate by check mark whether the registrant is an emerging growth company as defined in Rule 405 of the Securities Act of 1933 (§230.405 of this chapter) or Rule 12b-2 of the Securities Exchange Act of 1934 (§240.b-2 of this chapter)

Emerging Growth Company

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Item 1.01 Entry into a Material Definitive Agreement.

Underwritten Public Offering of Common Stock

On October 19, 2018, Akoustis Technologies, Inc. (the “Company”) entered into an underwriting agreement (the “Common Stock Underwriting Agreement”) with Oppenheimer & Co. Inc., as the representative of the several underwriters named in Schedule I of the Common Stock Underwriting Agreement (the “Common Stock Underwriters”), pursuant to which the Company agreed to issue and sell to the Common Stock Underwriters 7,250,000 shares of the Company’s common stock, par value \$0.001 per share (the “Common Stock”), in a public offering pursuant to a Registration Statement on Form S-3 (File No. 333-227637) (the “Registration Statement”) and a related prospectus, including the related prospectus supplement, filed with the Securities and Exchange Commission (the “SEC” and such offering, the “Common Stock Offering”). In addition, pursuant to the Common Stock Underwriting Agreement the Company granted the Common Stock Underwriters an option to purchase, for a period of 30 calendar days from October 19, 2018, up to an additional 1,087,500 shares of Common Stock solely to cover over-allotments, if any (the “Over-Allotment Option”). The Company estimates that the net proceeds from the Common Stock Offering will be approximately \$28.5 million, or approximately \$32.9 million if the Common Stock Underwriters exercise the Over-Allotment Option in full, in each case, after deducting the underwriting discount and estimated offering expenses payable by the Company. Under the terms of the Common Stock Underwriting Agreement, the Company has agreed to indemnify the Common Stock Underwriters against certain liabilities, including liabilities under the Securities Act of 1933, as amended (the “Securities Act”), or contribute to payments that the Common Stock Underwriters may be required to make in respect of those liabilities. The Common Stock Offering closed on October 23, 2018.

The Common Stock Underwriting Agreement is filed as Exhibit 1.1 to this Current Report on Form 8-K, and the description of the terms of the Common Stock Underwriting Agreement does not purport to be complete and is qualified in its entirety by reference to such exhibit, which is incorporated herein by reference. A copy of the opinion of K&L Gates LLP relating to the legality of the issuance and sale of the shares of Common Stock in the Common Stock Offering is attached as Exhibit 5.1 hereto.

Underwritten Offering of 6.5% Convertible Senior Notes due 2023

Convertible Notes Underwriting Agreement

On October 19, 2018, the Company entered into an underwriting agreement (the “Convertible Notes Underwriting Agreement”) with Oppenheimer & Co. Inc., as the sole underwriter (in such capacity, the “Convertible Notes Underwriter”), pursuant to which the Company agreed to issue and sell to the Convertible Notes Underwriter \$10.0 million aggregate principal amount of the Company’s 6.5% Convertible Senior Notes due 2023 (the “Notes”) in an offering pursuant to the Registration Statement and a related prospectus, including related prospectus supplement, filed with the SEC (the “Convertible Notes Offering” and, together with the Common Stock Offering, the “Offerings”). The Company estimates that the net proceeds from the Convertible Notes Offering will be approximately \$8.9 million after deducting the underwriting discount and estimated offering expenses payable by the Company. Under the terms of the Convertible Notes Underwriting Agreement, the Company has agreed to indemnify the Convertible Notes Underwriter against certain liabilities, including liabilities under the Securities Act, or contribute to payments that the Convertible Notes Underwriter may be required to make in respect of those liabilities. The Convertible Notes Offering closed on October 23, 2018.

The Convertible Notes Underwriting Agreement is filed as Exhibit 1.2 to this Current Report on Form 8-K, and the description of the terms of the Convertible Notes Underwriting Agreement does not purport to be complete and is qualified in its entirety by reference to such exhibit, which is incorporated herein by reference. A copy of the opinion of K&L Gates LLP relating to the legality of the issuance and sale of the Convertible Notes and the underlying shares of Common Stock in the Convertible Notes Offering is attached as Exhibit 5.2 hereto.

October 2018 Indenture and Notes

The Convertible Notes were issued pursuant to an indenture, dated as of October 23, 2018 (the “October 2018 Base Indenture”), between the Company and The Bank of New York Mellon Trust Company, N.A., as trustee (the “Trustee”), as supplemented by the first supplemental indenture dated as of October 23, 2018 (the “October 2018 Supplemental Indenture” and, together with the October 2018 Base Indenture, the “October 2018 Indenture”), between the Company and the Trustee.

The Notes bear interest at a fixed rate of 6.5% per year, payable in cash quarterly in arrears on February 28, May 31, August 31 and November 30 of each year, beginning on February 28, 2019. The Notes will mature on November 30, 2023 (the “Maturity Date”), unless earlier repurchased, redeemed or converted in accordance with their terms.

Holders of the Notes may convert all or any portion of their Notes, in multiples of \$1,000 principal amount, at their option at any time prior to the close of business on the business day immediately preceding the stated Maturity Date. The Company will settle conversions of the Notes through delivery of shares of Common Stock in accordance with the terms of the October 2018 Indenture. The conversion rate for the Notes is initially 196.08 shares per \$1,000 principal amount of Notes, which is equivalent to an initial conversion price of \$5.10 per share of Common Stock, representing a conversion premium of approximately 120% over the public offering price per share of Common Stock in the Common Stock Offering. The conversion rate is subject to adjustment under certain circumstances in accordance with the terms of the October 2018 Indenture.

If the Company undergoes a “qualifying fundamental change,” as defined in the October 2018 Indenture, under certain circumstances holders who convert their Notes in connection with such a qualifying fundamental change will be entitled to a “qualifying fundamental change payment” equal to \$130 per \$1,000 of aggregate principal of Notes converted, payable in cash; provided, however, that so long as the Qualifying Fundamental Change Payment Price (as defined below) is not less than \$5.01 per share (as appropriately adjusted for any stock split, reverse stock split, stock dividend or other reclassification or combination of our common stock occurring after the date of issuance of the notes offered hereby), the Company will have the option to pay any qualifying fundamental change payments in freely tradable shares of Common Stock valued at the product of (x) 95% and (y) the “stock price” (determined as described in the October 2018 Indenture) (such product, the “Qualifying Fundamental Change Payment Price”).

The Company may redeem the Notes, at its option and in whole or in part, at a redemption price equal to 100% of the principal amount of Notes plus accrued and unpaid interest on such principal up to the redemption date, as follows: (1) on or after November 30, 2019 until November 29, 2020, if the closing sale price per share of the Common Stock exceeds 175% of the then-effective conversion price of the Notes for each of 20 of any 30 consecutive trading days immediately preceding the optional redemption notice delivered by the Company; (2) on or after November 30, 2020 until November 29, 2021, if the closing sale price per share of the Common Stock exceeds 150% of the then-effective conversion price of the Notes for each of 20 of any 30 consecutive trading days immediately preceding the optional redemption notice delivered by the Company and (3) on or after November 30, 2021, if the closing sale price per share of the Common Stock exceeds 125% of the then-effective conversion price of the Notes for each of 20 of any 30 consecutive trading days immediately preceding the optional redemption notice delivered by the Company. Upon redemption, each noteholder will receive an interest make-whole payment equal to the remaining scheduled interest payments that would have been made on the redeemed Notes had the Notes remained outstanding through the Maturity Date, which will be paid in cash; provided, however, that so long as the Make-Whole VWAP Price (as defined below) is not less than \$5.01 per share (as appropriately adjusted for any stock split, reverse stock split, stock dividend or other reclassification or combination of our common stock occurring after the date of issuance of the notes offered hereby), the Company will have the option to pay interest make-whole payments in freely tradable shares of Common Stock valued at the product of (x) 95% and (y) the volume weighted average price of Common Stock for the ten trading days ending on and including the trading day immediately preceding the redemption date (such product, the “Make-Whole VWAP Price”).

Each holder of Notes will have a one-time right to require the Company to repurchase on November 30, 2021 for cash all (but not less than all) of the Notes of such holder at a purchase price equal to 100% of the principal amount of the Notes to be repurchased, plus accrued and unpaid interest on such principal, if any, up to such repurchase date. In addition, if a “fundamental change” (as defined in the October 2018 Indenture) occurs prior to the Maturity Date, subject to certain conditions, holders of the Notes will have the right to require the Company to repurchase for cash all of the Notes, or any portion thereof that is equal to \$1,000 or an integral multiple of \$1,000, at a purchase price equal to 100% of the principal amount of the Notes to be repurchased, plus accrued and unpaid interest on such principal, if any, up to such repurchase date.

The October 2018 Indenture includes customary covenants and provides for customary events of default, in each case as specified therein. In the case of an event of default with respect to the Notes arising from specified defaults relating to bankruptcy laws, all outstanding Notes will become due and payable immediately without further action or notice. If any other event of default with respect to the Notes under the October 2018 Indenture occurs or is continuing, the Trustee or holders of at least 25% in aggregate principal amount of the then outstanding Notes may declare the principal amount of the Notes to be immediately due and payable. The Notes are unsecured and rank pari passu with the Company’s outstanding unsubordinated liabilities.

The summaries of the October 2018 Indenture and the Notes do not purport to be complete and are qualified in their entirety by reference to the text of the October 2018 Base Indenture, the October 2018 Supplemental Indenture, and the Form of 6.5% Convertible Senior Note due November 30, 2023 (the “October 2018 Note”), which are filed as Exhibits 4.1, 4.2 and 4.3, respectively, to this Current Report on Form 8-K and are incorporated herein by reference.

First Supplemental Indenture to May 2018 Indenture

In connection with the Offerings, on October 18, 2018, the Company and Akoustis, Inc., a wholly-owned subsidiary of the Company (the “May 2018 Guarantor”), entered into the First Supplemental Indenture (the “May 2018 Supplemental Indenture”) to the Indenture dated May 14, 2018, by and among the Company, the May 2018 Guarantor and The Bank of New York Mellon Trust Company, N.A., as trustee and collateral agent. Among other things, the May 2018 Supplemental Indenture permits the incurrence of the indebtedness under the October 2018 Indenture and the October 2018 Notes. The summary of the May 2018 Supplemental Indenture does not purport to be complete and is qualified in its entirety by reference to the text of the May 2018 Supplemental Indenture, which is filed as Exhibit 4.4 to this Current Report on Form 8-K and is incorporated by reference.

Item 2.03 Creation of a Direct Financial Obligation or an Obligation under an Off-Balance Sheet Arrangement of a Registrant.

The information set forth in Item 1.01 of this Current Report on Form 8-K under the subheading “October 2018 Indenture and Notes” is incorporated by reference into this Item 2.03.

Item 8.01 Other Events.

On October 18, 2018 and October 19, 2018, the Company issued press releases with respect to the Offerings. These press releases are attached as Exhibit 99.1 and Exhibit 99.2 hereto, respectively.

Item 9.01 Financial Statements and Exhibits.

(d) Exhibits

Exhibit No.	Description
<u>1.1</u>	<u>Underwriting Agreement, dated October 19, 2018, by and between Akoustis Technologies, Inc. and Oppenheimer & Co. Inc. as representative of the several underwriters named on Schedule I thereto</u>
<u>1.2</u>	<u>Underwriting Agreement, dated October 19, 2018, by and between Akoustis Technologies, Inc. and Oppenheimer & Co. Inc.</u>
<u>4.1</u>	<u>Indenture, dated as of October 23, 2018, by and between Akoustis Technologies, Inc. and The Bank of New York Mellon Trust Company, N.A.</u>
<u>4.2</u>	<u>First Supplemental Indenture, dated as of October 23, 2018, by and between Akoustis Technologies, Inc. and The Bank of New York Mellon Trust Company, N.A.</u>
<u>4.3</u>	<u>Form of 6.5% Convertible Senior Note due November 30, 2023</u>
<u>4.4</u>	<u>First Supplemental Indenture, dated as of October 18, 2018, among Akoustis Technologies, Inc., Akoustis, Inc. and The Bank of New York Mellon Trust Company, N.A.</u>
<u>5.1</u>	<u>Opinion of K&L Gates LLP relating to the Common Stock Offering</u>
<u>5.2</u>	<u>Opinion of K&L Gates LLP relating to the Convertible Notes Offering</u>
<u>23.1</u>	<u>Consent of K&L Gates LLP (contained in Exhibit 5.1)</u>
<u>23.2</u>	<u>Consent of K&L Gates LLP (contained in Exhibit 5.2)</u>
<u>99.1</u>	<u>Press Release, dated October 18, 2018</u>
<u>99.2</u>	<u>Press Release, dated October 19, 2018</u>

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

AKOUSTIS TECHNOLOGIES, INC.

Date: October 23, 2018

By: /s/ John T. Kurtzweil

Name: John T. Kurtzweil

Title: Chief Financial Officer

AKOUSTIS TECHNOLOGIES, INC.

7,250,000 Shares of Common Stock

UNDERWRITING AGREEMENT

October 19, 2018

Oppenheimer & Co. Inc.
as Representative of the several
Underwriters named in Schedule I hereto
c/o Oppenheimer & Co. Inc.
85 Broad Street
New York, New York 10004

Ladies and Gentlemen:

Akoustis Technologies, Inc., a Delaware corporation (the “Company”), proposes, subject to the terms and conditions contained herein, to sell to you and the other underwriters named on Schedule I to this Agreement (the “Underwriters”), for whom you are acting as Representative (the “Representative”), an aggregate of 7,250,000 shares (the “Firm Shares”) of the Company’s common stock, \$0.001 par value per share (the “Common Stock”). The respective amounts of the Firm Shares to be purchased by each of the several Underwriters are set forth opposite their names on Schedule I hereto. In addition, the Company proposes to grant to the Underwriters an option to purchase up to an additional 1,087,500 shares (the “Option Shares”) of Common Stock from the Company for the purpose of covering over-allotments in connection with the sale of the Firm Shares. The Firm Shares and the Option Shares are collectively called the “Shares.”

The Company has prepared and filed in conformity with the requirements of the Securities Act of 1933, as amended (the “Securities Act”), and the published rules and regulations thereunder (the “Rules”) adopted by the Securities and Exchange Commission (the “Commission”) a registration statement on Form S-3 (No. 333-227637), including a related prospectus dated October 5, 2018 (the “Base Prospectus”) relating to common stock, preferred stock, debt securities, warrants, rights and units of the Company that may be sold from time to time by the Company in accordance with Rule 415 of the Securities Act, and such amendments thereof as may have been required to the date of this Agreement. Copies of such Registration Statement (as defined below) (including all amendments thereof and all documents deemed incorporated by reference therein) and of the related Base Prospectus have heretofore been delivered by the Company to you.

The term “Registration Statement” as used in this Agreement means the registration statement, including all exhibits, financial schedules and all documents and information deemed to be part of the Registration Statement by incorporation by reference or otherwise, as amended from time to time, including the information (if any) contained in the form of final prospectus filed with the Commission pursuant to Rule 424(b) of the Rules and deemed to be part thereof at the time of effectiveness pursuant to Rule 430B of the Rules.

If the Company has filed an abbreviated registration statement to register additional Shares pursuant to Rule 462(b) under the Rules (the “462(b) Registration Statement”), then any reference herein to the Registration Statement shall also be deemed to include such 462(b) Registration Statement. The term “Preliminary Prospectus” means the Base Prospectus, together with any preliminary prospectus supplement used or filed with the Commission pursuant to Rule 424 of the Rules, in the form provided to the Underwriters by the Company for use in connection with the offering of the Shares. The term “Prospectus” means the Base Prospectus, any Preliminary Prospectus and any amendments or further supplements to such prospectus, and including, without limitation, the final prospectus supplement, filed pursuant to and within the limits described in Rule 424(b) with the Commission in connection with the proposed sale of the Securities contemplated by this Agreement through the date of such prospectus supplement. The term “Effective Date” shall mean each date that the Registration Statement and any post-effective amendment or amendments thereto became or becomes effective, including as provided in Section 11(d) of the Securities Act. Unless otherwise stated herein, any reference herein to the Registration Statement, any Preliminary Prospectus, the Statutory Prospectus (as hereinafter defined) and the Prospectus shall be deemed to refer to and include the documents incorporated by reference therein, including pursuant to Item 12 of Form S-3 under the Securities Act, which were filed under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), on or before the date hereof or are so filed hereafter. Any reference herein to the terms “amend,” “amendment” or “supplement” with respect to the Registration Statement, any Preliminary Prospectus, the Statutory Prospectus or the Prospectus shall be deemed to refer to and include any such document filed or to be filed under the Exchange Act after the date of the Registration Statement, any such Preliminary Prospectus, the Statutory Prospectus or Prospectus, as the case may be, and deemed to be incorporated therein by reference.

The Company understands that the Underwriters propose to make a public offering of the Shares, as set forth in and pursuant to the Statutory Prospectus (as hereinafter defined) and the Prospectus, as soon after the date of this Agreement as the Representative deems advisable. The Company hereby confirms that the Underwriters and dealers have been authorized to distribute or cause to be distributed each Preliminary Prospectus, and each Issuer Free Writing Prospectus (as hereinafter defined) and are authorized to distribute the Prospectus (as from time to time amended or supplemented if the Company furnishes amendments or supplements thereto to the Underwriters).

1 . Sale, Purchase, Delivery and Payment for the Shares. On the basis of the representations, warranties and agreements contained in, and subject to the terms and conditions of, this Agreement:

(a) The Company agrees to issue and sell to each of the Underwriters, and each of the Underwriters agrees, severally and not jointly, to purchase from the Company, at a purchase price of \$3.9844 per share (the “Initial Price”), the number of Firm Shares set forth opposite the name of such Underwriter under the column “Number of Firm Shares to be Purchased from the Company” on Schedule I to this Agreement subject to adjustment in accordance with Section 8 hereof.

(b) The Company hereby grants to the several Underwriters an option to purchase, severally and not jointly, all or any part of the Option Shares at the Initial Price. The number of Option Shares to be purchased by each Underwriter shall be the same percentage (adjusted by the Representative to eliminate fractions) of the total number of Option Shares to be purchased by the Underwriters as such Underwriter is purchasing of the Firm Shares. Such option may be exercised only to cover over-allotments in the sales of the Firm Shares by the Underwriters and may be exercised in whole or in part at any time on or before 12:00 noon, New York City time, on the business day before the Firm Shares Closing Date (as defined below), and from time to time thereafter within 30 days after the date of this Agreement, in each case upon written, facsimile or telegraphic notice, or verbal or telephonic notice confirmed by written, facsimile or telegraphic notice, by the Representative to the Company no later than 12:00 noon, New York City time, on the business day before the Firm Shares Closing Date or at least two business days before the Option Shares Closing Date (as defined below), as the case may be, setting forth the number of Option Shares to be purchased and the time and date (if other than the Firm Shares Closing Date) of such purchase.

(c) Payment of the purchase price for, and delivery of certificates for, the Firm Shares shall be made at the offices of Oppenheimer & Co. Inc., 85 Broad Street, New York, New York 10004, at 10:00 a.m., New York City time, on the third business day following the date of this Agreement or at such time on such other date, not later than ten (10) business days after the date of this Agreement, as shall be agreed upon by the Company and the Representative (such time and date of delivery and payment are called the "Firm Shares Closing Date"). In addition, in the event that any or all of the Option Shares are purchased by the Underwriters, payment of the purchase price, and delivery of the certificates, for such Option Shares shall be made at the above-mentioned offices, or at such other place as shall be agreed upon by the Representative and the Company, on each date of delivery as specified in the notice from the Representative to the Company (such time and date of delivery and payment are called the "Option Shares Closing Date"). The Firm Shares Closing Date and any Option Shares Closing Date are called, individually, a "Closing Date" and, together, the "Closing Dates."

(d) Payment shall be made to the Company by wire transfer of immediately available funds or by certified or official bank check or checks payable in New York Clearing House (same day) funds drawn to the order of the Company, against delivery of the respective certificates to the Representative for the respective accounts of the Underwriters of certificates for the Shares to be purchased by them.

(e) Certificates evidencing the Shares shall be registered in such names and shall be in such denominations as the Representative shall request at least two full business days before the Firm Shares Closing Date or, in the case of Option Shares, on the day of notice of exercise of the option as described in Section 1(b) and shall be delivered by or on behalf of the Company to the Representative through the facilities of the Depository Trust Company ("DTC") for the respective accounts of the Underwriters. The Company will cause the certificates representing the Shares to be made available for checking and packaging, at such place as is designated by the Representative, on the full business day before the Firm Shares Closing Date (or the Option Shares Closing Date in the case of the Option Shares).

2 . Representations and Warranties of the Company. The Company represents and warrants to each Underwriter as of the date hereof, as of the Firm Shares Closing Date and as of each Option Shares Closing Date (if any), as follows:

(a) The Company meets the requirements for use of Form S-3 under the Securities Act including the transaction requirements set forth in General Instruction 1.B.1 of such form. The Company is not, and has not been for at least 12 calendar months prior to the filing of the Registration Statement, a shell company. The Company filed with the Commission the Registration Statement on such Form, including a Base Prospectus, for registration under the Securities Act of the offering and sale of the Shares, and the Company has prepared and used a Preliminary Prospectus in connection with the offer and sale of the Shares. When the Registration Statement or any amendment thereof or supplement thereto was or is declared or deemed to be effective and as of the date of the most recent amendment to the Registration Statement, it (i) complied or will comply, in all material respects, with the requirements of the Securities Act and the Rules and the Exchange Act and the rules and regulations of the Commission thereunder and (ii) did not or will not, contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary in order to make the statements therein not misleading. When any Preliminary Prospectus or Prospectus was first filed with the Commission (whether filed as part of the Registration Statement or any amendment thereto or pursuant to Rule 424 of the Rules) and when any amendment thereof or supplement thereto was first filed with the Commission, such Preliminary Prospectus or Prospectus as amended or supplemented complied in all material respects with the applicable provisions of the Securities Act and the Rules and did not or will not, contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. If applicable, each Preliminary Prospectus and the Prospectus delivered to the Underwriters for use in connection with this offering was identical to the electronically transmitted copies thereof filed with the Commission pursuant to EDGAR, except to the extent permitted by Regulation S-T. Notwithstanding the foregoing, none of the representations and warranties in this paragraph 2(a) shall apply to statements in, or omissions from, the Registration Statement, any Preliminary Prospectus or the Prospectus made in reliance upon, and in conformity with, information herein or otherwise furnished in writing by the Representative on behalf of the several Underwriters specifically for use in the Registration Statement, any Preliminary Prospectus or the Prospectus, as the case may be. With respect to the preceding sentence, the Company acknowledges that the only information furnished in writing by the Representative on behalf of the several Underwriters for use in the Registration Statement, any Preliminary Prospectus or the Prospectus is the statements contained in the fourth and tenth paragraphs under the caption "Underwriting" in the Prospectus (collectively, the "Underwriter Information").

(b) As of the Applicable Time (as hereinafter defined), the Statutory Prospectus (as hereinafter defined), as supplemented by the description of the offering included on Schedule III hereto and provided to investors by the Underwriters orally or pursuant to a notice complying with Rule 134 prior to the Applicable Time and any other individual Issuer Free Writing Prospectus listed on Schedule IV hereto, all considered together (collectively, the “General Disclosure Package”), did not include any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; and each individual Issuer Free Writing Prospectus listed on Schedule IV hereto does not conflict with the information contained in the Registration Statement, the Statutory Prospectus or the Prospectus and each Issuer Free Writing Prospectus, when considered together with the General Disclosure Package as of the Applicable Time, did not include any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided, however, that this representation and warranty shall not apply to statements in or omissions in the General Disclosure Package or an Issuer Free Writing Prospectus made in reliance upon and in conformity with the Underwriter Information.

Each Issuer Free Writing Prospectus (as hereinafter defined), including any electronic road show (including without limitation any “bona fide electronic road show” as defined in Rule 433(h)(5) under the Securities Act) (each, a “Road Show”) (i) is identified in Schedule IV hereto and (ii) complied when issued, and complies, in each case, in all material respects with the requirements of the Securities Act and the Rules and the Exchange Act and the rules and regulations of the Commission thereunder.

As used in this Section and elsewhere in this Agreement:

“Applicable Time” means 9:00 a.m. (Eastern time) on the date of this Underwriting Agreement.

“Statutory Prospectus” as of any time means the Preliminary Prospectus relating to the Shares that is included in the Registration Statement immediately prior to the Applicable Time, including any document incorporated by reference therein and any prospectus supplement deemed to be a part thereof.

“Issuer Free Writing Prospectus” means each “free writing prospectus” (as defined in Rule 405 of the Rules) prepared by or on behalf of the Company or used or referred to by the Company in connection with the offering of the Shares, including, without limitation, each Road Show.

(c) The Registration Statement is effective under the Securities Act and no stop order preventing or suspending the effectiveness of the Registration Statement or suspending or preventing the use of any Preliminary Prospectus, the Prospectus or any “free writing prospectus”, as defined in Rule 405 under the Rules, has been issued by the Commission and no proceedings for that purpose have been instituted or are threatened under the Securities Act. Any required filing of any Preliminary Prospectus and/or the Prospectus and any supplement thereto pursuant to Rule 424(b) of the Rules has been or will be made in the manner and within the time period required by such Rule 424(b). Any material required to be filed by the Company pursuant to Rule 433(d) or Rule 163(b)(2) of the Rules has been or will be made in the manner and within the time period required by such Rules.

(d) The documents incorporated by reference in the Registration Statement, any Preliminary Prospectus and the Prospectus, at the time they became effective or were filed with the Commission, as the case may be, complied in all material respects with the requirements of the Securities Act or the Exchange Act, as applicable, and the rules and regulations of the Commission thereunder, and none of such documents contained an untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading, and any further documents so filed and incorporated by reference in the Registration Statement, any Preliminary Prospectus and the Prospectus, when such documents become effective or are filed with the Commission, as the case may be, will conform in all material respects to the requirements of the Securities Act or the Exchange Act, as applicable, and the rules and regulations of the Commission thereunder and will not contain an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they are made, not misleading.

(e) Each Issuer Free Writing Prospectus, as of its issue date and at all subsequent times through the completion of the public offer and sale of the Shares or until any earlier date that the Company notified or notifies the Representative as described in the next sentence, did not, does not and will not include any information that conflicted, conflicts or will conflict with the information contained in the Registration Statement, including any document incorporated by reference therein and any prospectus supplement deemed to be a part thereof that has not been superseded or modified.

If at any time following issuance of an Issuer Free Writing Prospectus there occurred or occurs an event or development as a result of which such Issuer Free Writing Prospectus conflicted or would conflict with the information contained in the Registration Statement, the Statutory Prospectus or the Prospectus or included or would include an untrue statement of a material fact or omitted or would omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances prevailing at the subsequent time, not misleading, the Company has promptly notified or will promptly notify the Representative and has promptly amended or will promptly amend or supplement, at its own expense, such Issuer Free Writing Prospectus to eliminate or correct such conflict, untrue statement or omission.

(f) The financial statements of the Company (including all notes and schedules thereto) included in the Registration Statement, the Statutory Prospectus and Prospectus present fairly the financial position of the Company and its consolidated subsidiaries at the dates indicated and the statement of operations, stockholders' equity and cash flows of the Company and its consolidated subsidiaries for the periods specified; and such financial statements and related schedules and notes thereto, and the unaudited financial information filed with the Commission as part of the Registration Statement, have been prepared in conformity with generally accepted accounting principles, consistently applied throughout the periods involved. The selected financial data included in the Statutory Prospectus and Prospectus present fairly the information shown therein as at the respective dates and for the respective periods specified and have been presented on a basis consistent with the consolidated financial statements set forth in the Prospectus and other financial information. The pro forma financial statements and the related notes thereto, if any, included in the Registration Statement, the Statutory Prospectus and the Prospectus present fairly the information shown therein, have been prepared in accordance with the Commission's rules and guidelines with respect to pro forma financial statements and have been properly compiled on the bases described therein, and the assumptions used in the preparation thereof are reasonable and the adjustments used therein are appropriate to give effect to the transactions and circumstances referred to therein.

(g) Marcum LLP (the “Auditor”) whose reports are filed with the Commission as a part of the Registration Statement, are and, during the periods covered by their reports, were independent public accountants as required by the Securities Act and the Rules.

(h) The Company and each of its subsidiaries, including each entity (corporation, partnership, joint venture, association or other business organization) controlled directly or indirectly by the Company (each, a “subsidiary”), is duly organized, validly existing and in good standing under the laws of their respective jurisdictions of incorporation or organization and each such entity has all requisite power and authority to carry on its business as is currently being conducted as described in the Statutory Prospectus and the Prospectus, and to own, lease and operate its properties. All of the issued shares of capital stock of, or other ownership interests in, each subsidiary have been duly and validly authorized and issued and are fully paid and non-assessable and are owned, directly or indirectly, by the Company, free and clear of any lien, charge, mortgage, pledge, security interest, claim, limitation on voting rights, equity, trust or other encumbrance, preferential arrangement, defect or restriction of any kind whatsoever. The Company and each of its subsidiaries is duly qualified to do business and is in good standing as a foreign corporation in each jurisdiction in which the nature of the business conducted by it or location of the assets or properties owned, leased or licensed by it requires such qualification, except for such jurisdictions where the failure to so qualify individually or in the aggregate would not have a material adverse effect on the assets, properties, condition, financial or otherwise, or in the results of operations, business affairs or business prospects of the Company and its subsidiaries considered as a whole (a “Material Adverse Effect”); and to the Company’s knowledge, no proceeding has been instituted in any such jurisdiction revoking, limiting or curtailing, or seeking to revoke, limit or curtail, such power and authority or qualification.

(i) The Registration Statement initially became effective on October 5, 2018.

(j) The Company and each of its subsidiaries has all requisite corporate power and authority, and all necessary authorizations, approvals, consents, orders, licenses, certificates and permits of and from all governmental or regulatory bodies or any other person or entity (collectively, the “Permits”), to own, lease and license its assets and properties and conduct its business, all of which are valid and in full force and effect, except where the lack of such Permits, individually or in the aggregate, would not have a Material Adverse Effect. The Company and each of its subsidiaries has fulfilled and performed in all material respects all of its obligations with respect to such Permits and no event has occurred that allows, or after notice or lapse of time would allow, revocation or termination thereof or results in any other material impairment of the rights of the Company thereunder. Except as may be required under the Securities Act and state and foreign Blue Sky laws, no other Permits are required to enter into, deliver and perform this Agreement and to issue and sell the Shares.

(k) (i) At the earliest time after the filing of the Registration Statement that the Company or another offering participant made a *bona fide* offer (within the meaning of Rule 164(h)(2) of the Rules) of the Shares and (ii) at the date hereof, the Company was not and is not an “ineligible issuer,” as defined in Rule 405 of the Rules, including (but not limited to) the Company or any other subsidiary in the preceding three years not having been convicted of a felony or misdemeanor or having been made the subject of a judicial or administrative decree or order as described in Rule 405 of the Rules.

(l) The Company and each of its subsidiaries owns or possesses adequate rights to use all patents, patent rights, inventions, trademarks, trademark applications, trade names, service marks, copyrights, copyright applications, licenses, know-how and other similar rights and proprietary knowledge (collectively, “Intangibles”) necessary for the conduct of its business, except where the lack of such ownership or rights to use would not have a Material Adverse Effect. Neither the Company nor any of its subsidiaries has received any written notice of, or is not aware of, any infringement of or conflict with asserted rights of others with respect to any Intangibles.

(m) The Company and each of its subsidiaries has good and marketable title in fee simple to all real property, and good and marketable title to all other property owned by it that is material to the business of the Company or any subsidiary, in each case free and clear of all liens, encumbrances, and defects, except such as are described in the Registration Statement, the Statutory Prospectus or the Prospectus or such as do not materially affect the value of such property and do not materially interfere with the use made or proposed to be made of such property by the Company and its subsidiaries. All property held under lease by the Company and its subsidiaries is held by them under valid, existing and enforceable leases, free and clear of all liens, encumbrances, claims, security interests and defects, except such as are not material and do not materially interfere with the use made or proposed to be made of such property by the Company and its subsidiaries, in each case except as described in the Registration Statement, the Statutory Prospectus or the Prospectus.

(n) Subsequent to the respective dates as of which information is given in the Registration Statement, the Statutory Prospectus and the Prospectus, (i) there has not occurred any event which could have a Material Adverse Effect; (ii) neither the Company nor any of its subsidiaries has sustained any loss or interference with its assets, businesses or properties (whether owned or leased) from fire, explosion, earthquake, flood or other calamity, whether or not covered by insurance, or from any labor dispute or any court or legislative or other governmental action, order or decree which would have a Material Adverse Effect; and (iii) except as described in the immediately following sentence, since the date of the latest balance sheet included in the Registration Statement and the Prospectus, neither the Company nor its subsidiaries has (A) issued any securities (other than securities issued pursuant to employee benefit plans, qualified stock options plans or other employee compensation plans or pursuant to outstanding options, rights or warrants) or incurred any liability or obligation, direct or contingent, for borrowed money, except such liabilities or obligations incurred in the ordinary course of business, (B) entered into any transaction not in the ordinary course of business or (C) except for regular dividends on the Common Stock in amounts per share that are consistent with past practice, declared or paid any dividend or made any distribution on any shares of its stock or redeemed, purchased or otherwise acquired or agreed to redeem, purchase or otherwise acquire any shares of its capital stock. The Company intends to conduct simultaneously herewith, an underwritten registered offering of \$10 million of its convertible notes pursuant to the Registration Statement (the “Note Offering”).

(o) There is no document, contract or other agreement required to be described in the Registration Statement, the Statutory Prospectus or the Prospectus or to be filed as an exhibit to the Registration Statement which is not described or filed as required by the Securities Act or Rules. Each description of a contract, document or other agreement in the Registration Statement, the Statutory Prospectus or the Prospectus accurately reflects in all respects the terms of the underlying contract, document or other agreement. Each contract, document or other agreement described in the Registration Statement, the Statutory Prospectus or the Prospectus or listed in the Exhibits to the Registration Statement or incorporated by reference is in full force and effect and is valid and enforceable by and against the Company or its subsidiary, as the case may be, in accordance with its terms. Neither the Company nor any of its subsidiaries, if a subsidiary is a party, nor to the Company's knowledge, any other party is in default in the observance or performance of any term or obligation to be performed by it under any such agreement, and no event has occurred which with notice or lapse of time or both would constitute such a default, in any such case which default or event, individually or in the aggregate, would have a Material Adverse Effect. No default exists, and no event has occurred which with notice or lapse of time or both would constitute a default, in the due performance and observance of any term, covenant or condition, by the Company or its subsidiary, if a subsidiary is a party thereto, of any other agreement or instrument to which the Company or any of its subsidiaries is a party or by which Company or its properties or business or a subsidiary or its properties or business may be bound or affected which default or event, individually or in the aggregate, would have a Material Adverse Effect.

(p) The statistical and market related data included in the Registration Statement, the Statutory Prospectus or the Prospectus are based on or derived from sources that the Company believes to be reliable and accurate.

(q) Neither the Company nor any subsidiary (i) is in violation of its certificate or articles of incorporation, by-laws, certificate of formation, limited liability company agreement, partnership agreement or other organizational documents, (ii) is in default under, and no event has occurred which, with notice or lapse of time, or both, would constitute a default under, or result in the creation or imposition of any lien, charge, mortgage, pledge, security interest, claim, limitation on voting rights, equity, trust or other encumbrance, preferential arrangement, defect or restriction of any kind whatsoever, upon, any property or assets of the Company or any subsidiary pursuant to, any bond, debenture, note, indenture, mortgage, deed of trust, loan agreement or other agreement or instrument to which it is a party or by which it is bound or to which any of its properties or assets is subject or (iii) is in violation of any statute, law, rule, regulation, ordinance, directive, judgment, decree or order of any judicial, regulatory or other legal or governmental agency or body, foreign or domestic, except (in the case of clauses (ii) and (iii) above) for violations or defaults that could not (individually or in the aggregate) reasonably be expected to have a Material Adverse Effect.

(r) This Agreement has been duly authorized, executed and delivered by the Company.

(s) Neither the execution, delivery and performance of this Agreement by the Company nor the consummation of any of the transactions contemplated hereby (including, without limitation, the issuance and sale by the Company of the Shares) will (i) give rise to a right to terminate or accelerate the due date of any payment due under, or conflict with or result in the breach of any term or provision of, or constitute a default (or an event which with notice or lapse of time or both would constitute a default) under, or require any consent or waiver under, or result in the execution or imposition of any lien, charge or encumbrance upon any properties or assets of the Company or its subsidiaries pursuant to the terms of, any indenture, mortgage, deed of trust or other agreement or instrument to which the Company or any of its subsidiaries is a party or by which either the Company or its subsidiaries or any of their properties or businesses is bound, or any franchise, license, permit, judgment, decree, order, statute, rule or regulation applicable to the Company or any of its subsidiaries, in each case, other than rights to terminate or accelerate, conflicts, defaults, liens, charges or encumbrances that would not, individually or in the aggregate, have a Material Adverse Effect or (ii) violate any provision of the charter or by-laws of the Company or any of its subsidiaries, in each case, except for such consents or waivers which have already been obtained and are in full force and effect.

(t) The Company has authorized and, as of June 30, 2018, outstanding capital stock as set forth under the caption “Consolidated Balance Sheets” in the Company’s Annual Report on Form 10-K for the fiscal year ended June 30, 2018. The certificates evidencing the Shares are in due and proper legal form and have been duly authorized for issuance by the Company. All of the issued and outstanding shares of Common Stock have been duly and validly issued and are fully paid and nonassessable. There are no statutory preemptive or other similar rights to subscribe for or to purchase or acquire any shares of Common Stock of the Company or any of its subsidiaries or any such rights pursuant to its Certificate of Incorporation or by-laws or any agreement or instrument to or by which the Company or any of its subsidiaries is a party or bound. The Shares, when issued and sold pursuant to this Agreement, will be duly and validly issued, fully paid and nonassessable and none of them will be issued in violation of any preemptive or other similar right. Except as disclosed in the Registration Statement, the Statutory Prospectus and the Prospectus, there is no outstanding option, warrant or other right calling for the issuance of, and, except for the Note Offering there is no commitment, plan or arrangement to issue, any share of stock of the Company or any of its subsidiaries or any security convertible into, or exercisable or exchangeable for, such stock. The exercise price of each option to acquire Common Stock (each, a “Company Stock Option”) is no less than the fair market value of a share of Common Stock as determined on the date of grant of such Company Stock Option. All grants of Company Stock Options were validly issued and properly approved by the Board of Directors of the Company in compliance in all material respects with all applicable laws and the terms of the plans under which such Company Stock Options were issued and were recorded on the Company Financial Statements, including the documents incorporated by reference in the Registration Statement, the Statutory Prospectus and the Prospectus, in accordance with GAAP, and no such grants involved any “back dating”, “forward dating,” “spring loading” or similar practices with respect to the effective date of grant. The Common Stock and the Shares conform in all material respects to all statements in relation thereto contained in the Registration Statement and the Statutory Prospectus and the Prospectus. All outstanding shares of capital stock of each of the Company’s subsidiaries have been duly authorized and validly issued, and are fully paid and nonassessable and are owned directly by the Company or by another wholly-owned subsidiary of the Company free and clear of any security interests, liens, encumbrances, equities or claims, other than those described in the Registration Statement, the Statutory Prospectus and the Prospectus.

(u) No holder of any security of the Company has any right, which has not been waived, to have any security owned by such holder included in the Registration Statement or to demand registration of any security owned by such holder for a period of 180 days after the date of this Agreement. Each director and executive officer of the Company listed on Schedule II hereto has delivered to the Representative his or her enforceable written lock-up agreement in the form attached to this Agreement as Exhibit A hereto ("Lock-Up Agreement").

(v) There are no legal or governmental proceedings pending to which the Company or any of its subsidiaries is a party or of which any property of the Company or any of its subsidiaries is the subject which, if determined adversely to the Company or any of its subsidiaries could individually or in the aggregate have a Material Adverse Effect; and, to the knowledge of the Company, no such proceedings are threatened or contemplated by governmental authorities or threatened by others.

(w) All necessary corporate action has been duly and validly taken by the Company and to authorize the execution, delivery and performance of this Agreement and the issuance and sale of the Shares by the Company.

(x) Neither the Company nor any of its subsidiaries is involved in any labor dispute nor, to the knowledge of the Company, is any such dispute threatened, in each case, which dispute would have a Material Adverse Effect. The Company is not aware of any existing or imminent labor disturbance by the employees of any of its principal suppliers or contractors which would have a Material Adverse Effect. The Company is not aware of any threatened or pending litigation between the Company or its subsidiaries and any of its executive officers which, if adversely determined, could, to the Company, have a Material Adverse Effect, and the Company has no reason to believe that such officers will not remain in the employment of the Company.

(y) No transaction has occurred between or among the Company and any of its officers or directors, shareholders or any affiliate or affiliates of any such officer or director or shareholder that is required to be described in and is not described in the Registration Statement, the Statutory Prospectus and the Prospectus.

(z) The Company has not taken, nor will it take, directly or indirectly, any action designed to or which might reasonably be expected to cause or result in, or which has constituted or which might reasonably be expected to constitute, the stabilization or manipulation of the price of the Common Stock or any security of the Company to facilitate the sale or resale of any of the Shares.

(aa) The Company and each of its subsidiaries has filed all Federal, state, local and foreign tax returns which are required to be filed through the date hereof, which returns are true and correct in all material respects or has received timely extensions thereof, and has paid all taxes shown on such returns and all assessments received by it to the extent that the same are material and have become due. There are no tax audits or investigations pending, which if adversely determined would have a Material Adverse Effect; nor are there any material proposed additional tax assessments against the Company or any of its subsidiaries.

(bb) The Common Stock is registered pursuant to Section 12(b) of the Exchange Act and listed on the Nasdaq Capital Market. The Company has taken no action designed to, or likely to have the effect of, terminating the registration of the Common Stock under the Exchange Act or the quotation of the Common Stock on the Nasdaq Capital Market, nor has the Company received any notification that the Commission or the Nasdaq Capital Market is contemplating terminating such registration or quotation.

(cc) The books, records and accounts of the Company and its subsidiaries accurately and fairly reflect, the transactions in, and dispositions of, the assets of, and the results of operations of, the Company and its subsidiaries. The Company and each of its subsidiaries maintains a system of internal accounting controls sufficient to provide reasonable assurances that (i) transactions are executed in accordance with management's general or specific authorizations, (ii) transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles and to maintain asset accountability, (iii) access to assets is permitted only in accordance with management's general or specific authorization and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences.

(dd) The Company has established and maintains "disclosure controls and procedures" (as such term is defined in Rule 13a-15 under the Exchange Act), which: (i) are designed to ensure that material information relating to the Company is made known to the Company's principal executive officer and its principal financial officer by others within the Company; (ii) provide for the periodic evaluation of the effectiveness of such disclosure controls and procedures at the end of the periods in which the periodic reports are required to be prepared; and (iii) are effective in all material respects to perform the functions for which they were established.

(ee) Based on the evaluation of its disclosure controls and procedures, the Company is not aware of (i) any material weakness or significant deficiency in the design or operation of internal controls which could adversely affect the Company's ability to record, process, summarize and report financial data or any material weaknesses in internal controls; or (ii) any fraud, whether or not material, that involves management or other employees who have a role in the Company's internal controls.

(ff) Except as described in the Statutory Prospectus and the Prospectus and as preapproved in accordance with the requirements set forth in Section 10A of the Exchange Act, the Auditor has not been engaged by the Company to perform any "prohibited activities" (as defined in Section 10A of the Exchange Act).

(gg) Except as described in the Statutory Prospectus and the Prospectus, there are no material off-balance sheet arrangements (as defined in Item 303 of Regulation S-K) that have or are reasonably likely to have a material current or future effect on the Company's financial condition, revenues or expenses, changes in financial condition, results of operations, liquidity, capital expenditures or capital resources.

(hh) The Company's Board of Directors has validly appointed an audit committee whose composition satisfies the requirements of Rule 5605 of the NASDAQ Stock Market and the Board of Directors and/or the audit committee has adopted a charter that satisfies the requirements of Rule 5605 of the NASDAQ Stock Market. The audit committee has reviewed the adequacy of its charter within the past twelve months.

(ii) There is and has been no failure on the part of the Company or any of its directors or officers, in their capacities as such, to comply in all material respects with any applicable provision of the Sarbanes-Oxley Act, including, without limitation, Section 402 related to loans and Sections 302 and 906 related to certifications.

(jj) The Company and its subsidiaries are insured by insurers of recognized financial responsibility against such losses and risks and in such amounts as are customary in the businesses in which they are engaged or propose to engage after giving effect to the transactions described in the Statutory Prospectus and the Prospectus; all policies of insurance and fidelity or surety bonds insuring the Company or any of its subsidiaries or the Company's or its subsidiaries' respective businesses, assets, employees, officers and directors are in full force and effect; the Company and each of its subsidiaries are in compliance with the terms of such policies and instruments in all material respects; and neither the Company nor any subsidiary of the Company has any reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage from similar insurers as may be necessary to continue its business at a cost that is not materially greater than the current cost. Neither the Company nor any of its subsidiaries has been denied any insurance coverage which it has sought or for which it has applied.

(kk) Each approval, consent, order, authorization, designation, declaration or filing of, by or with any regulatory, administrative or other governmental body necessary in connection with the execution and delivery by the Company of this Agreement and the consummation of the transactions herein contemplated required to be obtained or performed by the Company (except (i) such additional steps as may be required by the Financial Industry Regulatory Authority ("FINRA"); (ii) as may be necessary to qualify the Shares for public offering by the Underwriters under the state securities or Blue Sky laws); (iii) the filing of a notice of a change in shares outstanding and related materials with Nasdaq following the Firm Shares Closing Date or (iv) any filings required under the Exchange Act, which have been or will be made when and how required) has been obtained or made and is in full force and effect.

(ll) None of the Company, nor any of its officers, directors or, to the best knowledge of the Company, any beneficial owner of five percent or greater of the Common Stock, is affiliated or associated with any broker-dealer that is a member of FINRA, except as disclosed in the Registration Statement.

(mm) (i) Each of the Company and each of its subsidiaries is in compliance in all material respects with all rules, laws and regulation relating to the use, treatment, storage and disposal of toxic substances and protection of health or the environment (“Environmental Laws”) which are applicable to its business; (ii) neither the Company nor its subsidiaries has received any notice from any governmental authority or third party of an asserted claim under Environmental Laws; (iii) each of the Company and each of its subsidiaries has received all permits, licenses or other approvals required of it under applicable Environmental Laws to conduct its business and is in compliance in all material respects with all terms and conditions of any such permit, license or approval; (iv) to the Company’s knowledge, no facts currently exist that will require the Company or any of its subsidiaries to make future material capital expenditures to comply with Environmental Laws; and (v) no property which is or has been owned, leased or occupied by the Company or its subsidiaries has been designated as a Superfund site pursuant to the Comprehensive Environmental Response, Compensation of Liability Act of 1980, as amended (42 U.S.C. Section 9601, et. seq.) (“CERCLA 1980”) or otherwise designated as a contaminated site under applicable state or local law. Neither the Company nor any of its subsidiaries has been named as a “potentially responsible party” under the CERCLA 1980.

(nn) [RESERVED]

(oo) The Company is not and, immediately after giving effect to the offering and sale of the Shares and the application of proceeds thereof as described in the Statutory Prospectus and the Prospectus, will not be an “investment company” within the meaning of the Investment Company Act of 1940, as amended (the “Investment Company Act”).

(pp) The Company or any other person associated with or acting on behalf of the Company including, without limitation, any director, officer, agent or employee of the Company or its subsidiaries, has not, directly or indirectly, while acting on behalf of the Company or its subsidiaries (i) used any corporate funds for unlawful contributions, gifts, entertainment or other unlawful expenses relating to political activity; (ii) made any unlawful payment to foreign or domestic government officials or employees or to foreign or domestic political parties or campaigns from corporate funds; (iii) violated any provision of the Foreign Corrupt Practices Act of 1977, as amended; or (iv) made any other unlawful payment.

(qq) The operations of the Company and its subsidiaries are and have been conducted at all times in compliance with applicable financial recordkeeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the applicable money laundering statutes of all jurisdictions, the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any governmental agency (collectively, the “Money Laundering Laws”) and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any of its subsidiaries with respect to the Money Laundering Laws is pending, or to the best knowledge of the Company, threatened.

(rr) Neither the Company nor any of its subsidiaries nor, to the knowledge of the Company, any director, officer, agent, employee or affiliate of the Company or any of its subsidiaries is currently subject to any U.S. sanctions administered by the Office of Foreign Assets Control of the U.S. Treasury Department (“OFAC”); and the Company will not directly or indirectly use the proceeds of the offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other person or entity, for the purpose of financing the activities of any person currently subject to any U.S. sanctions administered by OFAC.

(ss) Except as described in the Statutory Prospectus and the Prospectus, the Company has not sold or issued any shares of Common Stock during the six-month period preceding the date of the Prospectus, including any sales pursuant to Rule 144A under, or Regulations D or S of, the Securities Act, other than shares issued pursuant to employee benefit plans, qualified stock options plans or other employee compensation plans or pursuant to outstanding options, rights or warrants.

(tt) The Company has fulfilled its obligations, if any, in all material respects under the minimum funding standards of Section 302 of the U.S. Employee Retirement Income Security Act of 1974 (“ERISA”) and the regulations and published interpretations thereunder with respect to each “plan” as defined in Section 3(3) of ERISA and such regulations and published interpretations in which its employees are eligible to participate and each such plan is in compliance in all material respects with the presently applicable provisions of ERISA and such regulations and published interpretations. No “Reportable Event” (as defined in 12 ERISA) has occurred with respect to any “Pension Plan” (as defined in ERISA) for which the Company could have any liability.

(uu) None of the Company, its directors or its officers has distributed nor will distribute prior to the later of (i) the Firm Shares Closing Date, or the Option Shares Closing Date, and (ii) completion of the distribution of the Shares, any offering material in connection with the offering and sale of the Shares other than any Preliminary Prospectus, the Prospectus, the Registration Statement and other materials, if any, permitted by the Securities Act and consistent with Section 4(d) below.

(vv) Since the date of the preliminary prospectus included in the Registration Statement filed with the Commission on October 5, 2018 (or, if earlier, the first date on which the Company engaged directly or through any Person authorized to act on its behalf in any Testing-the-Waters Communication (as defined herein)) through the date hereof, the Company has been and is an “emerging growth company,” as defined in Section 2(a) of the Securities Act (an “Emerging Growth Company”). “Testing-the-Waters Communication” means any oral or written communication with potential investors undertaken in reliance on Section 5(d) of the Securities Act.

(ww) The Company (a) has not alone engaged in any Testing-the-Waters Communication other than Testing-the-Waters Communications with the consent of the Representative with entities that are qualified institutional buyers within the meaning of Rule 144A under the Securities Act or institutions that are accredited investors within the meaning of Rule 501 under the Securities Act and (b) has not authorized anyone other than the Representative to engage in Testing-the-Waters Communications. The Company reconfirms that the Representative has been authorized to act on its behalf in undertaking Testing-the-Waters Communications. The Company has not distributed any Written Testing-the-Waters Communications (as defined herein). “Written Testing-the-Waters Communication” means any Testing-the-Waters Communication that is a written communication within the meaning of Rule 405 under the Securities Act.

(xx) The Company maintains written policies and procedures reasonably designed for the Company to remain in substantial compliance with the laws, rules and regulations applicable to it and its business activities. The Company maintains supervisory policies and procedures reasonably designed to permit supervisors to monitor the Company's substantial compliance with applicable laws, rules and regulations. The Company maintains an internal audit function reasonably designed to review the efficacy of the Company's compliance and supervisory policies and procedures.

3 . Conditions of the Underwriters' Obligations. The obligations of the Underwriters under this Agreement are several and not joint. The respective obligations of the Underwriters to purchase the Shares are subject to each of the following terms and conditions:

(a) Notification that the Registration Statement has become effective shall have been received by the Representative and the Prospectus shall have been timely filed with the Commission in accordance with Section 4(a) of this Agreement and any material required to be filed by the Company pursuant to Rule 433(d) of the Rules shall have been timely filed with the Commission in accordance with such rule.

(b) No order preventing or suspending the use of any Preliminary Prospectus, the Prospectus or any "free writing prospectus" (as defined in Rule 405 of the Rules), shall have been or shall be in effect and no order suspending the effectiveness of the Registration Statement shall be in effect and no proceedings for such purpose shall be pending before or threatened by the Commission, and any requests for additional information on the part of the Commission (to be included in the Registration Statement or the Prospectus or otherwise) shall have been complied with to the satisfaction of the Commission and the Representative. If the Company has elected to rely upon Rule 430A, Rule 430A information previously omitted from the effective Registration Statement pursuant to Rule 430A shall have been transmitted to the Commission for filing pursuant to Rule 424(b) within the prescribed time period and the Company shall have provided evidence satisfactory to the Underwriters of such timely filing, or a post-effective amendment providing such information shall have been promptly filed and declared effective in accordance with the requirements of Rule 430A.

(c) The representations and warranties of the Company contained in this Agreement and in any certificates delivered pursuant to Section 3(d) shall be true and correct when made and on and as of each Closing Date as if made on such date. The Company shall have performed all covenants and agreements and satisfied all the conditions contained in this Agreement required to be performed or satisfied by it at or before such Closing Date.

(d) The Representative shall have received on each Closing Date a certificate, addressed to the Representative and dated such Closing Date, of the chief executive or chief operating officer and the chief financial officer or chief accounting officer of the Company to the effect that: (i) the representations, warranties and agreements of the Company in this Agreement were true and correct when made and are true and correct as of such Closing Date; (ii) the Company has performed all covenants and agreements and satisfied all conditions contained herein; (iii) they have carefully examined the Registration Statement, the Prospectus, the General Disclosure Package, and any individual Issuer Free Writing Prospectus and, in their opinion (A) as of the Effective Date the Registration Statement and Prospectus did not include, and as of the Applicable Time, neither (i) the General Disclosure Package, nor (ii) any individual Issuer Free Writing Prospectus, when considered together with the General Disclosure Package, included, any untrue statement of a material fact and did not omit to state a material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they were made, not misleading, and (B) since the Effective Date no event has occurred which should have been set forth in a supplement or otherwise required an amendment to the Registration Statement, the Statutory Prospectus or the Prospectus; (iv) no stop order suspending the effectiveness of the Registration Statement has been issued and, to their knowledge, no proceedings for that purpose have been instituted or are pending under the Securities Act and (v) there has not occurred any material adverse change in the assets, properties, condition, financial or otherwise, or in the results of operations, business affairs or business prospects of the Company and its subsidiaries considered as a whole.

(e) The Representative shall have received: (i) simultaneously with the execution of this Agreement a signed letter from the Auditor addressed to the Representative and dated the date of this Agreement, in form and substance reasonably satisfactory to the Representative, containing statements and information of the type ordinarily included in accountants' "comfort letters" to underwriters with respect to the financial statements and certain financial information contained in the Registration Statement and the Disclosure Package, and (ii) on each Closing Date, a signed letter from the Auditor addressed to the Representative and dated the date of such Closing Date(s), in form and substance reasonably satisfactory to the Representative containing statements and information of the type ordinarily included in accountants' "comfort letters" to underwriters with respect to the financial statements and certain financial information contained in the Registration Statement and the Prospectus.

(f) The Representative shall have received on each Closing Date from K&L Gates LLP, counsel for the Company, an opinion and negative assurance statement, addressed to the Representative and dated such Closing Date, in form and substance reasonably satisfactory to the Representative.

(g) The Representative shall have received on each Closing Date from OGAWA Professional Corporation, intellectual property counsel for the Company, an opinion and negative assurance statement, addressed to the Representative and dated such Closing Date, in form and substance reasonably satisfactory to the Underwriter.

(h) The Representative shall have received on each Closing Date from Lowenstein Sandler LLP, counsel for the Representative, an opinion and negative assurance statement, addressed to the Representative and dated such Closing Date, in form and substance reasonably satisfactory to the Underwriter.

(i) All proceedings taken in connection with the sale of the Firm Shares and the Option Shares as herein contemplated shall be reasonably satisfactory in form and substance to the Representative, and their counsel.

(j) The Representative shall have received copies of the Lock-up Agreements executed by each entity or person listed on Schedule II hereto.

(k) The Company shall have submitted a Notification Form: Listing of Additional Shares with the Nasdaq Capital Market with respect to the Shares and Nasdaq shall have raised no objection with respect to the listing of the Shares which has not been resolved to the reasonable satisfaction of the Representative on or before the Closing Date.

(l) The Representative shall be reasonably satisfied that since the respective dates as of which information is given in the Registration Statement, the Statutory Prospectus, the General Disclosure Package and the Prospectus, (i) there shall not have been any material change in the capital stock of the Company or any material change in the indebtedness (other than in the ordinary course of business) of the Company, (ii) except as set forth or contemplated by the Registration Statement, the Statutory Prospectus, the General Disclosure Package or the Prospectus, no material oral or written agreement or other transaction shall have been entered into by the Company that is not in the ordinary course of business or that could reasonably be expected to result in a material reduction in the future earnings of the Company, (iii) no loss or damage (whether or not insured) to the property of the Company shall have been sustained that had or could reasonably be expected to have a Material Adverse Effect, (iv) no legal or governmental action, suit or proceeding affecting the Company or any of its properties that is material to the Company or that affects or could reasonably be expected to affect the transactions contemplated by this Agreement shall have been instituted or threatened and (v) there shall not have been any material change in the assets, properties, condition (financial or otherwise), or in the results of operations, business affairs or business prospects of the Company or its subsidiaries considered as a whole that makes it impractical or inadvisable in the Representative's judgment to proceed with the purchase or offering of the Shares as contemplated hereby.

(m) On or prior to the Firm Shares Closing Date, FINRA shall have confirmed that it has not raised any objection with respect to the fairness and reasonableness of the underwriting terms and agreements in connection with the offering of the Shares.

(n) The Company shall have furnished or caused to be furnished to the Representative such further certificates or documents as the Representative shall have reasonably requested.

4. Covenants and other Agreements of the Company and the Underwriters.

(a) The Company covenants and agrees as follows:

(i) The Company will use its best efforts to cause the Registration Statement, if not effective at the time of execution of this Agreement, and any amendments thereto, to become effective as promptly as possible. The Company shall prepare the Prospectus in a form approved by the Representative and file such Prospectus pursuant to Rule 424(b) under the Securities Act not later than the Commission's close of business on the second business day following the execution and delivery of this Agreement, or, if applicable, such earlier time as may be required by the Rules. The Company will file with the Commission all Issuer Free Writing Prospectuses in the time and manner required under Rules 433(d) or 163(b)(2), as the case may be.

(ii) The Company shall promptly advise the Representative in writing (A) when any post-effective amendment to the Registration Statement shall have become effective or any supplement to the Prospectus shall have been filed, (B) of any request by the Commission for any amendment of the Registration Statement or the Prospectus or for any additional information, (C) of the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement or of any order preventing or suspending the use of any preliminary prospectus or any “free writing prospectus”, as defined in Rule 405 of the Rules, or the institution or threatening of any proceeding for that purpose and (D) of the receipt by the Company of any notification with respect to the suspension of the qualification of the Shares for sale in any jurisdiction or the initiation or threatening of any proceeding for such purpose. The Company shall not file any amendment of the Registration Statement or supplement to the Prospectus or any document incorporated by reference in the Registration Statement or any Issuer Free Writing Prospectus unless the Company has furnished the Representative a copy for its review prior to filing and shall not file any such proposed amendment or supplement to which the Representative reasonably object. The Company shall use its best efforts to prevent the issuance of any such stop order and, if issued, to obtain as soon as possible the withdrawal thereof.

(iii) If, at any time when a prospectus relating to the Shares (or, in lieu thereof, the notice referred to in Rule 173(a) of the Rules) is required to be delivered under the Securities Act, any event occurs as a result of which the Prospectus as then amended or supplemented would include any untrue statement of a material fact or omit to state any material fact necessary to make the statements therein in the light of the circumstances under which they were made not misleading, or if it shall be necessary to amend or supplement the Prospectus to comply with the Securities Act or the Rules or the Exchange Act and the rules and regulations of the Commission thereunder, the Company promptly shall prepare and file with the Commission, subject to the second sentence of paragraph (ii) of this Section 4(a), an amendment or supplement which shall correct such statement or omission or an amendment which shall effect such compliance.

(iv) If at any time following issuance of an Issuer Free Writing Prospectus there occurs an event or development as a result of which such Issuer Free Writing Prospectus would conflict with the information contained in the Registration Statement or would include an untrue statement of a material fact or would omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances prevailing at the subsequent time, not misleading, the Company will promptly notify the Representative and will promptly amend or supplement, at its own expense, such Issuer Free Writing Prospectus to eliminate or correct such conflict or so that the statements in such Issuer Free Writing Prospectus as so amended or supplemented will not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances prevailing at such time, not misleading, as the case may be.

(v) The Company shall make generally available to its security holders and to the Representative as soon as practicable, but not later than 45 days after the end of the 12-month period beginning at the end of the fiscal quarter of the Company during which the Effective Date occurs (or 90 days if such 12-month period coincides with the Company's fiscal year), an earning statement (which need not be audited) of the Company, covering such 12-month period, which shall satisfy the provisions of Section 11(a) of the Securities Act or Rule 158 of the Rules.

(vi) The Company shall furnish to the Representative and counsel for the Underwriters, without charge, signed copies of the Registration Statement (including all exhibits thereto and amendments thereof) and to each other Underwriter a copy of the Registration Statement (without exhibits thereto) and all amendments thereof and, so long as delivery of a prospectus by an Underwriter or dealer may be required by the Securities Act or the Rules, as many copies of any Preliminary Prospectus, any Issuer Free Writing Prospectus and the Prospectus and any amendments thereof and supplements thereto as the Representative may reasonably request. If applicable, the copies of the Registration Statement, preliminary prospectus, any Issuer Free Writing Prospectus and Prospectus and each amendment and supplement thereto furnished to the Underwriters will be identical to the electronically transmitted copies thereof filed with the Commission pursuant to EDGAR, except to the extent permitted by Regulation S-T.

(vii) The Company shall cooperate with the Representative and their counsel in endeavoring to qualify the Shares for offer and sale (or obtain exemptions from the application thereof) in connection with the offering under the laws of such jurisdictions as the Representative may designate and shall maintain such qualifications in effect so long as required for the distribution of the Shares; provided, however, that the Company shall not be required in connection therewith, as a condition thereof, to qualify as a foreign corporation or to execute a general consent to service of process in any jurisdiction or subject itself to taxation as doing business in any jurisdiction.

(viii) The Company, during the period when the Prospectus (or in lieu thereof, the notice referred to in Rule 173(a) of the Rules) is required to be delivered under the Securities Act and the Rules or the Exchange Act, will file all reports and other documents required to be filed with the Commission pursuant to Section 13, 14 or 15 of the Exchange Act within the time periods required by the Exchange Act and the regulations promulgated thereunder.

(ix) Without the prior written consent of the Representative, during the period commencing on and including the date hereof and ending on and including the 90th day following the date hereof (the “**Lock-Up Period**”), the Company and each of its individual directors and executive officers shall not issue, sell or register with the Commission (other than (I) on Form S-8 or on any successor form and (II) pursuant to post-effective amendments to registration statements on Form S-1 effective as of the date hereof, pursuant to which such post-effective amendments will convert such registration statements on Form S-1 into registration statements on Form S-3), or otherwise dispose of, directly or indirectly, any equity securities of the Company (or any securities convertible into, exercisable for or exchangeable for equity securities of the Company), except (1) for the issuance of the Shares pursuant to the Registration Statement and the issuance of shares of Common Stock, options to purchase shares of Common Stock or warrants, restricted stock, restricted stock units or deferred stock units, or the issuance of shares of Common Stock upon exercise, exchange, or vesting in or pursuant to any stock option, warrant, restricted stock, restricted stock units, deferred stock units, stock bonus, stock purchase or other stock plans or arrangements that are either described in the Company’s reports or other documents required to be filed with the Commission under the Exchange Act, the Prospectus or the Statutory Prospectus (including, subject to approval by the Company’s stockholders, the Company’s 2018 Stock Incentive Plan and its Employee Stock Purchase Plan as described in the Company’s definitive proxy statement filed with the Commission on September 18, 2018), (2) as contemplated in the Note Offering, (3) for the disposal of any of the Company’s securities via net exercise, cashless exercise or withholding of any such securities acquired upon exercise, vesting or other means of acquisition in order to pay the exercise price, if any, or to discharge or otherwise satisfy any tax liability incurred as a result of such exercise, vesting or other acquisition; provided that the underlying shares of Common Stock shall continue to be subject to the restrictions on transfer described herein, (4) the issuance of shares of Common Stock to holders of convertible notes outstanding on or after the date hereof upon conversion of any such convertible notes pursuant to and in accordance with the terms thereof (in each case, as described in the Company’s reports or other documents required to be filed with the Commission under the Exchange Act, the Prospectus or the Statutory Prospectus), (5) for the issuance of shares to third parties in connection with strategic, commercial or manufacturing arrangements, provided that such shares are not transferable prior to the end of the Lock-Up Period, (6) for the issuance of shares upon anti-dilution adjustments in accordance with the terms of the Company’s currently outstanding securities as described in the Prospectus or (7) as otherwise permitted under the terms of the lock-up agreements set forth on Exhibit A attached hereto.

(x) On or before completion of this offering, the Company shall make all filings required under applicable securities laws and by the Nasdaq Capital Market (including any required registration under the Exchange Act).

(xi) Prior to the Closing Date, the Company will issue no press release or other communications directly or indirectly except as related to the Note Offering and hold no press conference with respect to the Company, the condition, financial or otherwise, or the earnings, business affairs or business prospects of any of them, or the offering of the Shares without the prior written consent of the Representative unless in the judgment of the Company and its counsel, and after notification to the Representative, such press release or communication is required by law.

(xii) The Company will apply the net proceeds from the offering of the Shares in the manner set forth under "Use of Proceeds" in the Prospectus.

(xiii) The Company will promptly notify the Representative if the Company ceases to be an Emerging Growth Company at any time prior to the later of (a) completion of the distribution of the Shares within the meaning of the Securities Act and (b) completion of the 90 day restricted period referred to in Section 4(a)(ix) hereof.

(xiv) If at any time following the distribution of any Written Testing-the-Waters Communication there occurred or occurs an event or development as a result of which such Written Testing-the-Waters Communication included or would include an untrue statement of a material fact or omitted or would omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances existing at that subsequent time, not misleading, the Company will promptly notify the Representative and will promptly amend or supplement, at its own expense, such Written Testing-the-Waters Communication to eliminate or correct such untrue statement or omission.

(b) The Company agrees to pay, or reimburse if paid by the Representative, whether or not the transactions contemplated hereby are consummated or this Agreement is terminated, all costs and expenses incident to the public offering of the Shares and the performance of the obligations of the Company under this Agreement including those relating to: (i) the preparation, printing, reproduction, filing and distribution of the Registration Statement including all exhibits thereto, each Preliminary Prospectus, the Prospectus, any Issuer Free Writing Prospectus, all amendments and supplements thereto and any document incorporated by reference therein, and the printing, filing and distribution of this Agreement; (ii) the preparation and delivery of certificates for the Shares to the Underwriters; (iii) the registration or qualification of the Shares for offer and sale under the securities or Blue Sky laws of the various jurisdictions referred to in Section 4(a)(vii), including the reasonable fees and disbursements of counsel for the Underwriters in connection with such registration and qualification and the preparation, printing, distribution and shipment of preliminary and supplementary Blue Sky memoranda; (iv) the furnishing (including costs of shipping and mailing) to the Representative and to the Underwriters of copies of each Preliminary Prospectus, the Prospectus and all amendments or supplements to the Prospectus, any Issuer Free Writing Prospectus, and of the several documents required by this Section to be so furnished, as may be reasonably requested for use in connection with the offering and sale of the Shares by the Underwriters or by dealers to whom Shares may be sold; (v) the filing fees of FINRA in connection with its review of the terms of the public offering and reasonable fees and disbursements of counsel for the Underwriters in connection with such review; (vi) inclusion of the Shares for quotation on the Nasdaq Capital Market; and (vii) all transfer taxes, if any, with respect to the sale and delivery of the Shares by the Company to the Underwriters. The Company will reimburse the Representative for its reasonable out-of-pocket costs and expenses, including its legal fees and disbursements, in connection with the purchase and sale of the Shares contemplated hereby in an amount not to exceed \$150,000 (inclusive of all amounts reimbursed or to be reimbursed by the Company pursuant to Section 4(b) of the underwriting agreement for the Notes Offering) without the Company's prior approval (such approval not to be unreasonably withheld, conditioned or delayed) (including amounts payable pursuant to clauses (iii) and (v) above). Subject to the provisions of Section 7, the Underwriters agree to pay, whether or not the transactions contemplated hereby are consummated or this Agreement is terminated, all costs and expenses incident to the performance of the obligations of the Underwriters under this Agreement not payable by the Company pursuant to the preceding sentence, including, without limitation, the fees and disbursements of counsel for the Underwriters.

(c) The Company acknowledges and agrees that each of the Underwriters has acted and is acting solely in the capacity of a principal in an arm's length transaction between the Company, on the one hand, and the Underwriters, on the other hand, with respect to the offering of Shares contemplated hereby (including in connection with determining the terms of the offering) and not as a financial advisor, agent or fiduciary to the Company or any other person. Additionally, the Company acknowledges and agrees that the Underwriters have not and will not advise the Company or any other person as to any legal, tax, investment, accounting or regulatory matters in any jurisdiction. The Company has consulted with its own advisors concerning such matters and shall be responsible for making its own independent investigation and appraisal of the transactions contemplated hereby, and the Underwriters shall have no responsibility or liability to the Company or any other person with respect thereto, whether arising prior to or after the date hereof. Any review by the Underwriters of the Company, the transactions contemplated hereby or other matters relating to such transactions have been and will be performed solely for the benefit of the Underwriters and shall not be on behalf of the Company. The Company agrees that it will not claim that the Underwriters, or any of them, has rendered advisory services of any nature or respect, or owes a fiduciary duty to the company or any other person in connection with any such transaction or the process leading thereto.

(d) The Company represents and agrees that, unless it obtains the prior consent of the Representative, and each Underwriter represents and agrees that, unless it obtains the prior consent of the Company and the Representative, it has not made and will not make any offer relating to the Shares that would constitute an "issuer free writing prospectus," as defined in Rule 433, or that would otherwise constitute a "free writing prospectus," as defined in Rule 405, required to be filed with the Commission. The Company has complied and will comply with the requirements of Rule 433 under the Act applicable to any Issuer Free Writing Prospectus, including timely filing with the Commission where required, legending and record keeping. The Company represents that is has satisfied and agrees that it will satisfy the conditions set forth in Rule 433 of the Rules to avoid a requirement to file with the Commission any Road Show.

5. Indemnification.

(a) The Company agrees to indemnify and hold harmless each Underwriter, its officers and employees and each person, if any, who controls any Underwriter within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act against any and all losses, claims, damages and liabilities, joint or several (including any reasonable investigation, legal and other expenses incurred in connection with, and any amount paid in settlement of, any action, suit or proceeding or any claim asserted), to which they, or any of them, may become subject under the Securities Act, the Exchange Act or other Federal or state law or regulation, at common law or otherwise, insofar as such losses, claims, damages or liabilities arise out of or are based upon any untrue statement or alleged untrue statement of a material fact contained in any preliminary prospectus, the Registration Statement, the Statutory Prospectus, the Prospectus, any Issuer Free Writing Prospectus or any "issuer information" filed or required to be filed pursuant to Rule 433(d) of the Rules, any amendment thereof or supplement thereto, any Written Testing-the-Waters Communication, or in any Blue Sky application or other information or other documents executed by the Company filed in any state or other jurisdiction to qualify any or all of the Shares under the securities laws thereof (any such application, document or information being hereinafter referred to as a "Blue Sky Application") or arise out of or are based upon any omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading; provided, however, that such indemnity shall not inure to the benefit of any Underwriter (or any person controlling such Underwriter) on account of any losses, claims, damages or liabilities arising from the sale of the Shares to any person by such Underwriter if such untrue statement or omission or alleged untrue statement or omission was made in such preliminary prospectus, the Registration Statement, the Prospectus, the Statutory Prospectus, any Issuer Free Writing Prospectus or such amendment or supplement thereto, any Written Testing-the-Waters Communication, or in any Blue Sky Application in reliance upon and in conformity with the Underwriter Information. This indemnity agreement will be in addition to any liability which the Company may otherwise have.

(b) Each Underwriter, severally and not jointly, agrees to indemnify and hold harmless the Company and each person, if any, who controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act, each director of the Company, and each officer of the Company who signs the Registration Statement, against any losses, claims, damages or liabilities (including any reasonable investigation, legal and other expenses incurred in connection with, and any amount paid in settlement of, any action, suit or proceeding or any claim asserted) to which such party may become subject, under the Securities Act or otherwise, insofar as such losses, claims, damages or liabilities (or actions in respect thereof) arise out of or are based upon an untrue statement or alleged untrue statement of a material fact contained in any preliminary prospectus, the Registration Statement, the Statutory Prospectus or the Prospectus, any Issuer Free Writing Prospectus or any amendment thereof or supplement thereto, or arise out of or are based upon the omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, in each case to the extent, but only to the extent, that such untrue statement or alleged untrue statement or omission or alleged omission was made in any Preliminary Prospectus, the Registration Statement, the Statutory Prospectus or the Prospectus or any such amendment or supplement in reliance upon and in conformity with the Underwriter Information; provided, however, that the obligation of each Underwriter to indemnify the Company (including any controlling person, director or officer thereof) shall be limited to the amount of the underwriting discount applicable to the Shares to be purchased by such Underwriter hereunder.

(c) Any party that proposes to assert the right to be indemnified under this Section 5 will, promptly after receipt of notice of commencement of any action, suit or proceeding against such party in respect of which a claim is to be made against an indemnifying party or parties under this Section, notify each such indemnifying party of the commencement of such action, suit or proceeding, enclosing a copy of all papers served. No indemnification provided for in Section 5(a) or 5(b) shall be available to any party who shall fail to give notice as provided in this Section 5(c) if the party to whom notice was not given was unaware of the action, suit or proceeding to which such notice would have related and was prejudiced by the failure to give such notice but the omission so to notify such indemnifying party of any such action, suit or proceeding shall not relieve it from any liability that it may have to any indemnified party for contribution or otherwise than under this Section 5. In case any such action, suit or proceeding shall be brought against any indemnified party and it shall notify the indemnifying party of the commencement thereof, the indemnifying party shall be entitled to participate in, and, to the extent that it shall wish, jointly with any other indemnifying party similarly notified, to assume the defense thereof, with counsel reasonably satisfactory to such indemnified party, and after notice from the indemnifying party to such indemnified party of its election so to assume the defense thereof and the approval by the indemnified party of such counsel, the indemnifying party shall not be liable to such indemnified party for any legal or other expenses, except as provided below and except for the reasonable costs of investigation subsequently incurred by such indemnified party in connection with the defense thereof. The indemnified party shall have the right to employ its counsel in any such action, but the fees and expenses of such counsel shall be at the expense of such indemnified party unless (i) the employment of counsel by such indemnified party has been authorized in writing by the indemnifying parties, (ii) the indemnified party shall have been advised by counsel that there may be one or more legal defenses available to it which are different from or in addition to those available to the indemnifying party (in which case the indemnifying parties shall not have the right to direct the defense of such action on behalf of the indemnified party) or (iii) the indemnifying parties shall not have employed counsel to assume the defense of such action within a reasonable time after notice of the commencement thereof, in each of which cases the fees and expenses of counsel shall be at the expense of the indemnifying parties. An indemnifying party shall not be liable for any settlement of any action, suit, and proceeding or claim effected without its written consent, which consent shall not be unreasonably withheld or delayed.

(d) No indemnifying party shall, without the prior written consent of the indemnified party, effect any settlement, compromise or consent to the entry of judgment in any pending or threatened action, suit or proceeding in respect of which any indemnified party is a party or could be named and indemnity was or would be sought hereunder by such indemnified party, unless such settlement, compromise or consent (a) includes an unconditional release of such indemnified party from all liability for claims that are the subject matter of such action, suit or proceeding and (b) does not include a statement as to or an admission of fault, culpability or a failure to act by or on behalf of any indemnified party.

6. Contribution. In order to provide for just and equitable contribution in circumstances in which the indemnification provided for in Section 5(a) or 5(b) is due in accordance with its terms but for any reason is unavailable to or insufficient to hold harmless an indemnified party in respect to any losses, liabilities, claims, damages or expenses referred to therein, then each indemnifying party shall contribute to the aggregate losses, liabilities, claims, damages and expenses (including any investigation, legal and other expenses reasonably incurred in connection with, and any amount paid in settlement of, any action, suit or proceeding or any claims asserted, but after deducting any contribution received by any person entitled hereunder to contribution from any person who may be liable for contribution) incurred by such indemnified party, as incurred, in such proportion as is appropriate to reflect the relative benefits received by the Company on the one hand and the Underwriters on the other hand from the offering of the Shares pursuant to this Agreement or, if such allocation is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to above but also the relative fault of the Company on the one hand and the Underwriters on the other hand in connection with the statements or omissions which resulted in such losses, liabilities, claims, damages or expenses, as well as any other relevant equitable considerations. The Company and the Underwriters agree that it would not be just and equitable if contribution pursuant to this Section 6 were determined by pro rata allocation (even if the Underwriters were treated as one entity for such purpose) or by any other method of allocation which does not take account of the equitable considerations referred to above. The aggregate amount of losses, liabilities, claims, damages and expenses incurred by an indemnified party and referred to above shall be deemed to include any legal or other expenses reasonably incurred by such indemnified party in investigating, preparing or defending against any litigation, or any investigation or proceeding by any governmental agency or body, commenced or threatened, or any claim whatsoever based upon any such untrue or alleged untrue statement or omission or alleged omission. Notwithstanding the provisions of this Section 6, no Underwriter (except as may be provided in the Agreement Among Underwriters) shall be required to contribute any amount in excess of the underwriting discounts and commissions applicable to the Shares purchased by such Underwriter. No person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. For purposes of this Section 6, each person, if any, who controls an Underwriter within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act shall have the same rights to contribution as such Underwriter, and each director of the Company, each officer of the Company who signed the Registration Statement, and each person, if any, who controls the Company within the meaning of the Section 15 of the Securities Act or Section 20 of the Exchange Act, shall have the same rights to contribution as the Company, as the case may be. Any party entitled to contribution will, promptly after receipt of notice of commencement of any action, suit or proceeding against such party in respect of which a claim for contribution may be made against another party or parties under this Section 6, notify such party or parties from whom contribution may be sought, but the omission so to notify such party or parties from whom contribution may be sought shall not relieve the party or parties from whom contribution may be sought from any other obligation it or they may have hereunder or otherwise than under this Section 6. No party shall be liable for contribution with respect to any action, suit, proceeding or claim settled without its written consent. The Underwriter's obligations to contribute pursuant to this Section 6 are several in proportion to their respective underwriting commitments and not joint.

7. Termination.

(a) This Agreement may be terminated with respect to the Shares to be purchased on a Closing Date by the Representative by notifying the Company in writing at any time at or before a Closing Date in the absolute discretion of the Representative if: (i) there has occurred any material adverse change in the securities markets or any event, act or occurrence that has materially disrupted, or in the opinion of the Representative, will in the future materially disrupt, the securities markets or there shall be such a material adverse change in general financial, political or economic conditions or the effect of international conditions on the financial markets in the United States is such as to make it, in the judgment of the Representative, inadvisable or impracticable to market the Shares or enforce contracts for the sale of the Shares; (ii) there has occurred any outbreak or material escalation of hostilities or acts of terrorism or other calamity or crisis the effect of which on the financial markets of the United States is such as to make it, in the judgment of the Representative, inadvisable or impracticable to market the Shares or enforce contracts for the sale of the Shares; (iii) trading in the Shares or any securities of the Company has been suspended or materially limited by the Commission or trading generally on the New York Stock Exchange, Inc., the NYSE American or the Nasdaq Stock Market has been suspended or materially limited, or minimum or maximum ranges for prices for securities shall have been fixed, or maximum ranges for prices for securities have been required, by any of said exchanges or by such system or by order of the Commission, FINRA, or any other governmental or regulatory authority; or (iv) a banking moratorium has been declared by any state or Federal authority; or (v) in the judgment of the Representative, there has been, since the time of execution of this Agreement or since the respective dates as of which information is given in the Prospectus, any material adverse change in the assets, properties, condition, financial or otherwise, or in the results of operations, business affairs or business prospects of the Company and its subsidiaries considered as a whole, whether or not arising in the ordinary course of business.

(b) If this Agreement is terminated pursuant to any of its provisions, the Company shall not be under any liability to any Underwriter, and no Underwriter shall be under any liability to the Company, except that (x) if this Agreement is terminated by the Representative or the Underwriters because of any failure, refusal or inability on the part of the Company to comply with the terms or to fulfill any of the conditions of this Agreement, the Company will reimburse the Underwriters for all out-of-pocket expenses (including the reasonable fees and disbursements of their counsel) incurred by them in connection with the proposed purchase and sale of the Shares or in contemplation of performing their obligations hereunder and (y) no Underwriter who shall have failed or refused to purchase the Shares agreed to be purchased by it under this Agreement, without some reason sufficient hereunder to justify cancellation or termination of its obligations under this Agreement, shall be relieved of liability to the Company, or to the other Underwriters for damages occasioned by its failure or refusal.

8. Substitution of Underwriters. If any Underwriter shall default in its obligation to purchase on any Closing Date the Shares agreed to be purchased hereunder on such Closing Date, the Representatives shall have the right, within 36 hours thereafter, to make arrangements for one or more of the non-defaulting Underwriters, or any other underwriters, to purchase such Shares on the terms contained herein. If, however, the Representatives shall not have completed such arrangements within such 36-hour period, then the Company shall be entitled to a further period of thirty-six hours within which to procure another party or other parties satisfactory to the Underwriters to purchase such Shares on such terms. If, after giving effect to any arrangements for the purchase of the Shares of a defaulting Underwriter or Underwriters by the Representatives and the Company as provided above, the aggregate number of Shares which remains unpurchased on such Closing Date does not exceed one-eleventh of the aggregate number of all the Shares that all the Underwriters are obligated to purchase on such date, then the Company shall have the right to require each non-defaulting Underwriter to purchase the number of Shares which such Underwriter agreed to purchase hereunder at such date and, in addition, to require each non-defaulting Underwriter to purchase its pro rata share (based on the number of Shares which such Underwriter agreed to purchase hereunder) of the Shares of such defaulting Underwriter or Underwriters for which such arrangements have not been made; but nothing herein shall relieve a defaulting Underwriter from liability for its default. In any such case, either the Representative or the Company shall have the right to postpone the applicable Closing Date for a period of not more than seven days in order to effect any necessary changes and arrangements (including any necessary amendments or supplements to the Registration Statement or Prospectus or any other documents), and the Company agrees to file promptly any amendments to the Registration Statement or the Prospectus which in the opinion of the Company and the Underwriters and their counsel may thereby be made necessary.

If, after giving effect to any arrangements for the purchase of the Shares of a defaulting Underwriter or Underwriters by the Representatives and the Company as provided above, the aggregate number of such Shares which remains unpurchased exceeds 10% of the aggregate number of all the Shares to be purchased at such date, then this Agreement, or, with respect to a Closing Date which occurs after the First Closing Date, the obligations of the Underwriters to purchase and of the Company, as the case may be, to sell the Option Shares to be purchased and sold on such date, shall terminate, without liability on the part of any non-defaulting Underwriter to the Company, and without liability on the part of the Company, except that the provisions of Sections 4(b), 5, 6 and 7 shall at all times be effective and shall survive such termination. The provisions of this Section 8 shall not in any way affect the liability of any defaulting Underwriter to the Company or the nondefaulting Underwriters arising out of such default. The term "Underwriter" as used in this Agreement shall include any person substituted under this Section 8 with like effect as if such person had originally been a party to this Agreement with respect to such Shares.

9. Miscellaneous. The respective agreements, representations, warranties, indemnities, rights of contribution and other statements of the Company, and the several Underwriters, as set forth in this Agreement or made by or on behalf of them pursuant to this Agreement, shall remain in full force and effect, regardless of any investigation (or any statement as to the results thereof) made by or on behalf of any Underwriter or the Company or any of their respective officers, directors or controlling persons referred to in Sections 5 and 6 hereof, and shall survive delivery of and payment for the Shares. In addition, the provisions of Sections 4(b), 5, 6 and 7 shall survive the termination or cancellation of this Agreement.

This Agreement has been and is made for the benefit of the Underwriters, the Company and their respective successors and assigns, and, to the extent expressed herein, for the benefit of persons controlling any of the Underwriters, or the Company, and directors and officers of the Company, and their respective successors and assigns, and no other person shall acquire or have any right under or by virtue of this Agreement. The term "successors and assigns" shall not include any purchaser of Shares from any Underwriter merely because of such purchase. The invalidity or unenforceability of any Section, paragraph or provision of this Agreement shall not affect the validity or enforceability of any other Section, paragraph or provision hereof. If any Section, paragraph or provision of this Agreement is for any reason determined to be invalid or unenforceable, there shall be deemed to be made such minor changes (and only such minor changes) as are necessary to make it valid and enforceable.

No amendment or waiver of any provision of this Agreement, nor any consent or approval to any departure therefrom, shall in any event be effective unless and until the same shall be in writing and signed by the Company and the Representative.

All notices and communications hereunder shall be in writing and mailed or delivered or by telephone or telegraph if subsequently confirmed in writing, (a) if to the Representative, c/o Oppenheimer & Co. Inc., 85 Broad Street, New York, New York 10004 Attention: Equity Capital Markets, with a copy to Oppenheimer & Co. Inc., 85 Broad Street, New York, New York 10004 Attention: General Counsel, and to Lowenstein Sandler LLP, 1251 Avenue of the Americas, New York, New York 10020 Attention: John D. Hogoboom and (b) if to the Company, to its agent for service as such agent's address appears on the cover page of the Registration Statement with a copy to K&L Gates LLP, Hearst Tower, 47th Floor, 214 N. Tryon Street, Charlotte, North Carolina 28202 Attention: Sean M. Jones.

This Agreement and any claim, controversy or dispute arising under or related to this Agreement shall be governed by and construed in accordance with the laws of the State of New York applicable to agreements made and to be performed in such state.

This Agreement may be signed in any number of counterparts, each of which shall be an original, with the same effect as if the signatures thereto and hereto were upon the same instrument. The headings herein are included for convenience of reference only and are not intended to be part of, or to affect the meaning or interpretation of, this Agreement. This Agreement constitutes the entire agreement of the parties to this Agreement and supersedes all prior written or oral and all contemporaneous oral agreements, understandings and negotiations with respect to the subject matter hereof.

Please confirm that the foregoing correctly sets forth the agreement among us.

Very truly yours,

AKOUSTIS TECHNOLOGIES, INC.

By: /s/ Jeffrey B. Shealy

Name: Jeffrey B. Shealy

Title: Chief Executive Officer

Confirmed:

OPPENHEIMER & CO. INC.

Acting severally on behalf of itself
and as representative of the several
Underwriters named in Schedule I annexed
hereto.

By OPPENHEIMER & CO. INC.

By /s/ Eric Helenek

Name: Eric Helenek

Title: Managing Director

AKOUSTIS TECHNOLOGIES, INC.

6.5% Convertible Senior Notes due 2023

UNDERWRITING AGREEMENT

October 19, 2018

Oppenheimer & Co. Inc.
85 Broad Street
New York, New York 10004

Ladies and Gentlemen:

Akoustis Technologies, Inc., a Delaware corporation (the “Company”), proposes, subject to the terms and conditions contained herein, to sell to you (the “Underwriter”) an aggregate of \$10,000,000 principal amount of the Company’s 6.5% Convertible Senior Notes due 2023 (the “Securities”), which shall be convertible into shares of the Company’s common stock, \$0.001 par value per share (the “Common Stock”, and any shares of Common Stock issuable upon conversion of the Securities (as defined below), including, for the avoidance of doubt, any additional shares deliverable upon redemption as an interest make-whole payment or upon conversion in connection with a qualifying fundamental change, the “Underlying Securities”).

The Company has prepared and filed in conformity with the requirements of the Securities Act of 1933, as amended (the “Securities Act”), and the published rules and regulations thereunder (the “Rules”) adopted by the Securities and Exchange Commission (the “Commission”) a registration statement on Form S-3 (No. 333-227637), including a related prospectus dated October 5, 2018 (the “Base Prospectus”) relating to common stock, preferred stock, debt securities, warrants, rights and units of the Company that may be sold from time to time by the Company in accordance with Rule 415 of the Securities Act, and such amendments thereof as may have been required to the date of this Agreement. Copies of such Registration Statement (as defined below) (including all amendments thereof and all documents deemed incorporated by reference therein) and of the related Base Prospectus have heretofore been delivered by the Company to you.

The term “Registration Statement” as used in this Agreement means the registration statement, including all exhibits, financial schedules and all documents and information deemed to be part of the Registration Statement by incorporation by reference or otherwise, as amended from time to time, including the information (if any) contained in the form of final prospectus filed with the Commission pursuant to Rule 424(b) of the Rules and deemed to be part thereof at the time of effectiveness pursuant to Rule 430B of the Rules.

If the Company has filed an abbreviated registration statement to register additional Securities or Underlying Securities pursuant to Rule 462(b) under the Rules (the "462(b) Registration Statement"), then any reference herein to the Registration Statement shall also be deemed to include such 462(b) Registration Statement. The term "Preliminary Prospectus" means the Base Prospectus, together with any preliminary prospectus supplement used or filed with the Commission pursuant to Rule 424 of the Rules, in the form provided to the Underwriter by the Company for use in connection with the offering of the Securities. The term "Prospectus" means the Base Prospectus, any Preliminary Prospectus and any amendments or further supplements to such prospectus, and including, without limitation, the final prospectus supplement, filed pursuant to and within the limits described in Rule 424(b) with the Commission in connection with the proposed sale of the Securities contemplated by this Agreement through the date of such prospectus supplement. The term "Effective Date" shall mean each date that the Registration Statement and any post-effective amendment or amendments thereto became or becomes effective, including as provided in Section 11(d) of the Securities Act. Unless otherwise stated herein, any reference herein to the Registration Statement, any Preliminary Prospectus, the Statutory Prospectus (as hereinafter defined) and the Prospectus shall be deemed to refer to and include the documents incorporated by reference therein, including pursuant to Item 12 of Form S-3 under the Securities Act, which were filed under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), on or before the date hereof or are so filed hereafter. Any reference herein to the terms "amend," "amendment" or "supplement" with respect to the Registration Statement, any Preliminary Prospectus, the Statutory Prospectus or the Prospectus shall be deemed to refer to and include any such document filed or to be filed under the Exchange Act after the date of the Registration Statement, any such Preliminary Prospectus, the Statutory Prospectus or Prospectus, as the case may be, and deemed to be incorporated therein by reference.

The Company understands that the Underwriter proposes to make a public offering of the Securities, as set forth in and pursuant to the Statutory Prospectus (as hereinafter defined) and the Prospectus, as soon after the date of this Agreement as the Underwriter deems advisable. The Company hereby confirms that the Underwriter and dealers have been authorized to distribute or cause to be distributed each Preliminary Prospectus, and each Issuer Free Writing Prospectus (as hereinafter defined) and are authorized to distribute the Prospectus (as from time to time amended or supplemented if the Company furnishes amendments or supplements thereto to the Underwriter).

1 . Sale, Purchase, Delivery and Payment for the Securities. On the basis of the representations, warranties and agreements contained in, and subject to the terms and conditions of, this Agreement:

(a) The Company agrees to issue and sell to the Underwriter, and the Underwriter agrees to purchase from the Company, the Securities at a purchase price of 93.75% of the principal amount of the Securities, plus accrued interest, if any, from October 23, 2018 to the Closing Date (as defined below).

(b) The Securities to be purchased by the Underwriter hereunder will be represented by one or more definitive global Securities in book-entry form which will be deposited by or on behalf of the Company with The Depository Trust Company (“DTC”) or its designated custodian. The Company will deliver the Securities to the Underwriter, against payment by the Underwriter of the purchase price therefor by wire transfer of Federal (same-day) funds to the account specified by the Company to the Underwriter at least forty-eight hours in advance, by causing DTC to credit the Securities to the securities account(s) at DTC designated by the Underwriter. The Company will cause the certificates representing the Securities to be made available to the Underwriter for checking at least twenty-four hours prior to the Closing Date (as defined below) with respect thereto at the office of DTC or its designated custodian (the “Designated Office”). Payment of the purchase price for, and delivery of, the Securities shall be made at the offices of Oppenheimer & Co. Inc., 85 Broad Street, New York, New York 10004, at 10:00 a.m., New York City time, on the third business day following the date of this Agreement or at such time on such other date, not later than ten (10) business days after the date of this Agreement, as shall be agreed upon by the Company and the Underwriter (such time and date of delivery and payment are called the “Closing Date”).

2 . Representations and Warranties of the Company. The Company represents and warrants to the Underwriter as of the date hereof and as of the Closing Date as follows:

(a) The Company meets the requirements for use of Form S-3 under the Securities Act including the transaction requirements set forth in General Instruction 1.B.1 of such form. The Company is not, and has not been for at least 12 calendar months prior to the filing of the Registration Statement, a shell company. The Company filed with the Commission the Registration Statement on such Form, including a Base Prospectus, for registration under the Securities Act of the offering and sale of the Securities and the Underlying Securities, and the Company has prepared and used a Preliminary Prospectus in connection with the offer and sale of the Securities and the Underlying Securities. When the Registration Statement or any amendment thereof or supplement thereto was or is declared or deemed to be effective and as of the date of the most recent amendment to the Registration Statement, it (i) complied or will comply, in all material respects, with the requirements of the Securities Act and the Rules, the Exchange Act and the rules and regulations of the Commission thereunder, and the Trust Indenture Act of 1939, as amended (the “Trust Indenture Act”) and the rules and regulations of the Commission thereunder and (ii) did not or will not, contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary in order to make the statements therein not misleading. When any Preliminary Prospectus or Prospectus was first filed with the Commission (whether filed as part of the Registration Statement or any amendment thereto or pursuant to Rule 424 of the Rules) and when any amendment thereof or supplement thereto was first filed with the Commission, such Preliminary Prospectus or Prospectus as amended or supplemented complied in all material respects with the applicable provisions of the Securities Act and the Rules and the Trust Indenture Act and the rules and regulations of the Commission thereunder and did not or will not, contain any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading. If applicable, each Preliminary Prospectus and the Prospectus delivered to the Underwriter for use in connection with this offering was identical to the electronically transmitted copies thereof filed with the Commission pursuant to EDGAR, except to the extent permitted by Regulation S-T. Notwithstanding the foregoing, none of the representations and warranties in this paragraph 2(a) shall apply to statements in, or omissions from, the Registration Statement, any Preliminary Prospectus or the Prospectus made in reliance upon, and in conformity with, information herein or otherwise furnished in writing by the Underwriter specifically for use in the Registration Statement, any Preliminary Prospectus or the Prospectus, as the case may be. With respect to the preceding sentence, the Company acknowledges that the only information furnished in writing by the Underwriter for use in the Registration Statement, any Preliminary Prospectus or the Prospectus is the statements contained in the fourth and ninth paragraphs under the caption “Underwriting” in the Prospectus (collectively, the “Underwriter Information”).

(b) As of the Applicable Time (as hereinafter defined), the Statutory Prospectus (as hereinafter defined), as supplemented by the final term sheet prepared and filed by the Company pursuant to Section 4(a)(i) hereof and any other individual Issuer Free Writing Prospectus listed on Schedule III hereto, all considered together (collectively, the “General Disclosure Package”), did not include any untrue statement of a material fact or omit to state any material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; and each individual Issuer Free Writing Prospectus listed on Schedule III hereto does not conflict with the information contained in the Registration Statement, the Statutory Prospectus or the Prospectus and each Issuer Free Writing Prospectus, when considered together with the General Disclosure Package as of the Applicable Time, did not include any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading; provided, however, that this representation and warranty shall not apply to statements in or omissions in the General Disclosure Package or an Issuer Free Writing Prospectus made in reliance upon and in conformity with the Underwriter Information.

Each Issuer Free Writing Prospectus (as hereinafter defined), including any electronic road show (including without limitation any “bona fide electronic road show” as defined in Rule 433(h)(5) under the Securities Act) (each, a “Road Show”) (i) is identified in Schedule III hereto and (ii) complied when issued, and complies, in each case, in all material respects with the requirements of the Securities Act and the Rules and the Exchange Act and the rules and regulations of the Commission thereunder.

As used in this Section and elsewhere in this Agreement:

“Applicable Time” means 9:00 a.m. (Eastern time) on the date of this Underwriting Agreement.

“Statutory Prospectus” as of any time means the Preliminary Prospectus relating to the Securities that is included in the Registration Statement immediately prior to the Applicable Time, including any document incorporated by reference therein and any prospectus supplement deemed to be a part thereof.

“Issuer Free Writing Prospectus” means each “free writing prospectus” (as defined in Rule 405 of the Rules) prepared by or on behalf of the Company or used or referred to by the Company in connection with the offering of the Securities, including, without limitation, each Road Show.

(c) The Registration Statement is effective under the Securities Act and no stop order preventing or suspending the effectiveness of the Registration Statement or suspending or preventing the use of any Preliminary Prospectus, the Prospectus or any “free writing prospectus”, as defined in Rule 405 under the Rules, has been issued by the Commission and no proceedings for that purpose have been instituted or are threatened under the Securities Act. Any required filing of any Preliminary Prospectus and/or the Prospectus and any supplement thereto pursuant to Rule 424(b) of the Rules has been or will be made in the manner and within the time period required by such Rule 424(b). Any material required to be filed by the Company pursuant to Rule 433(d) or Rule 163(b)(2) of the Rules has been or will be made in the manner and within the time period required by such Rules.

(d) The documents incorporated by reference in the Registration Statement, any Preliminary Prospectus and the Prospectus, at the time they became effective or were filed with the Commission, as the case may be, complied in all material respects with the requirements of the Securities Act, the Exchange Act or the Trust Indenture Act, as applicable, and the rules and regulations of the Commission thereunder, and none of such documents contained an untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading, and any further documents so filed and incorporated by reference in the Registration Statement, any Preliminary Prospectus and the Prospectus, when such documents become effective or are filed with the Commission, as the case may be, will conform in all material respects to the requirements of the Securities Act, the Exchange Act or the Trust Indenture Act, as applicable, and the rules and regulations of the Commission thereunder and will not contain an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they are made, not misleading.

(e) Each Issuer Free Writing Prospectus, as of its issue date and at all subsequent times through the completion of the public offer and sale of the Securities or until any earlier date that the Company notified or notifies the Underwriter as described in the next sentence, did not, does not and will not include any information that conflicted, conflicts or will conflict with the information contained in the Registration Statement, including any document incorporated by reference therein and any prospectus supplement deemed to be a part thereof that has not been superseded or modified.

If at any time following issuance of an Issuer Free Writing Prospectus there occurred or occurs an event or development as a result of which such Issuer Free Writing Prospectus conflicted or would conflict with the information contained in the Registration Statement, the Statutory Prospectus or the Prospectus or included or would include an untrue statement of a material fact or omitted or would omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances prevailing at the subsequent time, not misleading, the Company has promptly notified or will promptly notify the Underwriter and has promptly amended or will promptly amend or supplement, at its own expense, such Issuer Free Writing Prospectus to eliminate or correct such conflict, untrue statement or omission.

(f) The financial statements of the Company (including all notes and schedules thereto) included in the Registration Statement, the Statutory Prospectus and Prospectus present fairly the financial position of the Company and its consolidated subsidiaries at the dates indicated and the statement of operations, stockholders' equity and cash flows of the Company and its consolidated subsidiaries for the periods specified; and such financial statements and related schedules and notes thereto, and the unaudited financial information filed with the Commission as part of the Registration Statement, have been prepared in conformity with generally accepted accounting principles, consistently applied throughout the periods involved. The selected financial data included in the Statutory Prospectus and Prospectus present fairly the information shown therein as at the respective dates and for the respective periods specified and have been presented on a basis consistent with the consolidated financial statements set forth in the Prospectus and other financial information. The pro forma financial statements and the related notes thereto, if any, included in the Registration Statement, the Statutory Prospectus and the Prospectus present fairly the information shown therein, have been prepared in accordance with the Commission's rules and guidelines with respect to pro forma financial statements and have been properly compiled on the bases described therein, and the assumptions used in the preparation thereof are reasonable and the adjustments used therein are appropriate to give effect to the transactions and circumstances referred to therein.

(g) Marcum LLP (the "Auditor") whose reports are filed with the Commission as a part of the Registration Statement, are and, during the periods covered by their reports, were independent public accountants as required by the Securities Act and the Rules.

(h) The Company and each of its subsidiaries, including each entity (corporation, partnership, joint venture, association or other business organization) controlled directly or indirectly by the Company (each, a "subsidiary"), is duly organized, validly existing and in good standing under the laws of their respective jurisdictions of incorporation or organization and each such entity has all requisite power and authority to carry on its business as is currently being conducted as described in the Statutory Prospectus and the Prospectus, and to own, lease and operate its properties. All of the issued shares of capital stock of, or other ownership interests in, each subsidiary have been duly and validly authorized and issued and are fully paid and non-assessable and are owned, directly or indirectly, by the Company, free and clear of any lien, charge, mortgage, pledge, security interest, claim, limitation on voting rights, equity, trust or other encumbrance, preferential arrangement, defect or restriction of any kind whatsoever. The Company and each of its subsidiaries is duly qualified to do business and is in good standing as a foreign corporation in each jurisdiction in which the nature of the business conducted by it or location of the assets or properties owned, leased or licensed by it requires such qualification, except for such jurisdictions where the failure to so qualify individually or in the aggregate would not have a material adverse effect on the assets, properties, condition, financial or otherwise, or in the results of operations, business affairs or business prospects of the Company and its subsidiaries considered as a whole (a "Material Adverse Effect"); and to the Company's knowledge, no proceeding has been instituted in any such jurisdiction revoking, limiting or curtailing, or seeking to revoke, limit or curtail, such power and authority or qualification.

(i) The Registration Statement initially became effective on October 5, 2018.

(j) The Company and each of its subsidiaries has all requisite corporate power and authority, and all necessary authorizations, approvals, consents, orders, licenses, certificates and permits of and from all governmental or regulatory bodies or any other person or entity (collectively, the “Permits”), to own, lease and license its assets and properties and conduct its business, all of which are valid and in full force and effect, except where the lack of such Permits, individually or in the aggregate, would not have a Material Adverse Effect. The Company and each of its subsidiaries has fulfilled and performed in all material respects all of its obligations with respect to such Permits and no event has occurred that allows, or after notice or lapse of time would allow, revocation or termination thereof or results in any other material impairment of the rights of the Company thereunder. Except as may be required under the Securities Act and state and foreign Blue Sky laws, no other Permits are required to enter into, deliver and perform this Agreement and the Indenture and to issue and sell the Securities or to issue the Underlying Securities upon conversion of the Securities pursuant to and in accordance with the terms of the Securities.

(k) (i) At the earliest time after the filing of the Registration Statement that the Company or another offering participant made a *bona fide* offer (within the meaning of Rule 164(h)(2) of the Rules) of the Securities and (ii) at the date hereof, the Company was not and is not an “ineligible issuer,” as defined in Rule 405 of the Rules, including (but not limited to) the Company or any other subsidiary in the preceding three years not having been convicted of a felony or misdemeanor or having been made the subject of a judicial or administrative decree or order as described in Rule 405 of the Rules.

(l) The Company and each of its subsidiaries owns or possesses adequate rights to use all patents, patent rights, inventions, trademarks, trademark applications, trade names, service marks, copyrights, copyright applications, licenses, know-how and other similar rights and proprietary knowledge (collectively, “Intangibles”) necessary for the conduct of its business, except where the lack of such ownership or rights to use would not have a Material Adverse Effect. Neither the Company nor any of its subsidiaries has received any written notice of, or is not aware of, any infringement of or conflict with asserted rights of others with respect to any Intangibles.

(m) The Company and each of its subsidiaries has good and marketable title in fee simple to all real property, and good and marketable title to all other property owned by it that is material to the business of the Company or any subsidiary, in each case free and clear of all liens, encumbrances, and defects, except such as are described in the Registration Statement, the Statutory Prospectus or the Prospectus or such as do not materially affect the value of such property and do not materially interfere with the use made or proposed to be made of such property by the Company and its subsidiaries. All property held under lease by the Company and its subsidiaries is held by them under valid, existing and enforceable leases, free and clear of all liens, encumbrances, claims, security interests and defects, except such as are not material and do not materially interfere with the use made or proposed to be made of such property by the Company and its subsidiaries, in each case except as described in the Registration Statement, the Statutory Prospectus or the Prospectus.

(n) Subsequent to the respective dates as of which information is given in the Registration Statement, the Statutory Prospectus and the Prospectus, (i) there has not occurred any event which could have a Material Adverse Effect; (ii) neither the Company nor any of its subsidiaries has sustained any loss or interference with its assets, businesses or properties (whether owned or leased) from fire, explosion, earthquake, flood or other calamity, whether or not covered by insurance, or from any labor dispute or any court or legislative or other governmental action, order or decree which would have a Material Adverse Effect; and (iii) except as described in the immediately following sentence, since the date of the latest balance sheet included in the Registration Statement and the Prospectus, neither the Company nor its subsidiaries has (A) issued any securities (other than securities issued pursuant to employee benefit plans, qualified stock options plans or other employee compensation plans or pursuant to outstanding options, rights or warrants) or incurred any liability or obligation, direct or contingent, for borrowed money, except such liabilities or obligations incurred in the ordinary course of business, (B) entered into any transaction not in the ordinary course of business or (C) except for regular dividends on the Common Stock in amounts per share that are consistent with past practice, declared or paid any dividend or made any distribution on any shares of its stock or redeemed, purchased or otherwise acquired or agreed to redeem, purchase or otherwise acquire any shares of its capital stock. The Company intends to conduct simultaneously herewith, an underwritten registered offering of shares of its Common Stock pursuant to the Registration Statement (the “Equity Offering”).

(o) There is no document, contract or other agreement required to be described in the Registration Statement, the Statutory Prospectus or the Prospectus or to be filed as an exhibit to the Registration Statement which is not described or filed as required by the Securities Act or Rules. Each description of a contract, document or other agreement in the Registration Statement, the Statutory Prospectus or the Prospectus accurately reflects in all respects the terms of the underlying contract, document or other agreement. Each contract, document or other agreement described in the Registration Statement, the Statutory Prospectus or the Prospectus or listed in the Exhibits to the Registration Statement or incorporated by reference is in full force and effect and is valid and enforceable by and against the Company or its subsidiary, as the case may be, in accordance with its terms. Neither the Company nor any of its subsidiaries, if a subsidiary is a party, nor to the Company’s knowledge, any other party is in default in the observance or performance of any term or obligation to be performed by it under any such agreement, and no event has occurred which with notice or lapse of time or both would constitute such a default, in any such case which default or event, individually or in the aggregate, would have a Material Adverse Effect. No default exists, and no event has occurred which with notice or lapse of time or both would constitute a default, in the due performance and observance of any term, covenant or condition, by the Company or its subsidiary, if a subsidiary is a party thereto, of any other agreement or instrument to which the Company or any of its subsidiaries is a party or by which Company or its properties or business or a subsidiary or its properties or business may be bound or affected which default or event, individually or in the aggregate, would have a Material Adverse Effect.

(p) The statistical and market related data included in the Registration Statement, the Statutory Prospectus or the Prospectus are based on or derived from sources that the Company believes to be reliable and accurate.

(q) Neither the Company nor any subsidiary (i) is in violation of its certificate or articles of incorporation, by-laws, certificate of formation, limited liability company agreement, partnership agreement or other organizational documents, (ii) is in default under, and no event has occurred which, with notice or lapse of time, or both, would constitute a default under, or result in the creation or imposition of any lien, charge, mortgage, pledge, security interest, claim, limitation on voting rights, equity, trust or other encumbrance, preferential arrangement, defect or restriction of any kind whatsoever, upon, any property or assets of the Company or any subsidiary pursuant to, any bond, debenture, note, indenture, mortgage, deed of trust, loan agreement or other agreement or instrument to which it is a party or by which it is bound or to which any of its properties or assets is subject or (iii) is in violation of any statute, law, rule, regulation, ordinance, directive, judgment, decree or order of any judicial, regulatory or other legal or governmental agency or body, foreign or domestic, except (in the case of clauses (ii) and (iii) above) for violations or defaults that could not (individually or in the aggregate) reasonably be expected to have a Material Adverse Effect.

(r) This Agreement has been duly authorized, executed and delivered by the Company. The indenture to be dated on or around October 23, 2018 (the "Indenture") between the Company and The Bank of New York Mellon Trust Company, N.A., as Trustee (the "Trustee"), under which the Securities are to be issued, which is substantially in the form filed as an exhibit to the Registration Statement, has been duly authorized and, assuming due authorization, execution and delivery thereof by the Trustee, when executed and delivered by the Company, will constitute a legally valid and binding instrument enforceable against the Company in accordance with its terms (subject, as to the enforcement of remedies, to applicable bankruptcy, reorganization, insolvency, moratorium or other laws affecting creditors' rights generally from time to time in effect and to general principles of equity); the Securities have been duly authorized by the Company, and, when executed and authenticated in accordance with the provisions of the Indenture and delivered to and paid for by the Underwriter in accordance with the provisions hereof, the Securities will have been duly executed and delivered by the Company and will constitute the legally valid and binding obligations of the Company entitled to the benefits of the Indenture (subject, as to the enforcement of remedies, to applicable bankruptcy, reorganization, insolvency, moratorium or other laws affecting creditors' rights generally from time to time in effect and to general principles of equity) and will be convertible into shares of Common Stock in accordance with its terms and the Securities and the Indenture will conform in all material respects to the descriptions thereof in the General Disclosure Package and the Prospectus.

(s) Neither the execution, delivery and performance of this Agreement or the Indenture by the Company nor the consummation of any of the transactions contemplated hereby and thereby (including, without limitation, the issuance and sale by the Company of the Securities and the issuance of the Underlying Securities upon conversion of the Securities pursuant to and in accordance with the terms of the Securities) will (i) give rise to a right to terminate or accelerate the due date of any payment due under, or conflict with or result in the breach of any term or provision of, or constitute a default (or an event which with notice or lapse of time or both would constitute a default) under, or require any consent or waiver under, or result in the execution or imposition of any lien, charge or encumbrance upon any properties or assets of the Company or its subsidiaries pursuant to the terms of, any indenture, mortgage, deed of trust or other agreement or instrument to which the Company or any of its subsidiaries is a party or by which either the Company or its subsidiaries or any of their properties or businesses is bound, or any franchise, license, permit, judgment, decree, order, statute, rule or regulation applicable to the Company or any of its subsidiaries, in each case, other than rights to terminate or accelerate, conflicts, defaults, liens, charges or encumbrances that would not, individually or in the aggregate, have a Material Adverse Effect or (ii) violate any provision of the charter or by-laws of the Company or any of its subsidiaries, in each case, except for such consents or waivers which have already been obtained and are in full force and effect.

(t) The Company has authorized and, as of June 30, 2018, outstanding capital stock as set forth under the caption “Consolidated Balance Sheets” in the Company’s Annual Report on Form 10-K for the fiscal year ended June 30, 2018. The certificates evidencing the Securities are in due and proper legal form and have been duly authorized for issuance by the Company. All of the issued and outstanding shares of Common Stock have been duly and validly issued and are fully paid and nonassessable. The maximum number of shares of Common Stock issuable upon conversion of the Securities (including the maximum number of additional shares of Common Stock by which the Conversion Rate (as such term is defined in the Indenture) may be increased and including the Interest Make Whole Payment or Qualifying Fundamental Change Payment (as such terms are defined in the Indenture) and assuming the Company elects to make such payments solely by delivery of shares of Common Stock (the “Maximum Number of Underlying Securities”)) have been duly authorized and, when issued upon conversion of the Securities in accordance with their terms and pursuant to and in accordance with the terms of the Indenture, will be validly issued, fully paid and non-assessable; the Board of Directors of the Company has duly and validly adopted resolutions reserving the Maximum Number of Underlying Securities for issuance upon conversion of the Securities; and none of the Securities and the Underlying Securities will be issued in violation of any preemptive or other similar right. There are no statutory preemptive or other similar rights to subscribe for or to purchase or acquire any shares of Common Stock of the Company or any of its subsidiaries or any such rights pursuant to its Certificate of Incorporation or by-laws or any agreement or instrument to or by which the Company or any of its subsidiaries is a party or bound. Except as disclosed in the Registration Statement, the Statutory Prospectus and the Prospectus, there is no outstanding option, warrant or other right calling for the issuance of, and, except for the Equity Offering there is no commitment, plan or arrangement to issue, any share of stock of the Company or any of its subsidiaries or any security convertible into, or exercisable or exchangeable for, such stock. The exercise price of each option to acquire Common Stock (each, a “Company Stock Option”) is no less than the fair market value of a share of Common Stock as determined on the date of grant of such Company Stock Option. All grants of Company Stock Options were validly issued and properly approved by the Board of Directors of the Company in compliance in all material respects with all applicable laws and the terms of the plans under which such Company Stock Options were issued and were recorded on the Company Financial Statements, including the documents incorporated by reference in the Registration Statement, the Statutory Prospectus and the Prospectus, in accordance with GAAP, and no such grants involved any “back dating”, “forward dating,” “spring loading” or similar practices with respect to the effective date of grant. The Common Stock, the Securities and the Underlying Securities conform in all material respects to all statements in relation thereto contained in the Registration Statement and the Statutory Prospectus and the Prospectus. All outstanding shares of capital stock of each of the Company’s subsidiaries have been duly authorized and validly issued, and are fully paid and nonassessable and are owned directly by the Company or by another wholly-owned subsidiary of the Company free and clear of any security interests, liens, encumbrances, equities or claims, other than those described in the Registration Statement, the Statutory Prospectus and the Prospectus.

(u) No holder of any security of the Company has any right, which has not been waived, to have any security owned by such holder included in the Registration Statement or to demand registration of any security owned by such holder for a period of 180 days after the date of this Agreement. Each director and executive officer of the Company listed on Schedule II hereto has delivered to the Underwriter his or her enforceable written lock-up agreement in the form attached to this Agreement as Exhibit A hereto ("Lock-Up Agreement").

(v) There are no legal or governmental proceedings pending to which the Company or any of its subsidiaries is a party or of which any property of the Company or any of its subsidiaries is the subject which, if determined adversely to the Company or any of its subsidiaries could individually or in the aggregate have a Material Adverse Effect; and, to the knowledge of the Company, no such proceedings are threatened or contemplated by governmental authorities or threatened by others.

(w) All necessary corporate action has been duly and validly taken by the Company and to authorize the execution, delivery and performance of this Agreement and the Indenture and the issuance and sale of the Securities and the issuance of the Underlying Securities upon conversion of the Securities pursuant to and in accordance with the terms of the Securities.

(x) Neither the Company nor any of its subsidiaries is involved in any labor dispute nor, to the knowledge of the Company, is any such dispute threatened, in each case, which dispute would have a Material Adverse Effect. The Company is not aware of any existing or imminent labor disturbance by the employees of any of its principal suppliers or contractors which would have a Material Adverse Effect. The Company is not aware of any threatened or pending litigation between the Company or its subsidiaries and any of its executive officers which, if adversely determined, could, to the Company, have a Material Adverse Effect, and the Company has no reason to believe that such officers will not remain in the employment of the Company.

(y) No transaction has occurred between or among the Company and any of its officers or directors, shareholders or any affiliate or affiliates of any such officer or director or shareholder that is required to be described in and is not described in the Registration Statement, the Statutory Prospectus and the Prospectus.

(z) The Company has not taken, nor will it take, directly or indirectly, any action designed to or which might reasonably be expected to cause or result in, or which has constituted or which might reasonably be expected to constitute, the stabilization or manipulation of the price of the Common Stock or any security of the Company to facilitate the sale or resale of any of the Securities.

(aa) The Company and each of its subsidiaries has filed all Federal, state, local and foreign tax returns which are required to be filed through the date hereof, which returns are true and correct in all material respects or has received timely extensions thereof, and has paid all taxes shown on such returns and all assessments received by it to the extent that the same are material and have become due. There are no tax audits or investigations pending, which if adversely determined would have a Material Adverse Effect; nor are there any material proposed additional tax assessments against the Company or any of its subsidiaries.

(bb) The Common Stock is registered pursuant to Section 12(b) of the Exchange Act and listed on the Nasdaq Capital Market. The Company has taken no action designed to, or likely to have the effect of, terminating the registration of the Common Stock under the Exchange Act or the quotation of the Common Stock on the Nasdaq Capital Market, nor has the Company received any notification that the Commission or the Nasdaq Capital Market is contemplating terminating such registration or quotation.

(cc) The books, records and accounts of the Company and its subsidiaries accurately and fairly reflect, the transactions in, and dispositions of, the assets of, and the results of operations of, the Company and its subsidiaries. The Company and each of its subsidiaries maintains a system of internal accounting controls sufficient to provide reasonable assurances that (i) transactions are executed in accordance with management's general or specific authorizations, (ii) transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles and to maintain asset accountability, (iii) access to assets is permitted only in accordance with management's general or specific authorization and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences.

(dd) The Company has established and maintains "disclosure controls and procedures" (as such term is defined in Rule 13a-15 under the Exchange Act), which: (i) are designed to ensure that material information relating to the Company is made known to the Company's principal executive officer and its principal financial officer by others within the Company; (ii) provide for the periodic evaluation of the effectiveness of such disclosure controls and procedures at the end of the periods in which the periodic reports are required to be prepared; and (iii) are effective in all material respects to perform the functions for which they were established.

(ee) Based on the evaluation of its disclosure controls and procedures, the Company is not aware of (i) any material weakness or significant deficiency in the design or operation of internal controls which could adversely affect the Company's ability to record, process, summarize and report financial data or any material weaknesses in internal controls; or (ii) any fraud, whether or not material, that involves management or other employees who have a role in the Company's internal controls.

(ff) Except as described in the Statutory Prospectus and the Prospectus and as preapproved in accordance with the requirements set forth in Section 10A of the Exchange Act, the Auditor has not been engaged by the Company to perform any "prohibited activities" (as defined in Section 10A of the Exchange Act).

(gg) Except as described in the Statutory Prospectus and the Prospectus, there are no material off-balance sheet arrangements (as defined in Item 303 of Regulation S-K) that have or are reasonably likely to have a material current or future effect on the Company's financial condition, revenues or expenses, changes in financial condition, results of operations, liquidity, capital expenditures or capital resources.

(hh) The Company's Board of Directors has validly appointed an audit committee whose composition satisfies the requirements of Rule 5605 of the NASDAQ Stock Market and the Board of Directors and/or the audit committee has adopted a charter that satisfies the requirements of Rule 5605 of the NASDAQ Stock Market. The audit committee has reviewed the adequacy of its charter within the past twelve months.

(ii) There is and has been no failure on the part of the Company or any of its directors or officers, in their capacities as such, to comply in all material respects with any applicable provision of the Sarbanes-Oxley Act, including, without limitation, Section 402 related to loans and Sections 302 and 906 related to certifications.

(jj) The Company and its subsidiaries are insured by insurers of recognized financial responsibility against such losses and risks and in such amounts as are customary in the businesses in which they are engaged or propose to engage after giving effect to the transactions described in the Statutory Prospectus and the Prospectus; all policies of insurance and fidelity or surety bonds insuring the Company or any of its subsidiaries or the Company's or its subsidiaries' respective businesses, assets, employees, officers and directors are in full force and effect; the Company and each of its subsidiaries are in compliance with the terms of such policies and instruments in all material respects; and neither the Company nor any subsidiary of the Company has any reason to believe that it will not be able to renew its existing insurance coverage as and when such coverage expires or to obtain similar coverage from similar insurers as may be necessary to continue its business at a cost that is not materially greater than the current cost. Neither the Company nor any of its subsidiaries has been denied any insurance coverage which it has sought or for which it has applied.

(kk) Each approval, consent, order, authorization, designation, declaration or filing of, by or with any regulatory, administrative or other governmental body necessary in connection with the execution and delivery by the Company of this Agreement and the Indenture and the consummation of the transactions herein and therein contemplated required to be obtained or performed by the Company (except (i) such additional steps as may be required by the Financial Industry Regulatory Authority ("FINRA"); (ii) as may be necessary to qualify the Securities and the Underlying Securities for public offering by the Underwriter under the state securities or Blue Sky laws); (iii) the filing of a notice of a change in shares outstanding and related materials with Nasdaq following the Closing Date or (iv) any filings required under the Exchange Act, which have been or will be made when and how required) has been obtained or made and is in full force and effect.

(ll) None of the Company, nor any of its officers, directors or, to the best knowledge of the Company, any beneficial owner of five percent or greater of the Common Stock, is affiliated or associated with any broker-dealer that is a member of FINRA, except as disclosed in the Registration Statement.

(mm) (i) Each of the Company and each of its subsidiaries is in compliance in all material respects with all rules, laws and regulation relating to the use, treatment, storage and disposal of toxic substances and protection of health or the environment (“Environmental Laws”) which are applicable to its business; (ii) neither the Company nor its subsidiaries has received any notice from any governmental authority or third party of an asserted claim under Environmental Laws; (iii) each of the Company and each of its subsidiaries has received all permits, licenses or other approvals required of it under applicable Environmental Laws to conduct its business and is in compliance in all material respects with all terms and conditions of any such permit, license or approval; (iv) to the Company’s knowledge, no facts currently exist that will require the Company or any of its subsidiaries to make future material capital expenditures to comply with Environmental Laws; and (v) no property which is or has been owned, leased or occupied by the Company or its subsidiaries has been designated as a Superfund site pursuant to the Comprehensive Environmental Response, Compensation of Liability Act of 1980, as amended (42 U.S.C. Section 9601, et. seq.) (“CERCLA 1980”) or otherwise designated as a contaminated site under applicable state or local law. Neither the Company nor any of its subsidiaries has been named as a “potentially responsible party” under the CERCLA 1980.

(nn) [RESERVED]

(oo) The Company is not and, immediately after giving effect to the offering and sale of the Securities and the application of proceeds thereof as described in the Statutory Prospectus and the Prospectus, will not be an “investment company” within the meaning of the Investment Company Act of 1940, as amended (the “Investment Company Act”).

(pp) The Company or any other person associated with or acting on behalf of the Company including, without limitation, any director, officer, agent or employee of the Company or its subsidiaries, has not, directly or indirectly, while acting on behalf of the Company or its subsidiaries (i) used any corporate funds for unlawful contributions, gifts, entertainment or other unlawful expenses relating to political activity; (ii) made any unlawful payment to foreign or domestic government officials or employees or to foreign or domestic political parties or campaigns from corporate funds; (iii) violated any provision of the Foreign Corrupt Practices Act of 1977, as amended; or (iv) made any other unlawful payment.

(qq) The operations of the Company and its subsidiaries are and have been conducted at all times in compliance with applicable financial recordkeeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the applicable money laundering statutes of all jurisdictions, the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any governmental agency (collectively, the “Money Laundering Laws”) and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any of its subsidiaries with respect to the Money Laundering Laws is pending, or to the best knowledge of the Company, threatened.

(rr) Neither the Company nor any of its subsidiaries nor, to the knowledge of the Company, any director, officer, agent, employee or affiliate of the Company or any of its subsidiaries is currently subject to any U.S. sanctions administered by the Office of Foreign Assets Control of the U.S. Treasury Department (“OFAC”); and the Company will not directly or indirectly use the proceeds of the offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other person or entity, for the purpose of financing the activities of any person currently subject to any U.S. sanctions administered by OFAC.

(ss) Except as described in the Statutory Prospectus and the Prospectus, the Company has not sold or issued any shares of Common Stock during the six-month period preceding the date of the Prospectus, including any sales pursuant to Rule 144A under, or Regulations D or S of, the Securities Act, other than shares issued pursuant to employee benefit plans, qualified stock options plans or other employee compensation plans or pursuant to outstanding options, rights or warrants.

(tt) The Company has fulfilled its obligations, if any, in all material respects under the minimum funding standards of Section 302 of the U.S. Employee Retirement Income Security Act of 1974 (“ERISA”) and the regulations and published interpretations thereunder with respect to each “plan” as defined in Section 3(3) of ERISA and such regulations and published interpretations in which its employees are eligible to participate and each such plan is in compliance in all material respects with the presently applicable provisions of ERISA and such regulations and published interpretations. No “Reportable Event” (as defined in 12 ERISA) has occurred with respect to any “Pension Plan” (as defined in ERISA) for which the Company could have any liability.

(uu) None of the Company, its directors or its officers has distributed nor will distribute prior to the later of (i) the Closing Date, and (ii) completion of the distribution of the Securities, any offering material in connection with the offering and sale of the Securities other than any Preliminary Prospectus, the Prospectus, the Registration Statement and other materials, if any, permitted by the Securities Act and consistent with Section 4(d) below.

(vv) Since the date of the preliminary prospectus included in the Registration Statement filed with the Commission on October 5, 2018 (or, if earlier, the first date on which the Company engaged directly or through any Person authorized to act on its behalf in any Testing-the-Waters Communication (as defined herein)) through the date hereof, the Company has been and is an “emerging growth company,” as defined in Section 2(a) of the Securities Act (an “Emerging Growth Company”). “Testing-the-Waters Communication” means any oral or written communication with potential investors undertaken in reliance on Section 5(d) of the Securities Act.

(ww) The Company (a) has not alone engaged in any Testing-the-Waters Communication other than Testing-the-Waters Communications with the consent of the Underwriter with entities that are qualified institutional buyers within the meaning of Rule 144A under the Securities Act or institutions that are accredited investors within the meaning of Rule 501 under the Securities Act and (b) has not authorized anyone other than the Underwriter to engage in Testing-the-Waters Communications. The Company reconfirms that the Underwriter has been authorized to act on its behalf in undertaking Testing-the-Waters Communications. The Company has not distributed any Written Testing-the-Waters Communications (as defined herein). “Written Testing-the-Waters Communication” means any Testing-the-Waters Communication that is a written communication within the meaning of Rule 405 under the Securities Act.

(xx) The Company maintains written policies and procedures reasonably designed for the Company to remain in substantial compliance with the laws, rules and regulations applicable to it and its business activities. The Company maintains supervisory policies and procedures reasonably designed to permit supervisors to monitor the Company's substantial compliance with applicable laws, rules and regulations. The Company maintains an internal audit function reasonably designed to review the efficacy of the Company's compliance and supervisory policies and procedures.

3 . Conditions of the Underwriter's Obligation. The obligation of the Underwriter to purchase the Securities is subject to each of the following terms and conditions:

(a) Notification that the Registration Statement has become effective shall have been received by the Underwriter and the Prospectus shall have been timely filed with the Commission in accordance with Section 4(a) of this Agreement and any material required to be filed by the Company pursuant to Rule 433(d) of the Rules shall have been timely filed with the Commission in accordance with such rule.

(b) No order preventing or suspending the use of any Preliminary Prospectus, the Prospectus or any "free writing prospectus" (as defined in Rule 405 of the Rules), shall have been or shall be in effect and no order suspending the effectiveness of the Registration Statement shall be in effect and no proceedings for such purpose shall be pending before or threatened by the Commission, and any requests for additional information on the part of the Commission (to be included in the Registration Statement or the Prospectus or otherwise) shall have been complied with to the satisfaction of the Commission and the Underwriter. If the Company has elected to rely upon Rule 430A, Rule 430A information previously omitted from the effective Registration Statement pursuant to Rule 430A shall have been transmitted to the Commission for filing pursuant to Rule 424(b) within the prescribed time period and the Company shall have provided evidence satisfactory to the Underwriter of such timely filing, or a post-effective amendment providing such information shall have been promptly filed and declared effective in accordance with the requirements of Rule 430A.

(c) The representations and warranties of the Company contained in this Agreement and in any certificates delivered pursuant to Section 3(d) shall be true and correct when made and on and as of the Closing Date as if made on such date. The Company shall have performed all covenants and agreements and satisfied all the conditions contained in this Agreement required to be performed or satisfied by it at or before the Closing Date.

(d) The Underwriter shall have received on the Closing Date a certificate, addressed to the Underwriter and dated the Closing Date, of the chief executive or chief operating officer and the chief financial officer or chief accounting officer of the Company to the effect that: (i) the representations, warranties and agreements of the Company in this Agreement were true and correct when made and are true and correct as of the Closing Date; (ii) the Company has performed all covenants and agreements and satisfied all conditions contained herein; (iii) they have carefully examined the Registration Statement, the Prospectus, the General Disclosure Package, and any individual Issuer Free Writing Prospectus and, in their opinion (A) as of the Effective Date the Registration Statement and Prospectus did not include, and as of the Applicable Time, neither (i) the General Disclosure Package, nor (ii) any individual Issuer Free Writing Prospectus, when considered together with the General Disclosure Package, included, any untrue statement of a material fact and did not omit to state a material fact required to be stated therein or necessary to make the statements therein, in light of the circumstances under which they were made, not misleading, and (B) since the Effective Date no event has occurred which should have been set forth in a supplement or otherwise required an amendment to the Registration Statement, the Statutory Prospectus or the Prospectus; (iv) no stop order suspending the effectiveness of the Registration Statement has been issued and, to their knowledge, no proceedings for that purpose have been instituted or are pending under the Securities Act and (v) there has not occurred any material adverse change in the assets, properties, condition, financial or otherwise, or in the results of operations, business affairs or business prospects of the Company and its subsidiaries considered as a whole.

(e) The Underwriter shall have received: (i) simultaneously with the execution of this Agreement a signed letter from the Auditor addressed to the Underwriter and dated the date of this Agreement, in form and substance reasonably satisfactory to the Underwriter, containing statements and information of the type ordinarily included in accountants' "comfort letters" to underwriters with respect to the financial statements and certain financial information contained in the Registration Statement and the Disclosure Package, and (ii) on the Closing Date, a signed letter from the Auditor addressed to the Underwriter and dated the Closing Date, in form and substance reasonably satisfactory to the Underwriter containing statements and information of the type ordinarily included in accountants' "comfort letters" to underwriters with respect to the financial statements and certain financial information contained in the Registration Statement and the Prospectus.

(f) The Underwriter shall have received on the Closing Date from K&L Gates LLP, counsel for the Company, an opinion and negative assurance statement, addressed to the Underwriter and dated the Closing Date, in form and substance reasonably satisfactory to the Underwriter.

(g) The Underwriter shall have received on the Closing Date from OGAWA Professional Corporation, intellectual property counsel for the Company, an opinion and negative assurance statement, addressed to the Underwriter and dated the Closing Date, in form and substance reasonably satisfactory to the Underwriter.

(h) The Underwriter shall have received on the Closing Date from Lowenstein Sandler LLP, counsel for the Underwriter, an opinion and negative assurance statement, addressed to the Underwriter and dated the Closing Date, in form and substance reasonably satisfactory to the Underwriter.

(i) All proceedings taken in connection with the sale of the Securities as herein contemplated shall be reasonably satisfactory in form and substance to the Underwriter, and its counsel.

(j) The Underwriter shall have received copies of the Lock-up Agreements executed by each entity or person listed on Schedule II hereto.

(k) The Company shall have submitted a Notification Form: Listing of Additional Securities with the Nasdaq Capital Market with respect to the Underlying Securities and Nasdaq shall have raised no objection with respect to the listing of the Underlying Securities which has not been resolved to the reasonable satisfaction of the Underwriter on or before the Closing Date.

(l) The Underwriter shall be reasonably satisfied that since the respective dates as of which information is given in the Registration Statement, the Statutory Prospectus, the General Disclosure Package and the Prospectus, (i) there shall not have been any material change in the capital stock of the Company or any material change in the indebtedness (other than in the ordinary course of business) of the Company, (ii) except as set forth or contemplated by the Registration Statement, the Statutory Prospectus, the General Disclosure Package or the Prospectus, no material oral or written agreement or other transaction shall have been entered into by the Company that is not in the ordinary course of business or that could reasonably be expected to result in a material reduction in the future earnings of the Company, (iii) no loss or damage (whether or not insured) to the property of the Company shall have been sustained that had or could reasonably be expected to have a Material Adverse Effect, (iv) no legal or governmental action, suit or proceeding affecting the Company or any of its properties that is material to the Company or that affects or could reasonably be expected to affect the transactions contemplated by this Agreement or the Indenture shall have been instituted or threatened and (v) there shall not have been any material change in the assets, properties, condition (financial or otherwise), or in the results of operations, business affairs or business prospects of the Company or its subsidiaries considered as a whole that makes it impractical or inadvisable in the Underwriter's judgment to proceed with the purchase or offering of the Securities as contemplated hereby.

(m) On or prior to the Closing Date, FINRA shall have confirmed that it has not raised any objection with respect to the fairness and reasonableness of the underwriting terms and agreements in connection with the offering of the Securities.

(n) The Company shall have furnished or caused to be furnished to the Underwriter such further certificates or documents as the Underwriter shall have reasonably requested.

4. Covenants and other Agreements of the Company and the Underwriter.

(a) The Company covenants and agrees as follows:

(i) The Company will use its best efforts to cause the Registration Statement, if not effective at the time of execution of this Agreement, and any amendments thereto, to become effective as promptly as possible. The Company shall prepare the Prospectus in a form approved by the Underwriter and file such Prospectus pursuant to Rule 424(b) under the Securities Act not later than the Commission's close of business on the second business day following the execution and delivery of this Agreement, or, if applicable, such earlier time as may be required by the Rules. The Company shall prepare a final term sheet, containing a description of the Securities, in a form approved by the Underwriter and file such term sheet pursuant to Rule 433(d) under the Securities Act within the time required by such Rule. The Company will file with the Commission all Issuer Free Writing Prospectuses in the time and manner required under Rules 433(d) or 163(b)(2), as the case may be.

(ii) The Company shall promptly advise the Underwriter in writing (A) when any post-effective amendment to the Registration Statement shall have become effective or any supplement to the Prospectus shall have been filed, (B) of any request by the Commission for any amendment of the Registration Statement or the Prospectus or for any additional information, (C) of the issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement or of any order preventing or suspending the use of any preliminary prospectus or any "free writing prospectus", as defined in Rule 405 of the Rules, or the institution or threatening of any proceeding for that purpose and (D) of the receipt by the Company of any notification with respect to the suspension of the qualification of the Securities and the Underlying Securities for sale in any jurisdiction or the initiation or threatening of any proceeding for such purpose. The Company shall not file any amendment of the Registration Statement or supplement to the Prospectus or any document incorporated by reference in the Registration Statement or any Issuer Free Writing Prospectus unless the Company has furnished the Underwriter a copy for its review prior to filing and shall not file any such proposed amendment or supplement to which the Underwriter reasonably object. The Company shall use its best efforts to prevent the issuance of any such stop order and, if issued, to obtain as soon as possible the withdrawal thereof.

(iii) If, at any time when a prospectus relating to the Securities or the Underlying Securities (or, in lieu thereof, the notice referred to in Rule 173(a) of the Rules) is required to be delivered under the Securities Act, any event occurs as a result of which the Prospectus as then amended or supplemented would include any untrue statement of a material fact or omit to state any material fact necessary to make the statements therein in the light of the circumstances under which they were made not misleading, or if it shall be necessary to amend or supplement the Prospectus to comply with the Securities Act or the Rules, the Exchange Act and the rules and regulations of the Commission thereunder or the Trust Indenture Act and the rules and regulations of the Commission thereunder, the Company promptly shall prepare and file with the Commission, subject to the second sentence of paragraph (ii) of this Section 4(a), an amendment or supplement which shall correct such statement or omission or an amendment which shall effect such compliance.

(iv) If at any time following issuance of an Issuer Free Writing Prospectus there occurs an event or development as a result of which such Issuer Free Writing Prospectus would conflict with the information contained in the Registration Statement or would include an untrue statement of a material fact or would omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in the light of the circumstances prevailing at the subsequent time, not misleading, the Company will promptly notify the Underwriter and will promptly amend or supplement, at its own expense, such Issuer Free Writing Prospectus to eliminate or correct such conflict or so that the statements in such Issuer Free Writing Prospectus as so amended or supplemented will not include an untrue statement of a material fact or omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances prevailing at such time, not misleading, as the case may be.

(v) The Company shall make generally available to its security holders and to the Underwriter as soon as practicable, but not later than 45 days after the end of the 12-month period beginning at the end of the fiscal quarter of the Company during which the Effective Date occurs (or 90 days if such 12-month period coincides with the Company's fiscal year), an earning statement (which need not be audited) of the Company, covering such 12-month period, which shall satisfy the provisions of Section 11(a) of the Securities Act or Rule 158 of the Rules.

(vi) The Company shall furnish to the Underwriter and counsel for the Underwriter, without charge, signed copies of the Registration Statement (including all exhibits thereto and amendments thereof) and all amendments thereof and, so long as delivery of a prospectus by the Underwriter or a dealer may be required by the Securities Act or the Rules, as many copies of any Preliminary Prospectus, any Issuer Free Writing Prospectus and the Prospectus and any amendments thereof and supplements thereto as the Underwriter may reasonably request. If applicable, the copies of the Registration Statement, preliminary prospectus, any Issuer Free Writing Prospectus and Prospectus and each amendment and supplement thereto furnished to the Underwriter will be identical to the electronically transmitted copies thereof filed with the Commission pursuant to EDGAR, except to the extent permitted by Regulation S-T.

(vii) The Company shall cooperate with the Underwriter and its counsel in endeavoring to qualify the Securities and the Underlying Securities for offer and sale (or obtain exemptions from the application thereof) in connection with the offering under the laws of such jurisdictions as the Underwriter may designate and shall maintain such qualifications in effect so long as required for the distribution of the Securities; provided, however, that the Company shall not be required in connection therewith, as a condition thereof, to qualify as a foreign corporation or to execute a general consent to service of process in any jurisdiction or subject itself to taxation as doing business in any jurisdiction.

(viii) The Company, during the period when the Prospectus (or in lieu thereof, the notice referred to in Rule 173(a) of the Rules) is required to be delivered under the Securities Act and the Rules or the Exchange Act, will file all reports and other documents required to be filed with the Commission pursuant to Section 13, 14 or 15 of the Exchange Act within the time periods required by the Exchange Act and the regulations promulgated thereunder.

(ix) Without the prior written consent of the Underwriter, during the period commencing on and including the date hereof and ending on and including the 90th day following the date hereof (the “Lock-Up Period”), the Company and each of its individual directors and executive officers shall not issue, sell or register with the Commission (other than (I) on Form S-8 or on any successor form and (II) pursuant to post-effective amendments to registration statements on Form S-1 effective as of the date hereof, pursuant to which such post-effective amendments will convert such registration statements on Form S-1 into registration statements on Form S-3), or otherwise dispose of, directly or indirectly, any equity securities of the Company (or any securities convertible into, exercisable for or exchangeable for equity securities of the Company), except (1) for the issuance of the Securities and the Underlying Securities pursuant to the Registration Statement and the issuance of shares of Common Stock, options to purchase shares of Common Stock or warrants, restricted stock, restricted stock units or deferred stock units, or the issuance of shares of Common Stock upon exercise, exchange, or vesting in or pursuant to any stock option, warrant, restricted stock, restricted stock units, deferred stock units, stock bonus, stock purchase or other stock plans or arrangements that are either described in the Company’s reports or other documents required to be filed with the Commission under the Exchange Act, the Prospectus or the Statutory Prospectus (including, subject to approval by the Company’s stockholders, the Company’s 2018 Stock Incentive Plan and its Employee Stock Purchase Plan as described in the Company’s definitive proxy statement filed with the Commission on September 18, 2018), (2) as contemplated in the Equity Offering, (3) for the disposal of any of the Company’s securities via net exercise, cashless exercise or withholding of any such securities acquired upon exercise, vesting or other means of acquisition in order to pay the exercise price, if any, or to discharge or otherwise satisfy any tax liability incurred as a result of such exercise, vesting or other acquisition; provided that the underlying shares of Common Stock shall continue to be subject to the restrictions on transfer described herein, (4) the issuance of shares of Common Stock to holders of convertible notes outstanding on or after the date hereof upon conversion of any such convertible notes pursuant to and in accordance with the terms thereof (in each case, as described in the Company’s reports or other documents required to be filed with the Commission under the Exchange Act, the Prospectus or the Statutory Prospectus), (5) for the issuance of shares to third parties in connection with strategic, commercial or manufacturing arrangements, provided that such shares are not transferable prior to the end of the Lock-Up Period, (6) for the issuance of shares upon anti-dilution adjustments in accordance with the terms of the Company’s currently outstanding securities as described in the Prospectus or (7) as otherwise permitted under the terms of the lock-up agreements set forth on Exhibit A attached hereto.

(x) On or before completion of this offering, the Company shall make all filings required under applicable securities laws and by the Nasdaq Capital Market (including any required registration under the Exchange Act).

(xi) Prior to the Closing Date, the Company will issue no press release or other communications directly or indirectly except as related to the Equity Offering and hold no press conference with respect to the Company, the condition, financial or otherwise, or the earnings, business affairs or business prospects of any of them, or the offering of the Securities without the prior written consent of the Underwriter unless in the judgment of the Company and its counsel, and after notification to the Underwriter, such press release or communication is required by law.

(xii) The Company will apply the net proceeds from the offering of the Securities in the manner set forth under “Use of Proceeds” in the Prospectus.

(xiii) The Company will promptly notify the Underwriter if the Company ceases to be an Emerging Growth Company at any time prior to the later of (a) completion of the distribution of the Securities within the meaning of the Securities Act and (b) completion of the 90 day restricted period referred to in Section 4(a)(ix) hereof.

(xiv) If at any time following the distribution of any Written Testing-the-Waters Communication there occurred or occurs an event or development as a result of which such Written Testing-the-Waters Communication included or would include an untrue statement of a material fact or omitted or would omit to state a material fact necessary in order to make the statements therein, in the light of the circumstances existing at that subsequent time, not misleading, the Company will promptly notify the Underwriter and will promptly amend or supplement, at its own expense, such Written Testing-the-Waters Communication to eliminate or correct such untrue statement or omission.

(xv) The Company will reserve and keep available at all times, free of preemptive rights, shares of Common Stock for the purpose of enabling the Company to satisfy any obligations to issue the Maximum Number of Underlying Securities (less any number of shares of Common Stock theretofore issued as Underlying Securities);

(b) The Company agrees to pay, or reimburse if paid by the Underwriter, whether or not the transactions contemplated hereby are consummated or this Agreement is terminated, all costs and expenses incident to the public offering of the Securities and the performance of the obligations of the Company under this Agreement including those relating to: (i) the preparation, printing, reproduction, filing and distribution of the Indenture, the Registration Statement including all exhibits thereto, each Preliminary Prospectus, the Prospectus, any Issuer Free Writing Prospectus, all amendments and supplements thereto and any document incorporated by reference therein, and the printing, filing and distribution of this Agreement; (ii) the preparation and delivery of certificates for the Securities to the Underwriter; (iii) the registration or qualification of the Securities and the Underlying Securities for offer and sale under the securities or Blue Sky laws of the various jurisdictions referred to in Section 4(a)(vii), including the reasonable fees and disbursements of counsel for the Underwriter in connection with such registration and qualification and the preparation, printing, distribution and shipment of preliminary and supplementary Blue Sky memoranda; (iv) the furnishing (including costs of shipping and mailing) to the Underwriter of copies of each Preliminary Prospectus, the Prospectus and all amendments or supplements to the Prospectus, any Issuer Free Writing Prospectus, and of the several documents required by this Section to be so furnished, as may be reasonably requested for use in connection with the offering and sale of the Securities by the Underwriter or by dealers to whom Securities may be sold; (v) the filing fees of FINRA in connection with its review of the terms of the public offering and reasonable fees and disbursements of counsel for the Underwriter in connection with such review; (vi) inclusion of the Underlying Securities for listing on the Nasdaq Capital Market; and (vii) all transfer taxes, if any, with respect to the sale and delivery of the Securities by the Company to the Underwriter. The Company will reimburse the Underwriter for its reasonable out-of-pocket costs and expenses, including its legal fees and disbursements, in connection with the purchase and sale of the Securities contemplated hereby in an amount not to exceed \$150,000 without the Company's prior approval (such approval not to be unreasonably withheld, conditioned or delayed) (including amounts payable pursuant to clauses (iii) and (v) above). Subject to the provisions of Section 7, the Underwriter agrees to pay, whether or not the transactions contemplated hereby are consummated or this Agreement is terminated, all costs and expenses incident to the performance of the obligations of the Underwriter under this Agreement not payable by the Company pursuant to the preceding sentence, including, without limitation, the fees and disbursements of counsel for the Underwriter.

(c) The Company acknowledges and agrees that the Underwriter has acted and is acting solely in the capacity of a principal in an arm's length transaction between the Company, on the one hand, and the Underwriter, on the other hand, with respect to the offering of the Securities contemplated hereby (including in connection with determining the terms of the offering) and not as a financial advisor, agent or fiduciary to the Company or any other person. Additionally, the Company acknowledges and agrees that the Underwriter has not and will not advise the Company or any other person as to any legal, tax, investment, accounting or regulatory matters in any jurisdiction. The Company has consulted with its own advisors concerning such matters and shall be responsible for making its own independent investigation and appraisal of the transactions contemplated hereby, and the Underwriter shall have no responsibility or liability to the Company or any other person with respect thereto, whether arising prior to or after the date hereof. Any review by the Underwriter of the Company, the transactions contemplated hereby or other matters relating to such transactions have been and will be performed solely for the benefit of the Underwriter and shall not be on behalf of the Company. The Company agrees that it will not claim that the Underwriter has rendered advisory services of any nature or respect, or owes a fiduciary duty to the company or any other person in connection with any such transaction or the process leading thereto.

(d) The Company represents and agrees that, unless it obtains the prior consent of the Underwriter, and the Underwriter represents and agrees that, unless it obtains the prior consent of the Company, it has not made and will not make any offer relating to the Securities that would constitute an "issuer free writing prospectus," as defined in Rule 433, or that would otherwise constitute a "free writing prospectus," as defined in Rule 405, required to be filed with the Commission. The Company has complied and will comply with the requirements of Rule 433 under the Act applicable to any Issuer Free Writing Prospectus, including timely filing with the Commission where required, legending and record keeping. The Company represents that it has satisfied and agrees that it will satisfy the conditions set forth in Rule 433 of the Rules to avoid a requirement to file with the Commission any Road Show.

5. Indemnification.

(a) The Company agrees to indemnify and hold harmless the Underwriter, its officers and employees and each person, if any, who controls the Underwriter within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act against any and all losses, claims, damages and liabilities, joint or several (including any reasonable investigation, legal and other expenses incurred in connection with, and any amount paid in settlement of, any action, suit or proceeding or any claim asserted), to which they, or any of them, may become subject under the Securities Act, the Exchange Act or other Federal or state law or regulation, at common law or otherwise, insofar as such losses, claims, damages or liabilities arise out of or are based upon any untrue statement or alleged untrue statement of a material fact contained in any preliminary prospectus, the Registration Statement, the Statutory Prospectus, the Prospectus, any Issuer Free Writing Prospectus or any "issuer information" filed or required to be filed pursuant to Rule 433(d) of the Rules, any amendment thereof or supplement thereto, any Written Testing-the-Waters Communication, or in any Blue Sky application or other information or other documents executed by the Company filed in any state or other jurisdiction to qualify any or all of the Securities and the Underlying Securities under the securities laws thereof (any such application, document or information being hereinafter referred to as a "Blue Sky Application") or arise out of or are based upon any omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading; provided, however, that such indemnity shall not inure to the benefit of the Underwriter (or any person controlling the Underwriter) on account of any losses, claims, damages or liabilities arising from the sale of the Securities to any person by the Underwriter if such untrue statement or omission or alleged untrue statement or omission was made in such preliminary prospectus, the Registration Statement, the Prospectus, the Statutory Prospectus, any Issuer Free Writing Prospectus or such amendment or supplement thereto, any Written Testing-the-Waters Communication, or in any Blue Sky Application in reliance upon and in conformity with the Underwriter Information. This indemnity agreement will be in addition to any liability which the Company may otherwise have.

(b) The Underwriter agrees to indemnify and hold harmless the Company and each person, if any, who controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act, each director of the Company, and each officer of the Company who signs the Registration Statement, against any losses, claims, damages or liabilities (including any reasonable investigation, legal and other expenses incurred in connection with, and any amount paid in settlement of, any action, suit or proceeding or any claim asserted) to which such party may become subject, under the Securities Act or otherwise, insofar as such losses, claims, damages or liabilities (or actions in respect thereof) arise out of or are based upon an untrue statement or alleged untrue statement of a material fact contained in any preliminary prospectus, the Registration Statement, the Statutory Prospectus or the Prospectus, any Issuer Free Writing Prospectus or any amendment thereof or supplement thereto, or arise out of or are based upon the omission or alleged omission to state therein a material fact required to be stated therein or necessary to make the statements therein not misleading, in each case to the extent, but only to the extent, that such untrue statement or alleged untrue statement or omission or alleged omission was made in any Preliminary Prospectus, the Registration Statement, the Statutory Prospectus or the Prospectus or any such amendment or supplement in reliance upon and in conformity with the Underwriter Information; provided, however, that the obligation of the Underwriter to indemnify the Company (including any controlling person, director or officer thereof) shall be limited to the amount of the underwriting discount applicable to the Securities to be purchased by the Underwriter hereunder.

(c) Any party that proposes to assert the right to be indemnified under this Section 5 will, promptly after receipt of notice of commencement of any action, suit or proceeding against such party in respect of which a claim is to be made against an indemnifying party or parties under this Section, notify each such indemnifying party of the commencement of such action, suit or proceeding, enclosing a copy of all papers served. No indemnification provided for in Section 5(a) or 5(b) shall be available to any party who shall fail to give notice as provided in this Section 5(c) if the party to whom notice was not given was unaware of the action, suit or proceeding to which such notice would have related and was prejudiced by the failure to give such notice but the omission so to notify such indemnifying party of any such action, suit or proceeding shall not relieve it from any liability that it may have to any indemnified party for contribution or otherwise than under this Section 5. In case any such action, suit or proceeding shall be brought against any indemnified party and it shall notify the indemnifying party of the commencement thereof, the indemnifying party shall be entitled to participate in, and, to the extent that it shall wish, jointly with any other indemnifying party similarly notified, to assume the defense thereof, with counsel reasonably satisfactory to such indemnified party, and after notice from the indemnifying party to such indemnified party of its election so to assume the defense thereof and the approval by the indemnified party of such counsel, the indemnifying party shall not be liable to such indemnified party for any legal or other expenses, except as provided below and except for the reasonable costs of investigation subsequently incurred by such indemnified party in connection with the defense thereof. The indemnified party shall have the right to employ its counsel in any such action, but the fees and expenses of such counsel shall be at the expense of such indemnified party unless (i) the employment of counsel by such indemnified party has been authorized in writing by the indemnifying parties, (ii) the indemnified party shall have been advised by counsel that there may be one or more legal defenses available to it which are different from or in addition to those available to the indemnifying party (in which case the indemnifying parties shall not have the right to direct the defense of such action on behalf of the indemnified party) or (iii) the indemnifying parties shall not have employed counsel to assume the defense of such action within a reasonable time after notice of the commencement thereof, in each of which cases the fees and expenses of counsel shall be at the expense of the indemnifying parties. An indemnifying party shall not be liable for any settlement of any action, suit, and proceeding or claim effected without its written consent, which consent shall not be unreasonably withheld or delayed.

(d) No indemnifying party shall, without the prior written consent of the indemnified party, effect any settlement, compromise or consent to the entry of judgment in any pending or threatened action, suit or proceeding in respect of which any indemnified party is a party or could be named and indemnity was or would be sought hereunder by such indemnified party, unless such settlement, compromise or consent (a) includes an unconditional release of such indemnified party from all liability for claims that are the subject matter of such action, suit or proceeding and (b) does not include a statement as to or an admission of fault, culpability or a failure to act by or on behalf of any indemnified party.

6 . Contribution. In order to provide for just and equitable contribution in circumstances in which the indemnification provided for in Section 5(a) or 5(b) is due in accordance with its terms but for any reason is unavailable to or insufficient to hold harmless an indemnified party in respect to any losses, liabilities, claims, damages or expenses referred to therein, then each indemnifying party shall contribute to the aggregate losses, liabilities, claims, damages and expenses (including any investigation, legal and other expenses reasonably incurred in connection with, and any amount paid in settlement of, any action, suit or proceeding or any claims asserted, but after deducting any contribution received by any person entitled hereunder to contribution from any person who may be liable for contribution) incurred by such indemnified party, as incurred, in such proportion as is appropriate to reflect the relative benefits received by the Company on the one hand and the Underwriter on the other hand from the offering of the Securities pursuant to this Agreement or, if such allocation is not permitted by applicable law, in such proportion as is appropriate to reflect not only the relative benefits referred to above but also the relative fault of the Company on the one hand and the Underwriter on the other hand in connection with the statements or omissions which resulted in such losses, liabilities, claims, damages or expenses, as well as any other relevant equitable considerations. The Company and the Underwriter agree that it would not be just and equitable if contribution pursuant to this Section 6 were determined by pro rata allocation or by any other method of allocation which does not take account of the equitable considerations referred to above. The aggregate amount of losses, liabilities, claims, damages and expenses incurred by an indemnified party and referred to above shall be deemed to include any legal or other expenses reasonably incurred by such indemnified party in investigating, preparing or defending against any litigation, or any investigation or proceeding by any governmental agency or body, commenced or threatened, or any claim whatsoever based upon any such untrue or alleged untrue statement or omission or alleged omission. Notwithstanding the provisions of this Section 6, the Underwriter shall not be required to contribute any amount in excess of the underwriting discounts and commissions applicable to the Securities purchased by the Underwriter. No person guilty of fraudulent misrepresentation (within the meaning of Section 11(f) of the Securities Act) shall be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. For purposes of this Section 6, each person, if any, who controls the Underwriter within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act shall have the same rights to contribution as the Underwriter, and each director of the Company, each officer of the Company who signed the Registration Statement, and each person, if any, who controls the Company within the meaning of the Section 15 of the Securities Act or Section 20 of the Exchange Act, shall have the same rights to contribution as the Company, as the case may be. Any party entitled to contribution will, promptly after receipt of notice of commencement of any action, suit or proceeding against such party in respect of which a claim for contribution may be made against another party or parties under this Section 6, notify such party or parties from whom contribution may be sought, but the omission so to notify such party or parties from whom contribution may be sought shall not relieve the party or parties from whom contribution may be sought from any other obligation it or they may have hereunder or otherwise than under this Section 6. No party shall be liable for contribution with respect to any action, suit, proceeding or claim settled without its written consent.

7. Termination.

(a) This Agreement may be terminated with respect to the Securities to be purchased on the Closing Date by the Underwriter by notifying the Company in writing at any time at or before the Closing Date in the absolute discretion of the Underwriter if: (i) there has occurred any material adverse change in the securities markets or any event, act or occurrence that has materially disrupted, or in the opinion of the Underwriter, will in the future materially disrupt, the securities markets or there shall be such a material adverse change in general financial, political or economic conditions or the effect of international conditions on the financial markets in the United States is such as to make it, in the judgment of the Underwriter, inadvisable or impracticable to market the Securities or enforce contracts for the sale of the Securities; (ii) there has occurred any outbreak or material escalation of hostilities or acts of terrorism or other calamity or crisis the effect of which on the financial markets of the United States is such as to make it, in the judgment of the Underwriter, inadvisable or impracticable to market the Securities or enforce contracts for the sale of the Securities; (iii) trading in the Securities, the Common Stock or any securities of the Company has been suspended or materially limited by the Commission or trading generally on the New York Stock Exchange, Inc., the NYSE American or the Nasdaq Stock Market has been suspended or materially limited, or minimum or maximum ranges for prices for securities shall have been fixed, or maximum ranges for prices for securities have been required, by any of said exchanges or by such system or by order of the Commission, FINRA, or any other governmental or regulatory authority; or (iv) a banking moratorium has been declared by any state or Federal authority; or (v) in the judgment of the Underwriter, there has been, since the time of execution of this Agreement or since the respective dates as of which information is given in the Prospectus, any material adverse change in the assets, properties, condition, financial or otherwise, or in the results of operations, business affairs or business prospects of the Company and its subsidiaries considered as a whole, whether or not arising in the ordinary course of business.

(b) If this Agreement is terminated pursuant to any of its provisions, the Company shall not be under any liability to the Underwriter, and the Underwriter shall be under no liability to the Company, except that (x) if this Agreement is terminated by the Underwriter because of any failure, refusal or inability on the part of the Company to comply with the terms or to fulfill any of the conditions of this Agreement, the Company will reimburse the Underwriter for all out-of-pocket expenses (including the reasonable fees and disbursements of their counsel) incurred by it in connection with the proposed purchase and sale of the Securities or in contemplation of performing their obligations hereunder and (y) if the Underwriter shall have failed or refused to purchase the Securities under this Agreement, without some reason sufficient hereunder to justify cancellation or termination of its obligations under this Agreement, the Underwriter shall not be relieved of liability to the Company.

8. [RESERVED]

9 . Miscellaneous. The respective agreements, representations, warranties, indemnities, rights of contribution and other statements of the Company and the Underwriter, as set forth in this Agreement or made by or on behalf of them pursuant to this Agreement, shall remain in full force and effect, regardless of any investigation (or any statement as to the results thereof) made by or on behalf of any Underwriter or the Company or any of their respective officers, directors or controlling persons referred to in Sections 5 and 6 hereof, and shall survive delivery of and payment for the Securities. In addition, the provisions of Sections 4(b), 5, 6 and 7 shall survive the termination or cancellation of this Agreement.

This Agreement has been and is made for the benefit of the Underwriter, the Company and their respective successors and assigns, and, to the extent expressed herein, for the benefit of persons controlling the Underwriter, or the Company, and directors and officers of the Company, and their respective successors and assigns, and no other person shall acquire or have any right under or by virtue of this Agreement. The term "successors and assigns" shall not include any purchaser of Securities from the Underwriter merely because of such purchase. The invalidity or unenforceability of any Section, paragraph or provision of this Agreement shall not affect the validity or enforceability of any other Section, paragraph or provision hereof. If any Section, paragraph or provision of this Agreement is for any reason determined to be invalid or unenforceable, there shall be deemed to be made such minor changes (and only such minor changes) as are necessary to make it valid and enforceable.

No amendment or waiver of any provision of this Agreement, nor any consent or approval to any departure therefrom, shall in any event be effective unless and until the same shall be in writing and signed by the Company and the Underwriter.

All notices and communications hereunder shall be in writing and mailed or delivered or by telephone or telegraph if subsequently confirmed in writing, (a) if to the Underwriter, c/o Oppenheimer & Co. Inc., 85 Broad Street, New York, New York 10004 Attention: Equity Capital Markets, with a copy to Oppenheimer & Co. Inc., 85 Broad Street, New York, New York 10004 Attention: General Counsel, and to Lowenstein Sandler LLP, 1251 Avenue of the Americas, New York, New York 10020 Attention: John D. Hogoboom and (b) if to the Company, to its agent for service as such agent's address appears on the cover page of the Registration Statement with a copy to K&L Gates LLP, Hearst Tower, 47th Floor, 214 N. Tryon Street, Charlotte, North Carolina 28202 Attention: Sean M. Jones.

This Agreement and any claim, controversy or dispute arising under or related to this Agreement shall be governed by and construed in accordance with the laws of the State of New York applicable to agreements made and to be performed in such state.

This Agreement may be signed in any number of counterparts, each of which shall be an original, with the same effect as if the signatures thereto and hereto were upon the same instrument. The headings herein are included for convenience of reference only and are not intended to be part of, or to affect the meaning or interpretation of, this Agreement. This Agreement constitutes the entire agreement of the parties to this Agreement and supersedes all prior written or oral and all contemporaneous oral agreements, understandings and negotiations with respect to the subject matter hereof.

Please confirm that the foregoing correctly sets forth the agreement among us.

Very truly yours,

AKOUSTIS TECHNOLOGIES, INC.

By /s/ Jeffrey B. Shealy

Name: Jeffrey B. Shealy

Title: Chief Executive Officer

Confirmed:

OPPENHEIMER & CO. INC.

By /s/ Eric Helenek

Name: Eric Helenek

Title: Managing Director

INDENTURE
between
Akoustis Technologies, Inc.
and
The Bank of New York Mellon Trust Company, N.A.
TRUSTEE

Dated as of October 23, 2018

Providing for Issuance of
Debt Securities in Series

Reconciliation and tie between Indenture, dated as of October 23, 2018, and the Trust Indenture Act of 1939, as amended.

Trust Indenture Act of 1939 Section	Indenture Section
310(a)(1)	6.11
(a)(2)	6.11
(a)(3)	TIA
(a)(4)	Not Applicable
(a)(5)	TIA
(b)	6.9; 6.11; TIA
311(a)	TIA
(b)	TIA
312(a)	6.7
(b)	TIA
(c)	TIA
313(a)	6.6; TIA
(b)	TIA
(c)	6.6; TIA
(d)	6.6
314(a)	9.6; TIA
(b)	Not Applicable
(c)(1)	1.2
(c)(2)	1.2
(c)(3)	Not Applicable
(d)	Not Applicable
(e)	1.2
(f)	TIA
315(a)	TIA
(b)	6.5
(c)	6.1
(d)(1)	TIA
(d)(2)	TIA
(d)(3)	TIA
(e)	TIA
316(a)(1)(A)	5.8
(a)(1)(B)	5.7
(b)	5.2; 5.3; 5.10
(c)	TIA
317(a)(1)	5.3
(a)(2)	5.4
(b)	9.3
318(a)	1.11
(b)	TIA
(c)	1.11; TIA

Note: This Cross-Reference Table shall not, for any purpose, be deemed to be part of the Indenture.

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INDENTURE, dated as of October 23, 2018, between Akoustis Technologies, Inc., a corporation duly organized and existing under the laws of the State of Delaware (the “Company”), and The Bank of New York Mellon Trust Company, N.A., as trustee, a national banking association organized and existing under the laws of the United States of America, as trustee (the “Trustee”).

RECITALS

The Company has duly authorized the execution and delivery of this Indenture to provide for the issuance from time to time of its debentures, notes or other evidences of indebtedness (“Securities”) to be issued in one or more series as herein provided.

For and in consideration of the premises and the purchase of the Securities by the Holders thereof, it is mutually covenanted and agreed as follows for the equal and ratable benefit of the Holders of the Securities or of any series thereof:

ARTICLE I

DEFINITIONS AND OTHER PROVISIONS OF GENERAL APPLICATION

Section 1.1. DEFINITIONS. (a) For all purposes of this Indenture, except as otherwise expressly provided or unless the context otherwise requires:

- (1) the terms defined in this Article have the meanings assigned to them in this Article and include the plural as well as the singular;
- (2) all other terms used herein which are defined in the Trust Indenture Act, either directly or by reference therein, have the meanings assigned to them therein;
- (3) all accounting terms not otherwise defined herein have the meanings assigned to them in accordance with generally accepted accounting principles; and
- (4) 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.

“Affiliate” of any specified Person means any other Person directly or indirectly controlling or controlled by, or under direct or indirect common control with, such specified Person. For 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.

“Agent” means any Paying Agent or Registrar.

“Authenticating Agent” means any authenticating agent appointed by the Trustee pursuant to Section 6.13.

“Board” or “Board of Directors” means the Board of Directors of the Company or any duly authorized committee thereof to act on behalf of the Board.

“Board Resolution” means a copy of one or more resolutions of the Board of Directors, certified by the Corporate 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 the certificate.

“Business Day”, when used with respect to any Place of Payment or any other particular location referred to in this Indenture or in the Securities, means, unless otherwise specified with respect to any Securities pursuant to Section 3.1, each Monday, Tuesday, Wednesday, Thursday and Friday which is not a day on which banking institutions in that Place of Payment or particular location are authorized or required by law to be closed, except as may otherwise be provided in the form of Security of any particular series pursuant to the provisions of this Indenture.

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

“Common Stock” means the shares of common stock, \$0.001 par value per share, of the Company.

“Company” means the party named as the Company in the first paragraph of this Indenture until a successor shall have become such pursuant to the applicable provisions of this Indenture, and thereafter means such successors.

“Company Order” and “Company Request” mean, respectively, a written order or request signed in the name of the Company by the President, the Chief Executive Officer, the Chief Financial Officer, any Vice President, the Treasurer or the Corporate Secretary of the Company.

“Corporate Trust Office” means the corporate trust office of the Trustee at which at any particular time this Indenture shall be principally administered, which office at the date hereof is located at 10161 Centurion Parkway N., Jacksonville, Florida 32256, Attention: Corporate Trust Administration.

“Currency unit”, for all purposes of this Indenture, shall include any composite currency.

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

“Depository”, when used with respect to the Securities of or within any series issuable or issued in whole or in part in global form, means the Person designated as Depository by the Company pursuant to Section 3.1 until a successor Depository shall have become such pursuant to the applicable provisions of this Indenture, and thereafter shall mean or include each Person which is then a Depository hereunder, and if at any time there is more than one such Person, shall be a collective reference to such Persons.

“Dollar” or “\$” means the coin or currency of the United States as at the time of payment is legal tender for the payment of public and private debts.

“Euro” means the lawful currency of the participating member states of the European Union that adopt a single currency in accordance with the Treaty establishing the European Community, as amended by the Treaty on European Union signed February 7, 1992.

“Foreign Currency” shall mean any currency issued by the government or governments of one or more countries other than the United States or by any recognized confederation or association of such governments and shall include the Euro.

“Government Obligations” means securities which are (i) direct obligations of the United States or, if specified as contemplated by Section 3.1, the government which issued the currency in which the Securities of a particular series are payable, for the payment of which its full faith and credit is pledged or (ii) obligations of a Person controlled or supervised by and acting as an agency or instrumentality of the United States or, if specified as contemplated by Section 3.1, such government which issued the foreign currency in which the Securities of such series are payable, for the payment of which the full faith and credit of the United States or such other government is pledged (whether by guaranty or otherwise), which, in either case, are not callable or redeemable at the option of the issuer thereof, and shall also include a depository receipt issued by a bank or trust company as custodian with respect to any such Government Obligation or a specific payment of interest on or principal of any such Government Obligation held by such custodian for the account of the holder of a depository receipt, provided that (except as required by law) such custodian is not authorized to make any deduction from the amount payable to the holder of such depository receipt from any amount received by the custodian in respect of the Government Obligation evidenced by such depository receipt.

“Holder” means a person in whose name a Registered Security is registered on the Register.

“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, including, for all purposes of this instrument and any such supplemental indenture, the provisions of the Trust Indenture Act that are deemed to be a part of and govern this instrument and any such supplemental indenture, respectively; provided, however, that if at any time more than one Person is acting as Trustee under this Indenture due to the appointment of one or more separate Trustees for any one or more separate series of Securities, “Indenture” shall mean, with respect to such series of Securities for which any such Person is Trustee, 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, exclusive, however, of any provisions or terms which relate solely to other series of Securities for which such Person is not Trustee, regardless of when such terms or provisions were adopted, and exclusive of any provisions or terms adopted by means of one or more indentures supplemental hereto executed and delivered after such Person had become such Trustee, but to which such Person, as such Trustee, was not a party; provided further that in the event that this indenture is supplemented or amended by one or more indentures supplemental hereto which are only applicable to certain series of Securities, the term “Indenture” for a particular series of Securities shall only include the supplemental indentures applicable thereto.

“Indexed Security” means a Security the terms of which provide that the principal amount thereof payable at Stated Maturity may be more or less than the principal face amount thereof at original issuance.

“Interest”, when used with respect to an Original Issue Discount Security which by its terms bears interest only after Maturity, means interest payable after Maturity.

“Interest Payment Date”, when used with respect to any Security, means the Stated Maturity of an installment of interest on such Security.

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

“Officer” means the President, Chairman of the Board, the Chief Executive Officer, the Chief Operating Officer, the Chief Financial Officer the Treasurer, any Assistant Treasurer, the Controller, any Vice President (whether or not designated by a number or numbers or word or words added before the title “Vice President”), or the Corporate Secretary of the Company.

“Officer’s Certificate” means a certificate signed by an Officer of the Company.

“Opinion of Counsel” means a written opinion of legal counsel, who may be, without limitation, (a) an employee of the Company, or (b) outside counsel designated by the Company.

“Original Issue Discount Security” means any Security which provides for an amount less than the stated principal amount thereof to be due and payable upon declaration of acceleration of the Maturity thereof pursuant to Section 5.2.

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

- (i) Securities theretofore cancelled by the Trustee or delivered to the Trustee for cancellation;
- (ii) Securities, or portions thereof, for whose payment or redemption money or Government Obligations in the necessary amount has been theretofore deposited with the Trustee or any Paying Agent (other than the Company) in trust or set aside and segregated in trust by the Company (if the Company shall act as its own Paying Agent) for the Holders of such Securities, provided that, if such Securities are to be redeemed, notice of such redemption has been duly given pursuant to this Indenture or provisions therefor satisfactory to the Trustee have been made;

(iii) Securities, except to the extent provided in Sections 4.4 and 4.5, with respect to which the Company has effected defeasance and/or covenant defeasance as provided in Article IV; and

(iv) Securities which have been paid pursuant to Section 3.6 or in exchange for or in lieu of which other Securities have been authenticated and delivered pursuant to this Indenture, other than any such Securities in respect of which there shall have been presented to the Trustee proof satisfactory to it that such Securities are held by a bona fide purchaser in whose hands such Securities are valid obligations of the Company;

provided, however, that unless otherwise provided with respect to Securities of any series pursuant to Section 3.1, in determining whether the Holders of the requisite principal amount of the Outstanding Securities have given any request, demand, authorization, direction, notice, consent or waiver hereunder, or whether sufficient funds are available for redemption or for any other purpose, and for the purpose of making the calculations required by section 313 of the Trust Indenture Act or are present at a meeting of Holders for quorum purposes, (w) the principal amount of any Original Issue Discount Securities that may be counted in making such determination or calculation and that shall be deemed to be Outstanding for such purpose shall be equal to the amount of principal thereof that would be (or shall have been declared to be) due and payable, at the time of such determination, upon a declaration of acceleration of the maturity thereof pursuant to Section 5.2, (x) the principal amount of any Security denominated in one or more Foreign Currencies or currency units that may be counted in making such determination or calculation and that shall be deemed Outstanding for such purpose shall be equal to the Dollar equivalent, determined as of the date such Security is originally issued by the Company as set forth in an Exchange Rate Officer's Certificate delivered to the Trustee, of the principal amount (or, in the case of an Original Issue Discount Security, the Dollar equivalent, determined as of such date of original issuance, of the amount determined as provided in clause (w) above) of such Security, (y) unless otherwise provided with respect to such Security pursuant to Section 3.1, the principal amount of any Indexed Security that may be counted in making such determination or calculation and that shall be deemed Outstanding for such purpose shall be equal to the principal face amount of such Indexed Security at original issuance, and (z) Securities owned by the Company or any other obligor upon the Securities or any Affiliate of the Company or of such other obligor shall be disregarded and deemed not to be Outstanding, except that, in determining whether the Trustee shall be protected in making such calculation or in relying upon any such request, demand, authorization, direction, notice, consent or waiver, or determination as to the presence of a quorum, only Securities which a Responsible Officer of the Trustee actually knows to be so owned 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 so to act 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 of such other obligor.

"Paying Agent" means any Person authorized by the Company to pay the principal of, premium, if any, or interest and any other payments on all or any of the series of Securities on behalf of the Company.

“Periodic Offering” means an offering of Securities of a series from time to time the specific terms of which such Securities, including, without limitation, the rate or rates of interest or formula for determining the rate or rates of interest thereon, if any, the Maturity thereof and the redemption provisions, if any, with respect thereto, are to be determined by the Company upon the issuance of such Securities.

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

“Place of Payment”, when used with respect to the Securities of or within any series, means the place or places where the principal of, premium, if any, and interest and any other payments on such Securities are payable as specified as contemplated by Sections 3.1 and 9.2.

“Predecessor Security” 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 3.6 in exchange for or in lieu of a mutilated, destroyed, lost or stolen Security shall be deemed to evidence the same debt as the mutilated, destroyed, lost or stolen Security.

“Preferred Stock” as applied to the capital stock of the Company means capital stock of any class or classes (however designated) which is preferred as to the payment of dividends, or as to the distribution of assets upon any voluntary or involuntary liquidation or dissolution of the Company, over shares of Common Stock of such corporation.

“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, in whole or in part, means the price at which it is to be redeemed pursuant to this Indenture.

“Registered Security” means any Security issued hereunder and registered as to principal and interest in the Register.

“Regular Record Date” for the interest payable on any Interest Payment Date on the Securities of or within any series means the date specified for that purpose as contemplated by Section 3.1, which date shall be, unless otherwise specified pursuant to Section 3.1, the fifteenth day preceding such Interest Payment Date, whether or not such day shall be a Business Day.

“Responsible Officer”, when used with respect to the Trustee, shall mean any senior vice president, vice president, any assistant vice president or assistant secretary working in its corporate trust department and assigned responsibility for this engagement, or any other officer of the Trustee customarily performing functions similar to those performed by the persons who at the time shall be such officers, respectively, working in its corporate trust department and assigned responsibility for this engagement, or to whom any corporate trust matter relating to the Indenture or the Securities is referred because of his knowledge of and familiarity with a particular subject.

“Security” or “Securities” has the meaning stated in the first recital of this Indenture and more particularly means a Security or Securities of the Company issued, authenticated and delivered under this Indenture.

“Special Record Date” for the payment of any Defaulted Interest means a date fixed by the Trustee pursuant to Section 3.7.

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

“Subsidiary” means any Person of which the Company at the time owns or controls, directly or indirectly, more than 50% of the shares of outstanding stock or other equity interests having general voting power under ordinary circumstances to elect a majority of the Board of Directors, managers or trustees, as the case may be, of such Person (irrespective of whether or not at the time stock of any other class or classes or other equity interests of such corporation shall have or might have voting power by reason of the happening of any contingency).

“Trust Indenture Act” means the Trust Indenture Act of 1939 as in effect on the date of this Indenture, except as provided in Section 8.3.

“Trustee” means the party named as such in the first paragraph of this Indenture until a successor Trustee replaces it pursuant to the applicable provisions of this Indenture, and thereafter means such successor Trustee and if, at any time, there is more than one Trustee, “Trustee” as used with respect to the Securities of any series shall mean the Trustee with respect to the Securities of that series.

“United States” means, unless otherwise specified with respect to the Securities of any series as contemplated by Section 3.1, the United States of America (including the States and the District of Columbia), its territories, its possessions and other areas subject to its jurisdiction.

“U.S. Person” means, unless otherwise specified with respect to the Securities of any series as contemplated by Section 3.1, an individual citizen or resident of the United States, a corporation created or organized in or under the laws of the United States, any State thereof or the District of Columbia, or a partnership, estate or trust treated as a domestic partnership, estate or trust for United States federal income tax purposes.

(b) The following terms shall have the meanings specified in the Sections referred to opposite such term below:

Term	Section
“Act”	1.4(a)
“Bankruptcy Law”	5.1
“Component Currency”	3.11(h)
“Conversion Date”	3.11(d)
“Conversion Event”	3.11(h)
“Custodian”	5.1
“Defaulted Interest”	3.7(b)
“Election Date”	3.11(h)
“Event of Default”	5.1
“Exchange Rate Agent”	3.11(h)
“Exchange Rate Officer’s Certificate”	3.11(h)
“Market Exchange Rate”	3.11(h)
“Register”	3.5
“Registrar”	3.5
“Specified Amount”	3.11(h)
“Valuation Date”	3.11(c)

Section 1.2. COMPLIANCE CERTIFICATES AND OPINIONS. Upon any application or request by the Company to the Trustee to take any action under any provision of this Indenture, the Company shall furnish to the Trustee an Officer's Certificate stating that all conditions precedent, if any, provided for in this Indenture relating to the proposed action have been complied with and an Opinion of Counsel stating that in the opinion of such counsel all such conditions precedent, if any, have been complied with, except that in the case of any application or request as to which the furnishing of such documents is specifically required by any provision of this Indenture relating to such particular application or request, no additional certificate or opinion need be furnished.

Every certificate or opinion with respect to compliance with a condition or covenant provided for in this Indenture (other than pursuant to Sections 2.3) shall include:

- (1) a statement that the individual signing such certificate or opinion has read such condition or covenant and any definitions in this Indenture that are used in such certificate or opinion;
- (2) 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;
- (3) a statement that, in the opinion of each such individual, he has made such examination or investigation as is necessary to enable him to express an informed opinion as to whether or not such condition or covenant has been complied with; and
- (4) a statement as to whether, in the opinion of such individual, such condition or covenant has been complied with.

Section 1.3. 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 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, counsel, unless such officer knows that the certificate or opinion or representations with respect to the matters upon which his certificate or opinion is based are erroneous. Any such certificate or Opinion of Counsel 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 stating that the information with respect to such factual matters is in the possession of the Company, unless such counsel knows that the certificate or opinion or representations as to such matters are erroneous.

Any certificate or opinion of an officer of the Company or of counsel may be based, insofar as it relates to accounting matters, upon a certificate or opinion of or representations by an accountant or firm of accountants in the employ of the Company, unless such officer or counsel, as the case may be, knows that the certificate or opinions or representations as to such accounting matters are 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, they may, but need not, be consolidated and form one instrument.

Section 1.4. ACTS OF HOLDERS. (a) Any request, demand, authorization, direction, notice, consent, waiver or other action provided by this Indenture to be given or taken by Holders may be embodied in and evidenced by one or more instruments of substantially similar tenor signed by such Holders in person or by 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, where it is hereby expressly required, to the Company. Such instrument or instruments (and the action embodied therein and evidenced thereby) are herein sometimes referred to as the "Act" of the Holders 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 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 of such execution or by a certificate of a 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 a signer acting in a capacity other than his individual capacity, 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 Registered Securities shall be proved by the Register (as defined in Section 3.5 below).

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

(e) If the Company shall solicit from the Holders of any series any request, demand, authorization, direction, notice, consent, waiver or other Act, the Company may, at its option, fix in advance a record date for the determination of Holders of such series entitled to give such request, demand, authorization, direction, notice, consent, waiver or other Act, but the Company shall have no obligation to do so. If such a record date is fixed, such request, demand, authorization, direction, notice, consent, waiver or other Act may be given before or after such record date, but only the Holders of such series of record at the close of business on such record date shall be deemed to be Holders for the purposes of determining whether Holders of the requisite proportion of Outstanding Securities of such series have authorized or agreed or consented to such request, demand, authorization, direction, notice, consent, waiver or other Act, and for that purpose the Outstanding Securities of such series 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 taken on or prior to the applicable Expiration Date (as defined below) by Holders of the requisite amount of Outstanding Securities of such series on such record date. Nothing in this paragraph shall be construed to prevent the Company from setting a new record date for any action for which a record date has previously been set pursuant to this paragraph (whereupon the record date previously set shall automatically and with no action by any Person be cancelled and of no effect), and nothing in this paragraph shall be construed to render ineffective any action taken by Holders of the requisite amount of Outstanding Securities of any series on the date such action is taken. Promptly after any record date is set pursuant to this paragraph, the Company, at its own expense, shall cause notice of such record date, the proposed action by Holders and the applicable Expiration Date to be given to the Trustee in writing and to each Holder of Securities in the manner set forth in Section 1.6.

With respect to any record date set pursuant to this Section 1.4, the Company may designate any date as the “Expiration Date” and from time to time may change the Expiration Date to any earlier or later day; provided that no such change shall be effective unless notice of the proposed new Expiration Date is given to the Trustee, and to each Holder of Securities of the applicable series in the manner set forth in Section 1.6 on or prior to the existing Expiration Date. If an Expiration Date is not designated with respect to any record date pursuant to this Section, the Company shall be deemed to have initially designated the 180th day after such record date as the Expiration Date with respect thereto, subject to its right to change the Expiration Date as provided in this paragraph. Notwithstanding the foregoing, no Expiration Date shall be later than the 180th day after the applicable record date.

(f) Without limiting the foregoing, a Holder entitled hereunder to take any action hereunder with regard to any particular Security may do so with regard to all or any part of the principal amount of such Security or by one or more duly appointed agents, each of which may do so pursuant to such appointment with regard to all or any part of such principal amount.

(g) The Company and the Trustee may make reasonable rules for action by or at a meeting of Holders.

Section 1.5. NOTICES, ETC., TO TRUSTEE AND COMPANY. Any request, demand, authorization, direction, notice, consent, waiver or Act of Holders or other document provided or permitted by this Indenture to be made upon, given or furnished to, or filed with:

if to the Company:

Akoustis Technologies, Inc.
9805 Northcross Center Court, Suite A
Huntersville, NC 28078
Attention: Chief Executive Officer

if to the Trustee:

The Bank of New York Mellon Trust Company, N.A.
10161 Centurion Parkway N.
Jacksonville, Florida 32256
Email: Kandy.Williams@bnymellon.com
Fax: (904) 645-1921
Attention: Corporate Trust Administration

Notices to the Trustee are deemed given only upon actual receipt by the Trustee.

The Company or the Trustee by notice to the other may designate additional or different addresses (including facsimile numbers and electronic addresses) for subsequent notices or communications.

Any notice or communication shall be in writing and delivered in person or mailed by first-class mail (registered or certified, return receipt requested), facsimile transmission, electronic transmission or other similar means of unsecured electronic communication or overnight air courier guaranteeing next day delivery.

Section 1.6. NOTICE TO HOLDERS; WAIVER. Where this Indenture provides for notice to Holders of any event, if any of the Securities affected by such event are Registered Securities, such notice to the Holders thereof shall be sufficiently given (unless otherwise herein or in the terms of such Securities expressly provided) if in writing and mailed, first-class postage prepaid, to each such Holder affected by such event, at his address as it appears in the Register, within the time prescribed for the giving of such notice; provided that notices given to Holders of Securities in global form may be given electronically through the facilities of the Depository.

In any case where notice to Holders is given by mail, neither the failure to mail such notice, nor any defect in any notice so mailed, to any particular Holder shall affect the sufficiency of such notice with respect to other Holders of Registered Securities as provided herein. In any case where notice is given to Holders by publication, neither the failure to publish such notice, nor any defect in any notice so published, shall affect the sufficiency of such notice with respect to the sufficiency of any notice to Holders of Registered Securities given as provided herein. Any notice mailed to a Holder in the manner herein prescribed shall be conclusively deemed to have been received by such Holder, whether or not such Holder actually receives such notice.

If by reason of the suspension of regular mail service or by reason of any other cause it shall be impracticable to give such notice as provided above, then such notification as shall be made with the approval of the Trustee (such approval not to be unreasonably withheld) shall constitute a sufficient notification for every purpose hereunder. If it is impossible or, in the opinion of the Trustee, impracticable to give any notice by publication in the manner herein required, then such publication in lieu thereof as shall be made with the approval of the Trustee shall constitute a sufficient publication of such notice.

Any request, demand, authorization, direction, notice, consent or waiver required or permitted under this Indenture shall be in the English language, except that any published notice may be in an official language of the country of publication.

Where this Indenture 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 equivalent of such notice. Waivers of notice by Holders 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.

Section 1.7. HEADINGS AND TABLE OF CONTENTS. The Article and Section headings herein and the Table of Contents are for convenience only and shall not affect the construction hereof.

Section 1.8. SUCCESSOR AND ASSIGNS. All covenants and agreements in this Indenture by the Company shall bind its successor and assigns, whether so expressed or not.

Any act or proceeding that is required or permitted by any provision of this Indenture and that is authorized or required to be done or performed by any board, committee or officer of the Company shall and may be done and performed with like force and effect by the like board, committee or officer of any corporation that shall at the time be the successor or assign of the Company.

Section 1.9. SEPARABILITY. In case any provision of this Indenture or any 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 1.10. BENEFITS OF INDENTURE. Nothing in this Indenture or in any Securities, expressed or implied, shall give to any Person, other than the parties hereto and their successors hereunder, any Agent and the Holders, any benefit or any legal or equitable right, remedy or claim under this Indenture.

Section 1.11. GOVERNING LAW. UNLESS OTHERWISE PROVIDED WITH RESPECT TO ANY SECURITIES OF ANY SERIES PURSUANT TO SECTION 3.1, THIS INDENTURE AND THE SECURITIES APPERTAINING THERETO SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK, INCLUDING ALL MATTERS OF CONSTRUCTION, VALIDITY AND PERFORMANCE. This Indenture is subject to the Trust Indenture Act and if any provision hereof limits, qualifies or conflicts with a provision included in this Indenture which is required by the Trust Indenture Act, the latter provision shall control. If any provision of this Indenture modifies or excludes any provision of the Trust Indenture Act that may be so modified or excluded, the latter provision shall be deemed to apply to this Indenture as so modified, or to be excluded, as the case may be, whether or not such provision of this Indenture refers expressly to such provision of the Trust Indenture Act.

Section 1.12. WAIVER OF JURY TRIAL. EACH OF THE COMPANY, THE TRUSTEE AND EACH HOLDER (BY ITS ACCEPTANCE OF ANY SECURITY) HEREBY IRREVOCABLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY AND ALL RIGHT TO TRIAL BY JURY IN ANY LEGAL PROCEEDING ARISING OUT OF OR RELATING TO THIS INDENTURE, THE SECURITIES OR THE TRANSACTION CONTEMPLATED HEREBY. EACH OF THE COMPANY, THE TRUSTEE AND EACH HOLDER (BY ITS ACCEPTANCE OF ANY SECURITY) HEREBY IRREVOCABLY SUBMITS TO THE JURISDICTION OF ANY STATE OR U.S. FEDERAL COURT IN THE CITY OF NEW YORK AND COUNTY OF NEW YORK IN RESPECT OF ANY SUIT, ACTION OR PROCEEDING ARISING OUT OF OR RELATING TO THE INDENTURE AND THE SECURITIES, AND IRREVOCABLY ACCEPTS FOR ITSELF AND IN RESPECT OF ITS PROPERTY, GENERALLY AND UNCONDITIONALLY, JURISDICTION OF THE AFORESAID COURTS.

Section 1.13. LEGAL HOLIDAYS. Unless otherwise provided with respect to any Security or Securities pursuant to Section 3.1, in any case where any Interest Payment Date, Redemption Date, sinking fund payment date, Stated Maturity or Maturity or other payment date of any Security shall not be a Business Day at any Place of Payment, then, notwithstanding any other provision of this Indenture or any Security, payment of principal, premium, if any or interest or other payments 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 such date; provided that no interest shall accrue on the amount so payable for the period from and after such Interest Payment Date, Redemption Date, sinking fund payment date, Stated Maturity or Maturity or other payment date, as the case may be.

Section 1.14. NO RECOURSE AGAINST OTHERS. No past, present or future director, officer, employee, agent, member, manager, trustee or stockholder, as such, of the Company or any successor Person shall have any liability for any obligations of the Company or any successor Person, either directly or through the Company or any successor Person, under the Securities or this Indenture or for any claim based on, in respect of or by reason of such obligations or their creation, whether by virtue of any rule of law, statute or constitutional provision or by the enforcement of any assessment or by any legal or equitable proceeding or otherwise. By accepting a Security, each Holder agrees to the provisions of this Section 1.14 and waives and releases all such liability. Such waiver and release shall be part of the consideration for the issue of the Securities.

ARTICLE II

SECURITY FORMS

Section 2.1. FORMS GENERALLY. The Securities of each series shall be in substantially such form as shall be established in one or more indentures supplemental hereto, in each case with 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 the Company may deem appropriate or as may be required to comply with any applicable law, rule or regulation or with the rules or usage of any securities exchange or Depository therefor or as may, consistently herewith, be determined by the officers executing such Securities as evidenced by their execution of the Securities. If temporary Securities of any series are issued as permitted by Section 3.4, the form thereof also shall be established as provided in the preceding sentence.

The definitive Securities shall be typeset, printed, lithographed or engraved on steel engraved borders or may be produced in any other manner or medium, all as determined by the officers executing such Securities as evidenced by their execution of such Securities.

Section 2.2. FORM OF TRUSTEE'S CERTIFICATE OF AUTHENTICATION. Subject to Section 6.13 (as applicable to any Authenticating Agent), the Trustee's certificate of authentication shall be in substantially the following form:

This is one of the [Securities] [of the series designated herein and] referred to in the within-mentioned Indenture.

The Bank of New York Mellon Trust Company, N.A., as Trustee

Dated:

By:

AUTHORIZED SIGNATORY

Section 2.3. SECURITIES IN GLOBAL FORM. If Securities of or within a series are issuable in whole or in part in global form, any such Security may provide that it shall represent the aggregate or specified 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 or increased to reflect exchanges. Any endorsement of a Security in global form to reflect the amount, or any increase or decrease in the amount, or changes in the rights of Holders, 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 Company Order to be delivered to the Trustee pursuant to Section 3.3 or 3.4. Subject to the provisions of Section 3.3 and, if applicable, Section 3.4, the Trustee shall deliver and redeliver any security in permanent global form in the manner and upon instructions given by the Person or Persons specified therein or in the applicable Company Order. Any instructions by the Company with respect to endorsement or delivery or redelivery of a Security in global form shall be in writing but need not comply with Section 1.2 hereof and need not be accompanied by an Opinion of Counsel.

The provisions of the last paragraph of Section 3.3 shall apply to any Security in global form if such Security was never issued and sold by the Company and the Company delivers to the Trustee such Security in global form together with written instructions (which need not comply with Section 1.2 and need not be accompanied by an Opinion of Counsel) with regard to the reduction in the principal amount of Securities represented thereby, together with the written statement contemplated by the last paragraph of Section 3.3.

Notwithstanding the provisions of Section 2.1 and 3.7, unless otherwise specified as contemplated by Section 3.1, payment of principal of, premium, if any, and interest on any Security in permanent global form shall be made to the Person or Persons specified therein.

Section 2.4. FORM OF LEGEND FOR SECURITIES IN GLOBAL FORM. Unless otherwise provided with respect to any Securities of any series pursuant to Section 3.1 or required by the Depository, any Security of such series in global form authenticated and delivered hereunder shall bear a legend in substantially the following form:

This Security is in global form within the meaning of the Indenture hereinafter referred to and is registered in the name of a Depository or a nominee of a Depository. 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. Every Security authenticated and delivered upon registration of, or in exchange for, or in lieu of, this Security will be in global form, subject to the foregoing.

ARTICLE III

THE SECURITIES

Section 3.1. AMOUNT UNLIMITED; ISSUABLE IN SERIES. (a) The aggregate principal amount of Securities which may be authenticated, delivered and outstanding under this Indenture is unlimited. The Securities may be issued from time to time in one or more series.

(b) The following matters shall be established, without the approval of any Holders, with respect to each series of Securities issued hereunder in one or more indentures supplemental hereto:

(1) the title of the Securities of the series (which title shall distinguish the Securities of the series from all other series of Securities);

(2) any limit upon the aggregate principal amount of the Securities of the series which may be authenticated, delivered and outstanding under this Indenture (which limit shall not pertain to Securities authenticated and delivered upon registration of transfer of, or in exchange for, or in lieu of, other Securities of the series pursuant to Section 3.4, 3.5, 3.6, 8.6, or 10.7 and except for any Securities which, pursuant to Section 3.3, are deemed never to have been authenticated and delivered hereunder);

(3) the date or dates on which the principal of and premium, if any, on the Securities of the series is payable or the method of determination and/or extension of such date or dates; and the amount or amounts of such principal and premium, if any, payments or the method of determination thereof;

(4) the rate or rates (which may be fixed or variable) at which the Securities of the series shall bear interest, if any, or the method of calculating and/or resetting such rate or rates of interest, the date or dates from which such interest shall accrue or the method by which such date or dates shall be determined, the Interest Payment Dates on which any such interest shall be payable or the method by which such dates will be determined, the terms of any deferral of interest and the additional interest, if any, thereon and, with respect to Registered Securities, the Regular Record Date, if any, for the interest payable on any Registered Security on any Interest Payment Date, the right, if any, of the Company to extend the Interest Payment Dates and the Regular Record Date, if any, and the duration of the extensions and the basis upon which interest shall be calculated if other than upon a 360-day year of twelve 30-day months;

(5) the place or places where the principal of, premium, if any, and interest, if any, on Securities of the series shall be payable;

(6) the period or periods within which, the price or prices at which, the currency or currencies (including currency units) in which, and the other terms and conditions upon which, Securities of the series may be redeemed, in whole or in part, at the option of the Company or otherwise, and, if other than as provided in Section 10.3, the manner in which the particular Securities of such series (if less than all Securities of such series are to be redeemed) are to be selected for redemption;

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

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

(9) if other than Dollars, the currency or currencies (including currency unit or units) in which the principal of, premium, if any, and interest, if any, or other payments, if any, on the Securities of the series shall be payable, or in which the Securities of the series shall be denominated, and the particular provisions applicable thereto in accordance with, in addition to, or in lieu of the provisions of Section 3.11;

(10) the terms, if any, upon which Securities of the series may be convertible into or exchanged for other Securities, Common Stock, Preferred Stock, other debt securities, warrants to purchase any of the foregoing, or other securities of any kind of the Company or any other obligor and the terms and conditions upon which the conversion or exchange shall be effected, including the initial conversion or exchange price or rate, the conversion or exchange period, and any other additional provisions;

(11) if the payments of principal of, premium, if any, or interest, if any, or other payments, if any, on the Securities of the series are to be made, at the election of the Company or a Holder, in a currency or currencies (including currency unit or units) other than that in which such Securities are denominated or designated to be payable, the currency or currencies (including currency unit or units) in which such payments are to be made, the terms and conditions of such payments and the manner in which the exchange rate with respect to such payments shall be determined, and the particular provisions applicable thereto in accordance with, in addition to, or in lieu of the provisions of Section 3.11;

(12) if the amount of payments of principal of, premium, if any, and interest, if any, or other payments, if any, on the Securities of the series shall be determined with reference to an index, formula or other method (which index, formula or method may be based, without limitation, on the price of one or more commodities, derivatives or securities; one or more securities, derivatives or commodities exchange indices or other indices; a currency or currencies (including currency unit or units) other than that in which the Securities of the series are denominated or designated to be payable; or any other variable or the relationship between any variables or combination of variables), the index, formula or other method by which such amounts shall be determined;

(13) if other than the principal amount thereof, the portion of the principal amount of such Securities of the series or other amount which shall be payable upon declaration of acceleration thereof pursuant to Section 5.2 or provable in bankruptcy or the method by which such portion or amount shall be determined;

(14) if other than as provided in Section 3.7, the Person to whom any interest on any Registered Security of the series shall be payable;

(15) if the principal amount payable at the Maturity of any Securities of the series will not be determinable as of one or more dates prior to Maturity, the amount which shall be deemed to be the principal amount of such Securities as of any such date hereunder or thereunder, or, if other than as provided in the definition of the term "Outstanding", which shall be deemed to be Outstanding as of any date prior to the Stated Maturity (or, in any such case, the manner in which such amount deemed to be the principal amount shall be determined) and, if necessary, the manner of determining the equivalent thereof in U.S. currency;

(16) provisions, if any, granting special rights to the Holders of Securities of the series upon the occurrence of such events as may be specified;

(17) the applicability of or any deletions from, modifications of or additions to the Events of Default set forth in Section 5.1 or covenants of the Company set forth in Article IX pertaining to the Securities of the series;

(18) under what circumstances, if any, the Company will pay additional amounts on the Securities of that series held by a Person who is not a U.S. Person in respect of taxes or similar charges withheld or deducted and, if so, whether the Company will have the option to redeem such Securities rather than pay such additional amounts (and the terms of any such option);

(19) the date as of which any temporary global Security representing Outstanding Securities of the series shall be dated if other than the date of original issuance of the first Security of the series to be issued;

(20) the forms of the Securities of the series;

(21) any changes or additions to the provisions provided in Article IV of this Indenture pertaining to defeasance, including without limitation, the exclusion of Section 4.4 or 4.5, or both, with respect to the Securities of or within the series; or the applicability, if any, to the Securities of or within the series of such means of defeasance or covenant defeasance other than those provided in Sections 4.4 and 4.5 as may be specified for the Securities of such series, and whether, for the purpose of any defeasance or covenant defeasance pursuant to Section 4.4 or 4.5 or otherwise, the term "Government Obligations" shall include obligations referred to in the definition of such term which are not obligations of the United States or an agency or instrumentality of the United States;

(22) if other than the Trustee, the identity of the Registrar and any Paying Agent;

(23) any terms which may be related to warrants, options or other rights to purchase and sell securities issued by the Company in connection with, or for the purchase of, Securities of such series, including whether and under what circumstances the Securities of any series may be used toward the exercise price of any such warrants, options or other rights;

(24) the designation of the initial Exchange Rate Agent, if any;

(25) whether any of the Securities of the series shall be issued in whole or in part in global form, and if so (i) the Depository for such global Securities, (ii) the form of any legend in addition to or in lieu of that in Section 2.4 which shall be borne by such global Securities, (iii) whether beneficial owners of interests in any Securities of the series in global form may exchange such interests for certificated Securities of such series and of like tenor of any authorized form and denomination, and (iv) if other than as provided in Section 3.5, the circumstances under which any such exchange may occur;

(26) the priority, ranking or subordination, if any, of the Securities of the series;

(27) if the Securities of the series will be governed by, and the extent to which such Securities will be governed by, any law other than the laws of the state of New York;

(28) the terms, if any, of any guarantee of the payment of principal, premium and interest with respect to Securities of the series and any corresponding changes to the provisions of this Indenture as then in effect;

(29) the terms, if any, of the transfer, mortgage, pledge or assignment as security for the Securities of the series of any properties, assets, moneys, proceeds, securities or other collateral, including whether certain provisions in the Trust Indenture Act are applicable and any corresponding changes to provisions of this Indenture as then in effect; and

(30) any other terms of the series, including any terms which may be required by or advisable under United States laws or regulations or advisable (as determined by the Company) in connection with the marketing of Securities of the series.

(c) The terms applicable to the Securities of any one series need not be identical but may vary as may be provided in an indenture supplemental hereto. All Securities of any one series need not be issued at the same time and, unless otherwise provided, a series may be reopened, without the consent of the Holders, for issuances of additional Securities of such series.

(d) Except as may be otherwise expressly provided in the applicable supplemental indenture, as contemplated by this Section 3.1, the Securities of any series shall rank PARI PASSU with the Securities of each other Series.

Section 3.2. DENOMINATIONS. Unless otherwise provided as contemplated by Section 3.1, any Securities of a series shall be issuable in denominations of \$1,000 and any integral multiple thereof.

Section 3.3. EXECUTION, AUTHENTICATION, DELIVERY AND DATING. Securities shall be executed on behalf of the Company by the Chief Executive Officer, the Chief Financial Officer, the President, or any Vice President, the Treasurer or the Corporate Secretary of the Company. The seal of the Company, if any, may be in the form of a facsimile thereof and may be impressed, affixed, imprinted or otherwise reproduced on the Securities. The signatures of any of these officers on the Securities may be manual or facsimile.

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, the Company may deliver Securities of any series executed by the Company to the Trustee for authentication, together with a Company Order for the authentication and delivery of such Securities, and the Trustee in accordance with the Company Order shall authenticate and deliver such Securities.

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 section 315(a) through (d) of the Trust Indenture Act) shall be fully protected in relying upon, an Opinion of Counsel substantially to the effect that,

(1) the form of such Securities have been established in conformity with the provisions of this Indenture;

(2) the terms of such Securities have been, or in the case of Securities of a series offered in a Periodic Offering will be, established in conformity with the provisions of this Indenture, subject in the case of Securities offered in a Periodic Offering, to any conditions specified in such Opinion of Counsel; and

(3) such Securities, when authenticated and delivered by the Trustee, issued by the Company in accordance with the provisions of this Indenture, and delivered to and duly paid for by the purchasers thereof, and subject to any conditions specified in such Opinion of Counsel, will constitute legal, valid and binding obligations of the Company, enforceable in accordance with their terms, subject to bankruptcy, insolvency, fraudulent transfer, reorganization, moratorium and other similar laws of general applicability relating to or affecting the enforcement of creditors' rights and to general equity principles and except further as enforcement thereof may be limited by or subject to certain exceptions and qualifications specified in such Opinion of Counsel, including in the case of any Securities denominated in a Foreign Currency, (A) requirements that a claim with respect to any Securities denominated other than in Dollars (or a foreign currency or foreign currency unit judgment in respect of such claim) be converted into Dollars at a rate of exchange prevailing on a date determined pursuant to applicable law or (B) governmental authority to limit, delay or prohibit the making of payments in foreign currency or currency units or payments outside the United States.

Such Opinion of Counsel need express no opinion as to whether a court in the United States would render a money judgment in a currency other than that of the United States. Such counsel may rely on opinions of other counsel (copies of which shall be delivered to the Trustee), and, to the extent such opinion involves factual matters, such counsel may rely upon certificates of officers of the Company and certificates of public officials.

The Trustee shall have the right to decline to execute any supplemental indenture establishing the terms of or the form of such Securities if, in the written opinion of counsel to the Trustee (which counsel may be an employee of the Trustee), such action may not lawfully be taken, or if the Trustee, in good faith by a Responsible Officer of the Trustee, shall determine, in its sole discretion, that such action would adversely affect it.

Notwithstanding the provisions of Section 3.1 and of the two preceding paragraphs, if all of the Securities of any series are not to be issued at one time, it shall not be necessary to deliver the Officer's Certificate otherwise required pursuant to Section 3.1 or the Company Order and Opinion of Counsel otherwise required pursuant to the two preceding paragraphs in connection with the authentication of each Security of such series if such documents, with appropriate modifications to cover such future issuances, are delivered at or prior to the authentication upon original issuance of the first Security of such series to be issued.

With respect to Securities of a series offered in a Periodic Offering, the Trustee may rely, as to the authorization by the Company of any of such Securities, the form and terms thereof and the legality, validity, binding effect and enforceability thereof, upon the Opinion of Counsel and the other documents delivered pursuant to Sections 2.1 and 3.1 and this Section, as applicable, in connection with the first authentication of Securities of such series.

If the Company shall establish pursuant to Section 3.1 that the Securities of a series are to be issued in whole or in part in global form, then, unless otherwise provided with respect to such Securities pursuant to Section 3.1, the Company shall execute and the Trustee shall, in accordance with this Section and the Company 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 amount equal to the aggregate principal amount of the Outstanding Securities of such series to be represented by such Security or Securities in global form, (ii) shall be registered, if a Registered Security, in the name of the Depository for such Security or Securities in global form or the nominee of such Depository, (iii) shall be delivered by the Trustee to such Depository or pursuant to such Depository's instruction and (iv) shall bear the legend set forth in Section 2.4.

Unless otherwise established pursuant to Section 3.1, each Depository designated pursuant to Section 3.1 for a Registered 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, as amended, and any other applicable statute or regulation. Neither the Company nor the Trustee shall have any responsibility to determine if the Depository is so registered.

Each Depository shall enter into an agreement with the Company and the Trustee, as agent, governing the respective duties and rights of such Depository, the Company and the Trustee, as agent, with regard to Securities of a series issued in global form.

Each Registered Security shall be dated the date of its authentication as contemplated by Section 3.1.

No Security shall be entitled to any benefits under this Indenture or be valid or obligatory for any purpose until authenticated by the manual signature of one of the authorized signatories of the Trustee or an Authenticating Agent. Such signature upon any Security shall be conclusive evidence, and the only evidence, that such Security has been duly authenticated and delivered under this Indenture and is entitled to the benefits of this Indenture.

Notwithstanding the foregoing, if any Security shall have been authenticated and delivered hereunder but never issued and sold by the Company, and the Company shall deliver such Security to the Trustee for cancellation as provided in Section 3.9 together with a written statement (which need not comply with Section 1.2 and need not be accompanied by an Opinion of Counsel) stating that such Security has never been issued and sold by the Company, for all purposes of this Indenture such Security shall be deemed never to have been authenticated and delivered hereunder and shall not be entitled to the benefits of this Indenture.

Section 3.4. TEMPORARY SECURITIES. Pending the preparation of definitive Securities of any series, the Company may execute and, upon Company Order, the Trustee shall authenticate and deliver temporary Securities of such series which are printed, lithographed, typewritten, mimeographed or otherwise produced, in any authorized denomination, substantially of the tenor and form, of the definitive Securities in lieu of which they are issued and with such appropriate insertions, omissions, substitutions and other variations as the officers executing such Securities may determine, as conclusively evidenced by their execution of such Securities. In the case of Securities of any series, all or a portion of such temporary Securities may be in global form.

Except in the case of temporary Securities in global form, each of 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 preparation of definitive Securities of such series, the temporary Securities of such series shall be exchangeable for definitive Securities of such series upon surrender of the temporary Securities of such series at the office or agency of the Company pursuant to Section 9.2 in a Place of Payment for such series, without charge to the Holder. 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 the same series of authorized denominations and of like tenor. Until so exchanged, the temporary Securities of any series shall in all respects be entitled to the same benefits under this Indenture as definitive Securities of such series except as otherwise specified as contemplated by Section 3.1.

Section 3.5. REGISTRATION, TRANSFER AND EXCHANGE. The Company shall cause to be kept at the Corporate Trust Office of the Trustee or in any office or agency to be maintained by the Company in accordance with Section 9.2 in a Place of Payment or in such other place or medium as may be specified pursuant to Section 3.1 a register for each series of Securities (the registers maintained in such office or in any such office or agency of the Company in a Place of Payment being herein sometimes referred to collectively as the "Register") in which, subject to such reasonable regulations as it may prescribe, the Company shall provide for the registration of Registered Securities and the registration of transfers of Registered Securities. The Register shall be in written form or any other form capable of being converted into written form within a reasonable time. Unless otherwise provided as contemplated by Section 3.1, the Trustee is hereby appointed "Registrar" for the purpose of registering Registered Securities and transfers of Registered Securities, and for the purpose of maintaining the Register in respect thereof, as herein provided.

Upon surrender for registration of transfer of any Registered Security of any series at the office or agency maintained pursuant to Section 9.2 in a Place of Payment for that series, the Company shall execute, and the Trustee shall authenticate and deliver, in the name of the designated transferee or transferees, one or more new Registered Securities of the same series, of any authorized denominations and of a like aggregate principal amount.

Unless otherwise provided as contemplated by Section 3.1, at the option of the Holder, Registered Securities of any series (except a Registered Security in global form) may be exchanged for other Registered Securities of the same series, of any authorized denominations and of a like aggregate principal amount containing identical terms and provisions, upon surrender of the Registered Securities to be exchanged at such office or agency. Whenever any Registered Securities are so surrendered for exchange, the Company shall execute, and the Trustee shall authenticate and deliver, the Registered Securities which the Holder making the exchange is entitled to receive.

Unless otherwise specified pursuant to Section 3.1 with respect to a series of Securities or as otherwise provided below in this Section 3.5, owners of beneficial interests in Securities of such series represented by a Security issued in global form will not be entitled to have Securities of such series registered in their names, will not receive or be entitled to receive physical delivery of Securities of such series in certificated form and will not be considered the Holders or owners thereof for any purposes hereunder. Notwithstanding any other provision of this Section, unless and until it is exchanged in whole or in part for Securities in certificated form in the circumstances described below, a Security in global form representing all or a portion of the Securities of a series may not be transferred or exchanged except as a whole by the Depository for such series to a nominee of such Depository or by a nominee of such Depository to such Depository or another nominee of such Depository or by such Depository or any such nominee to a successor Depository for such series or a nominee of such successor Depository.

If at any time the Depository for the Securities of a series notifies the Company that it is unwilling or unable to continue as Depository for the Securities of such series or if at any time the Depository for the Securities of such series notifies the Company that it shall no longer be eligible under Section 3.3, the Company shall appoint a successor Depository with respect to the Securities of such series. Unless otherwise provided as contemplated by Section 3.1, if a successor Depository 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 3.1(b) (25) shall no longer be effective with respect to the Securities of such series and the Company shall execute, and the Trustee, upon receipt of a Company Order for the authentication and delivery of certificated Securities of such series of like tenor, shall authenticate and deliver, Securities of such series of like tenor in certificated form, in authorized denominations and in an aggregate principal amount equal to the principal amount of the Security or Securities of such series of like tenor in global form in exchange for such Security or Securities in global form.

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

If specified by the Company pursuant to Section 3.1 with respect to a series of Securities, the Depository for such series may surrender a Security in global form of such series in exchange in whole or in part for Securities of such series in certificated form on such terms as are acceptable to the Company and such Depository. Thereupon, the Company shall execute, and the Trustee shall authenticate and deliver, without service charge,

(i) to each Person specified by such Depository a new certificated Security or Securities of the same series of like tenor, of any authorized denomination as requested by such Person in aggregate principal amount equal to and in exchange for such Person's beneficial interest in the Security in global form; and

(ii) to such Depository a new Security in global form of like tenor 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 certificated Securities delivered to Holders thereof.

(iii) Upon the exchange of a Security in global form for Securities in certificated form, such Security in global form shall be cancelled by the Trustee. Securities in certificated form issued in exchange for a Security in global form pursuant to this Section shall be registered in such names and in such authorized denominations as the Depository for such Security in global form, pursuant to instructions from its direct or indirect participants or otherwise, shall instruct the Trustee. The Trustee shall deliver such Securities to the Persons in whose names such Securities are so registered.

Whenever any Securities are 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 upon any 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 registration of transfer or exchange.

Every Registered Security presented or surrendered for registration of transfer or for exchange shall (if so required by the Company, the Registrar or the Trustee) be duly endorsed, or be accompanied by a written instrument of transfer in form satisfactory to the Company, the Registrar and the Trustee duly executed by the Holder thereof or his attorney duly authorized in writing.

Unless otherwise provided as contemplated by Section 3.1, no service charge shall be made for any registration of transfer or for any exchange of Securities, but the Company may require payment of a sum sufficient to cover any tax or other governmental charge that may be imposed in connection with any registration or transfer or exchange of Securities, other than exchanges pursuant to Section 3.4 or 10.7 not involving any transfer.

Unless otherwise provided as contemplated by Section 3.1, none of the Company, the Registrar or the Trustee shall be required (i) to issue, register the transfer of, or exchange any Securities for a period beginning at the opening of 15 Business Days before any selection for redemption of Securities of like tenor and of the series of which such Security is a part and ending at the close of business on the earliest date on which the relevant notice of redemption is deemed to have been given to all Holders of Securities of like tenor and of such series to be redeemed; or (ii) to register the transfer of or exchange any Registered Security so selected for redemption, in whole or in part, except the unredeemed portion of any Security being redeemed in part.

Section 3.6. REPLACEMENT SECURITIES. If a mutilated Security is surrendered to the Trustee, together with, in proper cases, such security or indemnity as may be required by the Company or the Trustee to save each of them harmless, the Company shall execute and the Trustee shall authenticate and deliver a replacement Registered Security, if such surrendered Security was a Registered Security of the same series and date of maturity.

If there shall be delivered to the Company and the Trustee (i) evidence to their satisfaction of the destruction, loss or theft of any Security and (ii) such security or indemnity as may be required by them to save each of them and any agent of either of them harmless, then, in the absence of notice to the Company or the Trustee that such Security has been acquired by a bona fide purchaser, the Company shall execute and the Trustee shall authenticate and deliver in lieu of any such destroyed, lost or stolen Security a replacement Registered Security, if such Holder's claim appertains to a Registered Security, of the same series and principal amount, containing identical terms and provisions and bearing a number not contemporaneously outstanding.

In case any such mutilated, destroyed, lost or stolen Security has become or is about to become due and payable, the Company in its discretion may, instead of issuing a new Security, pay such Security.

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, its agents and counsel) connected therewith.

Every new Security of any series issued pursuant to this Section in lieu of any destroyed, lost or stolen Security shall constitute an original additional contractual obligation of the Company, whether or not the destroyed, lost or stolen Security shall be at any time enforceable by anyone, and shall be entitled to all the benefits of this Indenture equally and proportionately with any and all other Securities of that series duly issued hereunder.

The provisions of this Section are exclusive and shall preclude (to the extent lawful) all other rights and remedies with respect to the replacement or payment of mutilated, destroyed, lost or stolen Securities.

Section 3.7. PAYMENT OF INTEREST; INTEREST RIGHTS PRESERVED.

(a) Unless otherwise provided as contemplated by Section 3.1, interest, if any, on any Registered Security which is payable, and is punctually paid or duly provided for, on any Interest Payment Date shall 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 Regular Record Date for such interest at the office or agency maintained for such purpose pursuant to 9.2; provided, however, that at the option of the Company, interest on any series of Registered Securities that bear interest may be paid (i) by check mailed to the address of the Person entitled thereto as it shall appear on the Register of Holders of Securities of such series or (ii) by wire transfer to an account maintained by the Person entitled thereto as specified in the Register of Holders of Securities of such series.

(b) Unless otherwise provided as contemplated by Section 3.1, any interest on any Registered Security of any series 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 Holder on the relevant Regular Record Date by virtue of having been such Holder, and such Defaulted Interest may be paid by the Company, at its election in each case, as provided in clause (1) or (2) below:

(1) The Company may elect to make payment of any Defaulted Interest to the Persons in whose names such Registered Securities of such series (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 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 (1) provided. Thereupon the Trustee shall fix a Special Record Date for the payment of such Defaulted Interest which shall be not more than 15 days and not 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 each Holder of such Registered Securities of such series at his address as it appears in the 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 so mailed, such Defaulted Interest shall be paid to the Persons in whose names such Registered Securities of such series (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 (2).

(2) The Company may make payment of any Defaulted Interest to the Persons in whose names such Registered Securities of such series (or their respective Predecessor Securities) are registered at the close of business on a specified date in any other lawful manner not inconsistent with the requirements of any securities exchange on which such Registered 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 (2), such manner of payment shall be deemed practicable by the Trustee.

(c) Subject to the foregoing provisions of this Section and Section 3.5, 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 3.8. PERSONS DEEMED OWNERS. Prior to due presentment of any Registered 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 such Registered Security is registered as the owner of such Registered Security for the purpose of receiving payment of principal of, premium, if any, and (subject to Section 3.7) interest and any other payments on such Registered Security and for all other purposes whatsoever, whether or not such Registered Security shall 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 or any agent of the Company or the Trustee shall 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. Notwithstanding the foregoing, with respect to any Security in global form, nothing herein shall prevent the Company or the Trustee, or any agent of the Company or the Trustee, from giving effect to any written certification, proxy or other authorization furnished by any Depository (or its nominee), as a Holder, with respect to such Security in global form or impair, as between such Depository and owners of beneficial interests in such Security in global form, the operation of customary practices governing the exercise of the rights of such Depository (or its nominee) as Holder of such Security in global form.

Section 3.9. CANCELLATION. The Company at any time may deliver Securities to the Trustee for cancellation. The Registrar and any Paying Agent shall forward to the Trustee any Securities surrendered to them for replacement, for registration of transfer, or for exchange or payment. The Trustee shall cancel all Securities surrendered for replacement, for registration of transfer, or for exchange, payment, redemption or cancellation and may destroy cancelled Securities and, if so destroyed, shall issue a certificate of destruction to the Company. The Company may not issue new Securities to replace Securities that it has paid or delivered to the Trustee for cancellation.

Section 3.10. COMPUTATION OF INTEREST. Except as otherwise specified as contemplated by Section 3.1, interest on the Securities of each series shall be computed on the basis of a 360-day year of twelve 30-day months.

Section 3.11. CURRENCY AND MANNER OF PAYMENT IN RESPECT OF SECURITIES. (a) Unless otherwise specified with respect to any Securities pursuant to Section 3.1, with respect to Registered Securities of any series payment of the principal of, premium, if any, interest, if any, and other amounts, if any, on any Registered Security of such series will be made in the currency or currencies or currency unit or units in which such Registered Security is payable. The provisions of this Section 3.11, including without limitation any defined terms specified herein, may be modified or superseded in whole or in part pursuant to Section 3.1 with respect to any Securities.

(b) If expressly specified pursuant to Section 3.1, with respect to Registered Securities of any series, Holders shall have the option, subject to paragraphs (d) and (e) below, to receive payments of principal of, premium, if any, or interest, if any, on such Registered Securities in any of the currencies or currency units which may be designated for such election by delivering to the Trustee (or the applicable Paying Agent) a written election with signature guarantees and in the applicable form established pursuant to Section 3.1, not later than the close of business on the Election Date immediately preceding the applicable payment date. If a Holder so elects to receive such payments in any such currency or currency unit, such election will remain in effect for such Holder or any transferee of such Holder until changed by such Holder or such transferee by written notice to the Trustee (or any applicable Paying Agent) for such series of Registered Securities (but any such change must be made not later than the close of business on the Election Date immediately preceding the next payment date to be effective for the payment to be made on such payment date, and no such change of election may be made with respect to payments to be made on any Registered Security of such series with respect to which an Event of Default has occurred or with respect to which the Company has deposited funds pursuant to Article IV or with respect to which a notice of redemption has been given by or on behalf of the Company). Any Holder of any such Registered Security who shall not have delivered any such election to the Trustee (or any applicable Paying Agent) not later than the close of business on the applicable Election Date will be paid the amount due on the applicable payment date in the relevant currency or currency unit as provided in Section 3.11(a). The Trustee (or the applicable Paying Agent) shall notify the Company and the Exchange Rate Agent as soon as practicable after the Election Date of the aggregate principal amount of Registered Securities for which Holders have made such written election.

(c) If the election referred to in paragraph (b) above has been provided for with respect to any Registered Securities of a series pursuant to Section 3.1, then, unless otherwise specified pursuant to Section 3.1 with respect to any such Registered Securities, not later than the fourth Business Day after the Election Date for each payment date for such Registered Securities, the Exchange Rate Agent will deliver to the Company a written notice specifying, in the currency or currencies or currency unit or units in which Registered Securities of such series are payable, the respective aggregate amounts of principal of, premium, if any, and interest, if any, on such Registered Securities to be paid on such payment date, and specifying the amounts in such currency or currencies or currency unit or units so payable in respect of such Registered Securities as to which the Holders of such Registered Securities denominated in any currency or currencies or currency unit or units shall have elected to be paid in another currency or currency unit as provided in paragraph (b) above. If the election referred to in paragraph (b) above has been provided for with respect to any Registered Securities of a series pursuant to Section 3.1, and if at least one Holder has made such election, then, unless otherwise specified pursuant to Section 3.1, on the second Business Day preceding such payment date the Company will deliver to the Trustee (or the applicable Paying Agent) an Exchange Rate Officer's Certificate in respect of the Dollar, Foreign Currency or Currencies or other currency unit payments to be made on such payment date. Unless otherwise specified pursuant to Section 3.1, the Dollar, Foreign Currency or Currencies or other currency unit amount receivable by Holders of Registered Securities who have elected payment in a currency or currency unit as provided in paragraph (b) above shall be determined by the Company on the basis of the applicable Market Exchange Rate in effect on the second Business Day (the "Valuation Date") immediately preceding each payment date, and such determination shall be conclusive and binding for all purposes, absent manifest error.

(d) If a Conversion Event occurs with respect to a Foreign Currency or any other currency unit in which Securities of any series are denominated or payable otherwise than pursuant to an election provided for pursuant to paragraph (b) above, then, unless otherwise specified pursuant to Section 3.1, with respect to each date for the payment of principal of, premium, if any, and interest, if any, on the applicable Securities denominated or payable in such Foreign Currency or such other currency unit occurring after the last date on which such Foreign Currency or such other currency unit was used (the "Conversion Date"), the Dollar shall be the currency of payment for use on each such payment date (but such Foreign Currency or such other currency unit that was previously the currency of payment shall, at the Company's election, resume being the currency of payment on the first such payment date preceded by 15 Business Days during which the circumstances which gave rise to the Dollar becoming such currency of payment no longer prevail). Unless otherwise specified pursuant to Section 3.1, the Dollar amount to be paid by the Company to the Trustee or any applicable Paying Agent and by the Trustee or any applicable Paying Agent to the Holders of such Securities with respect to such payment date shall be, in the case of a Foreign Currency other than a currency unit, the Dollar Equivalent of the Foreign Currency or, in the case of a Foreign Currency that is a currency unit, the Dollar Equivalent of the Currency Unit, in each case as determined by the Exchange Rate Agent in the manner provided in paragraph (f) or (g) below.

(e) Unless otherwise specified pursuant to Section 3.1, if the Holder of a Registered Security of a series denominated in any currency or currency unit shall have elected to be paid in another currency or currency unit or in other currencies as provided in paragraph (b) above, and (i) a Conversion Event occurs with respect to any such elected currency or currency unit, such Holder shall receive payment in the currency or currency unit in which payment would have been made in the absence of such election and (ii) if a Conversion Event occurs with respect to the currency or currency unit in which payment would have been made in the absence of such election, such Holder shall receive payment in Dollars as provided in paragraph (d) of this Section 3.11 (but, subject to any contravening valid election pursuant to paragraph (b) above, the elected payment currency or currency unit, in the case of the circumstances described in clause (i) above, or the payment currency or currency unit in the absence of such election, in the case of the circumstances described in clause (ii) above, shall, at the Company's election, resume being the currency or currency unit of payment with respect to Holders who have so elected, but only with respect to payments on payment dates preceded by 15 Business Days during which the circumstances which gave rise to such currency or currency unit, in the case of the circumstances described in clause (i) above, or the Dollar, in the case of the circumstances described in clause (ii) above, becoming the currency or currency unit, as applicable, of payment, no longer prevail).

(f) The "Dollar Equivalent of the Foreign Currency" shall be determined by the Exchange Rate Agent and shall be obtained for each subsequent payment date by the Exchange Rate Agent by converting the specified Foreign Currency into Dollars at the Market Exchange Rate on the Conversion Date.

(g) The "Dollar Equivalent of the Currency Unit" shall be determined by the Exchange Rate Agent and, subject to the provisions of paragraph (h) below, shall be the sum of each amount obtained by converting the Specified Amount of each Component Currency (as each such term is defined in paragraph (h) below) into Dollars at the Market Exchange Rate for such Component Currency on the Valuation Date with respect to each payment.

(h) For purposes of this Section 3.11, the following terms shall have the following meanings:

A "Component Currency" shall mean any currency which, on the Conversion Date, was a component currency of the relevant currency unit.

"Conversion Event" shall mean the cessation of use of (i) a Foreign Currency both by the government of the country which issued such currency and for the settlement of transactions by a central bank or other public institutions of or within the international banking community, or (ii) any currency unit for the purposes for which it was established.

“Election Date” shall mean the Regular Record Date for the applicable series of Registered Securities as specified pursuant to Section 3.1 by which the written election referred to in Section 3.11(b) may be made.

“Exchange Rate Agent”, when used with respect to Securities of or within any series, shall mean, unless otherwise specified with respect to such series of Securities pursuant to Section 3.1, a New York Clearing House bank designated pursuant to Section 3.1 or Section 3.12.

“Exchange Rate Officer’s Certificate” shall mean a certificate setting forth (i) the applicable Market Exchange Rate or the applicable bid quotation and (ii) the Dollar or Foreign Currency amounts of principal (and premium, if any) and interest, if any (on an aggregate basis and on the basis of a Security having the lowest denomination principal amount in the relevant currency or currency unit), payable with respect to a Security of any series on the basis of such Market Exchange Rate or the applicable bid quotation, signed by the President, the Chief Executive Officer, the Chief Financial Officer, any Vice President, the Treasurer, or any Assistant Treasurer of the Company.

“Market Exchange Rate” shall mean, unless otherwise specified with respect to Securities of any series pursuant to Section 3.1, as of any date of determination, (i) for any conversion involving a currency unit on the one hand and Dollars or any Foreign Currency on the other, the exchange rate between the relevant currency unit and Dollars or such Foreign Currency calculated by the method specified pursuant to Section 3.1 for the Securities of the relevant series, (ii) for any conversion of Dollars into any Foreign Currency, the noon buying rate for such Foreign Currency for cable transfers quoted in New York City as certified for customs purposes by the Federal Reserve Bank of New York and (iii) for any conversion of one Foreign Currency into Dollars or another Foreign Currency, the spot rate at noon local time in the relevant market at which, in accordance with normal banking procedures, the Dollars or Foreign Currency into which conversion is being made could be purchased with the Foreign Currency from which conversion is being made from major banks located in New York City, London or any other principal market for Dollars or such purchased Foreign Currency, in each case determined by the Exchange Rate Agent. Unless otherwise specified with respect to Securities of any series pursuant to Section 3.1, in the event of the unavailability of any of the exchange rates provided for in the foregoing clauses (i), (ii) and (iii), the Exchange Rate Agent shall use, in its sole discretion and without liability on its part, such quotation of the Federal Reserve Bank of New York as of the most recent available date, or quotations from one or more major banks in New York City, London or other principal market for such currency or currency unit in question (which may include any such bank acting as Trustee under this Indenture), or such other quotations as the Exchange Rate Agent shall deem appropriate. Unless otherwise specified by the Exchange Rate Agent, if there is more than one market for dealing in any currency or currency unit by reason of foreign exchange regulations or otherwise, the market to be used in respect of such currency or currency unit shall be that upon which a nonresident issuer of securities designated in such currency or currency unit would purchase such currency or currency unit in order to make payments in respect of such securities.

A “Specified Amount” of a Component Currency shall mean the number of units of such Component Currency or fractions thereof which such Component Currency represented in the relevant currency unit on the Conversion Date. If after the Conversion Date the official unit of any Component Currency is altered by way of combination or subdivision, the Specified Amount of such Component Currency shall be divided or multiplied in the same proportion. If after the Conversion Date two or more Component Currencies are consolidated into a single currency, the respective Specified Amounts of such Component Currencies shall be replaced by an amount in such single currency equal to the sum of the respective Specified Amounts of such consolidated Component Currencies expressed in such single currency, and such amount shall thereafter be a Specified Amount and such single currency shall thereafter be a Component Currency. If after the Conversion Date any Component Currency shall be divided into two or more currencies, the Specified Amount of such Component Currency shall be replaced by specified amounts of such two or more currencies, the sum of which, at the Market Exchange Rate of such two or more currencies on the date of such replacement, shall be equal to the Specified Amount of such former Component Currency and such amounts shall thereafter be Specified Amounts and such currencies shall thereafter be Component Currencies. If, after the Conversion Date of the relevant currency unit, a Conversion Event (other than any event referred to above in this definition of “Specified Amount”) occurs with respect to any Component Currency of such currency unit and is continuing on the applicable Valuation Date, the Specified Amount of such Component Currency shall, for purposes of calculating the Dollar Equivalent of the Currency Unit, be converted into Dollars at the Market Exchange Rate in effect on the Conversion Date of such Component Currency.

All decisions and determinations of the Exchange Rate Agent regarding the Dollar Equivalent of the Foreign Currency, the Dollar Equivalent of the Currency Unit, the Market Exchange Rate and changes in the Specified Amounts as specified above with respect to Securities of any series shall be in its sole discretion and shall, in the absence of manifest error, be conclusive for all purposes and irrevocably binding upon the Company, the Trustee (and any applicable Paying Agent) and all Holders of Securities of such series denominated or payable in the relevant currency, currencies or currency units. The Exchange Rate Agent shall promptly give written notice to the Company and the Trustee of any such decision or determination.

In the event that the Company determines in good faith that a Conversion Event has occurred with respect to a Foreign Currency, the Company will promptly give written notice thereof to the Trustee (or any applicable Paying Agent) and to the Exchange Rate Agent (and the Trustee (or such Paying Agent) will promptly thereafter give notice in the manner provided in Section 1.6 to the affected Holders) specifying the Conversion Date. In the event the Company so determines that a Conversion Event has occurred with respect to any currency unit in which Securities of a series are denominated or payable, the Company will promptly give written notice thereof to the Trustee (or any applicable Paying Agent) and to the Exchange Rate Agent (and the Trustee (or such Paying Agent) will promptly thereafter give notice in the manner provided in Section 1.6 to the affected Holders) specifying the Conversion Date and the Specified Amount of each Component Currency on the Conversion Date. In the event the Company determines in good faith that any subsequent change in any Component Currency as set forth in the definition of Specified Amount above has occurred, the Company will similarly give written notice to the Trustee (or any applicable Paying Agent) and to the Exchange Rate Agent.

The Trustee of the appropriate series of Securities shall be fully justified and protected in relying and acting upon information received by it from the Company and the Exchange Rate Agent and shall not otherwise have any duty or obligation to determine the accuracy or validity of such information independent of the Company or the Exchange Rate Agent.

Section 3.12. APPOINTMENT AND RESIGNATION OF EXCHANGE RATE AGENT. (a) Unless otherwise specified pursuant to Section 3.1, if and so long as the Securities of any series (i) are denominated in a currency or currency unit other than Dollars or (ii) may be payable in a currency or currency unit other than Dollars, or so long as it is required under any other provision of this Indenture, then the Company will maintain with respect to each such series of Securities, or as so required, at least one Exchange Rate Agent. The Company will cause the Exchange Rate Agent to make the necessary foreign exchange determinations at the time and in the manner specified pursuant to Section 3.11 for the purpose of determining the applicable rate of exchange and, if applicable, for the purpose of converting the issued currency or currencies or currency unit or units into the applicable payment currency or currency unit for the payment of principal, premium, if any, and interest, if any, pursuant to Section 3.11.

(b) No resignation of the Exchange Rate Agent and no appointment of a successor Exchange Rate Agent pursuant to this Section shall become effective until the acceptance of appointment by the successor Exchange Rate Agent as evidenced by a written instrument delivered to the Company and the Trustee of the appropriate series of Securities accepting such appointment executed by the successor Exchange Rate Agent.

(c) If the Exchange Rate Agent shall resign, be removed or become incapable of acting, or if a vacancy shall occur in the office of the Exchange Rate Agent for any cause, with respect to the Securities of one or more series, the Company shall promptly appoint a successor Exchange Rate Agent or Exchange Rate Agents with respect to the Securities of that or those series (it being understood that any such successor Exchange Rate Agent may be appointed with respect to the Securities of one or more or all of such series and that, unless otherwise specified pursuant to Section 3.1, at any time there shall only be one Exchange Rate Agent with respect to the Securities of any particular series that are originally issued by the Company on the same date and that are initially denominated and/or payable in the same currency or currencies or currency unit or units).

Section 3.13. WIRE TRANSFERS. Notwithstanding any other provisions to the contrary in this Indenture, the Company may make any payment of monies required to be deposited with the Trustee on account of principal of, or premium, if any, or interest on, Securities of any series (whether pursuant to optional or mandatory redemption payments, interest payment or otherwise) by wire transfer and immediately available funds to an account designated by the Trustee on or before the date and time such monies are to be paid to the Holders of the Security of such series in accordance with the terms hereof.

Section 3.14. CUSIP NUMBERS AND ISINS. The Company in issuing Securities may use "CUSIP" numbers or "ISINs", and if so, the Trustee may use the CUSIP numbers or ISINs in notices of redemption or exchange as a convenience to Holders; provided, however, that any such notice may state that no representation is made as to the correctness or accuracy of the CUSIP number or ISIN printed in the notice or on the Securities, that reliance may be placed only on the other identification numbers printed on the Securities, and any such redemption or exchange shall not be affected by any defect or omission of such CUSIP numbers or ISINs. The Company will promptly notify the Trustee of any change in CUSIP numbers or ISINs known to an Officer of the Company.

ARTICLE IV

SATISFACTION, DISCHARGE AND DEFEASANCE

Section 4.1. TERMINATION OF COMPANY'S OBLIGATIONS UNDER THE INDENTURE. (a) This Indenture shall upon Company Request cease to be of further effect with respect to Securities of or within any series (except as to any surviving rights of registration of transfer or exchange of such Securities and replacement of such Securities which may have been lost, stolen or mutilated as herein expressly provided for) and the Trustee, at the expense of the Company, shall execute proper instruments acknowledging satisfaction and discharge of this Indenture with respect to such Securities when

(1) either

(A) all such Securities previously authenticated and delivered (other than (i) such Securities which have been destroyed, lost or stolen and which have been replaced or paid as provided in Section 3.6 and (ii) such Securities 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 9.3) have been delivered to the Trustee for cancellation; or

(B) all Securities of such series not theretofore delivered to the Trustee for cancellation

(i) have become due and payable, or

(ii) will become due and payable at their Stated Maturity within one year, or

(iii) if redeemable at the option of the Company, are to be called for redemption within one year under arrangements satisfactory to the Trustee for giving of notice of redemption, and the Company, in the case of (i), (ii) or (iii) above, has irrevocably deposited or caused to be deposited with the Trustee as trust funds in trust for the purpose an amount in the currency or currencies or currency unit or units in which the Securities of such series are payable, sufficient to pay and discharge the entire indebtedness on such Securities not theretofore delivered to the Trustee for cancellation, for principal, premium, if any, and interest, with respect thereto, to the date of such deposit (in the case of any such Securities which have become due and payable) or to the Stated Maturity or Redemption Date, as the case may be;

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

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

Notwithstanding the satisfaction and discharge of this Indenture, the obligation of the Company to the Trustee and any predecessor Trustee under Section 6.8 and the obligations of the Company to any Authenticating Agent under Section 6.13 shall survive until the Securities of the discharged series have been paid in full, and, if money shall have been deposited with the Trustee pursuant to subclause (B) of clause (1) of this Section, the obligations of the Trustee under Section 4.2 and the last paragraph of Section 9.3 shall survive in accordance with the terms of such Sections.

Section 4.2. APPLICATION OF TRUST FUNDS. Subject to the provisions of the last paragraph of Section 9.3, all money deposited with the Trustee pursuant to Section 4.1 shall be held in trust and applied by it, in accordance with the provisions of the Securities and this Indenture, to the payment, either directly or through any Paying Agent (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 any interest for whose payment such money has been deposited with or received by the Trustee, but such money need not be segregated from other funds except to the extent required by law.

Section 4.3. APPLICABILITY OF DEFEASANCE PROVISIONS; COMPANY'S OPTION TO EFFECT DEFEASANCE OR COVENANT DEFEASANCE. Unless pursuant to Section 3.1 provision is made to exclude with respect to the Securities of a particular series either or both of (i) defeasance of the Securities of or within such series under Section 4.4 or (ii) covenant defeasance of the Securities of or within such series under Section 4.5, then, in addition to the rights of the Company pursuant to Section 4.1 above, the provisions of such Section or Sections, as the case may be, together with the provisions of Sections 4.6 through 4.9 inclusive, with such modifications thereto as may be specified pursuant to Section 3.1 with respect to any Securities of such series, shall be applicable to such Securities and the Company may at its option, at any time, with respect to such Securities elect to have Section 4.4 (if applicable) or Section 4.5 (if applicable) be applied to such Outstanding Securities upon compliance with the conditions set forth below in this Article.

Section 4.4. DEFEASANCE AND DISCHARGE. Upon the Company's exercise of the option specified in Section 4.3 applicable to this Section with respect to the Securities of or within a series, the Company shall be deemed to have been discharged from its obligations with respect to such Securities on the date the conditions set forth in Section 4.6 are satisfied (hereinafter, a "defeasance"). For this purpose, such defeasance means that the Company shall be deemed to have paid and discharged the entire indebtedness represented by such Securities which Securities shall thereafter be deemed to be "Outstanding" only for the purposes of Section 4.7 and the other Sections of this Indenture referred to in clause (ii) of this Section, and to have satisfied all its other obligations under such Securities and this Indenture insofar as such Securities are concerned (and the Trustee, at the expense of the Company, shall on Company Order execute proper instruments acknowledging the same), except the following which shall survive until otherwise terminated or discharged hereunder: (i) the rights of Holders of such Securities to receive, solely from the trust funds described in Section 4.6(a) and as more fully set forth in such Section, payments in respect of the principal of, premium, if any, and interest, if any, on such Securities when such payments are due; (ii) the Company's obligations with respect to such Securities under Sections 3.5, 3.6, 9.2 and 9.3 and with respect to the payment of additional amounts, if any, payable with respect to such Securities as specified pursuant to Section 3.1(b) (18); (iii) the rights, powers, trusts, duties, immunities and indemnities of the Trustee hereunder and (iv) this Article IV. Subject to compliance with this Article IV, the Company may exercise its option under this Section notwithstanding the prior exercise of its option under Section 4.5 with respect to such Securities. Following a defeasance, payment of such Securities may not be accelerated because of an Event of Default.

Section 4.5. COVENANT DEFEASANCE. Upon the Company's exercise of the option specified in Section 4.3 applicable to this Section with respect to any Securities of or within a series, the Company shall be released from its obligations under Sections 7.1, 9.4 and 9.5, and, if specified pursuant to Section 3.1, its obligations under any other covenant, with respect to such Securities on and after the date the conditions set forth in Section 4.6 are satisfied (hereinafter, "covenant defeasance"), and such Securities shall thereafter be deemed to be not "Outstanding" for the purposes of any direction, waiver, consent or declaration or Act of Holders (and the consequences of any thereof) in connection with Sections 7.1, 9.4 and 9.5, or such other specified covenant, and the operation of Sections 5.1(3) and 5.1(6), but shall continue to be deemed "Outstanding" for all other purposes hereunder. For this purpose, such covenant defeasance means that, with respect to such Securities, 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 Section or such other covenant, whether directly or indirectly, by reason of any reference elsewhere herein to any such Section or such other covenant or by reason of reference in any such Section or such other covenant to any other provision herein or in any other document and such omission to comply shall not constitute a Default or an Event of Default under Section 5.1(3) or 5.1(6) or otherwise, as the case may be, but, except as specified above, the remainder of this Indenture and such Securities shall be unaffected thereby.

Section 4.6. CONDITIONS TO DEFEASANCE OR COVENANT DEFEASANCE. The following shall be the conditions to application of Section 4.4 or Section 4.5 to any Securities of or within a series:

(a) The Company shall have deposited or caused to be deposited irrevocably with the Trustee (or another trustee satisfying the requirements of Section 6.11 who shall agree to comply with, and shall be entitled to the benefits of, the provisions of Sections 4.3 through 4.9 inclusive and the last paragraph of Section 9.3 applicable to the Trustee, for purposes of such Sections also a "Trustee") as trust funds in trust for the purpose of making the payments referred to in clauses (x) and (y) of this Section 4.6(a), with instructions to the Trustee as to the application thereof, (A) money in an amount (in such currency, currencies or currency unit in which such Securities are then specified as payable at Maturity), or (B) Government Obligations 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 referred to in clause (x) or (y) of this Section 4.6(a), money in an amount or (C) a combination thereof in an amount, sufficient, in the determination of a nationally recognized independent accounting or investment banking firm expressed in a written certification thereof delivered to the Trustee in the case of clauses (B) or (C), to pay and discharge, and which shall be applied by the Trustee to pay and discharge, (x) the principal of, premium, if any, and interest, if any, on such Securities on the Maturity of such principal or installment of principal or interest and (y) any mandatory sinking fund payments applicable to such Securities on the day on which such payments are due and payable in accordance with the terms of this Indenture and such Securities.

Before such a deposit, the Company may make arrangements satisfactory to the Trustee for the redemption of such Securities at a future date or dates in accordance with Article X which shall be given effect in applying the foregoing.

(b) The deposit pursuant to subsection (a) above shall not result in or constitute a Default or Event of Default under this Indenture or result in a breach or violation of, or constitute a default under, any other material agreement or instrument to which the Company is a party or by which it is bound.

(c) In the case of an election under Section 4.4, no Default or Event of Default under Section 5.1(4) or 5.1(5) with respect to such Securities shall have occurred and be continuing during the period commencing on the date of such deposit and ending on the 91st day after such date (it being understood that this condition shall not be deemed satisfied until the expiration of such period).

(d) In the case of an election under Section 4.4, the Company shall have delivered to the Trustee an Officer's Certificate and an Opinion of Counsel to the effect that (i) the Company has received from, or there has been published by, the Internal Revenue Service a ruling, or (ii) since the date of execution of this Indenture, there has been a change in the applicable Federal income tax law, in either case to the effect that, and based thereon such opinion shall confirm that, the Holders of such Securities will not recognize income, gain or loss for Federal income tax purposes as a result of such defeasance and will be subject to Federal income tax on the same amounts and in the same manner and at the same times, as would have been the case if such deposit, defeasance and discharge had not occurred.

(e) In the case of an election under Section 4.5, the Company shall have delivered to the Trustee an Opinion of Counsel to the effect that the Holders of such Securities will not recognize income, gain or loss for Federal income tax purposes as a result of such covenant defeasance and will be subject to Federal income tax on the same amounts, in the same manner and at the same times as would have been the case if such covenant defeasance had not occurred.

(f) The Company shall have delivered to the Trustee an Officer's Certificate and an Opinion of Counsel, each stating that all conditions precedent to the defeasance under Section 4.4 or the covenant defeasance under Section 4.5 (as the case may be) have been complied with and an Opinion of Counsel to the effect that either (i) as a result of a deposit pursuant to subsection (a) above and the related exercise of the Company's option under Section 4.4 or Section 4.5 (as the case may be), registration is not required under the Investment Company Act of 1940, as amended, by the Company, with respect to the trust funds representing such deposit or by the trustee for such trust funds or (ii) all necessary registrations under said act have been effected.

(g) Such defeasance or covenant defeasance shall be effected in compliance with any additional or substitute terms, conditions or limitations which may be imposed on the Company in connection therewith as contemplated by Section 3.1.

Section 4.7. DEPOSITED MONEY AND GOVERNMENT OBLIGATIONS TO BE HELD IN TRUST. Subject to the provisions of the last paragraph of Section 9.3, all money and Government Obligations (or other property as may be provided pursuant to Section 3.1) (including the proceeds thereof) deposited with the Trustee pursuant to Section 4.6 in respect of any Securities of any series shall be held in trust and applied by the Trustee, in accordance with the provisions of such Securities and this Indenture, 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 Holders of such Securities of all sums due and to become due thereon in respect of principal, premium, if any, and interest, if any, but such money need not be segregated from other funds except to the extent required by law.

If specified with respect to a Security of any series pursuant to Section 3.1, if, after a deposit referred to in Section 4.6(a) has been made, (i) the Holder of such Security in respect of which such deposit was made is entitled to, and does, elect pursuant to Section 3.11(b) or the terms of such Security to receive payment in a currency or currency unit other than that in which the deposit pursuant to Section 4.6(a) has been made in respect of such Security, or (ii) a Conversion Event occurs as contemplated in Section 3.11(d) or 3.11(e) or by the terms of the Security in respect of which the deposit pursuant to Section 4.6(a) has been made, the indebtedness represented by such Security shall be deemed to have been, and will be, fully discharged and satisfied through the payment of the principal of, premium, if any, and interest, if any, on such Security as the same becomes due out of the proceeds yielded by converting (from time to time as specified below in the case of any such election) the amount or other property deposited in respect of such Security into the currency or currency unit in which such Security becomes payable as a result of such election or Conversion Event based on the applicable Market Exchange Rate for such currency or currency unit in effect on the second Business Day prior to each payment date, except, with respect to a Conversion Event, for such currency or currency unit in effect (as nearly as feasible) at the time of the Conversion Event.

Section 4.8. REPAYMENT TO COMPANY. The Trustee (and any Paying Agent) shall promptly pay to the Company upon Company Request any excess money or securities held by them at any time.

Section 4.9. INDEMNITY FOR GOVERNMENT OBLIGATIONS. The Company shall pay, and shall indemnify the Trustee against, any tax, fee or other charge imposed on or assessed against Government Obligations deposited pursuant to this Article or the principal and interest received on such Government Obligations, other than any such tax, fee or other charge that by law is for the account of the Holders of the Securities subject to defeasance or covenant defeasance pursuant to this Article.

ARTICLE V

DEFAULTS AND REMEDIES

Section 5.1. EVENTS OF DEFAULT. An “Event of Default” occurs with respect to the Securities of any series, except to the extent such event is specifically deleted or modified by the applicable Board Resolutions or supplemental indenture as contemplated by Section 3.1 for the Securities of such series, if (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):

(1) the Company defaults in the payment of interest on any Security of that series or any additional amount payable with respect to any Security of that series as specified pursuant to Section 3.1(b)(17) when the same becomes due and payable and such default continues for a period of 30 days;

(2) the Company defaults in the payment of the principal of or any premium on any Security of that series when the same becomes due and payable at its Maturity or on redemption or otherwise, or in the payment of a mandatory sinking fund payment when and as due by the terms of the Securities of that series;

(3) the Company defaults in the performance of, or breaches, any covenant or warranty of the Company in this Indenture with respect to any Security of that series (other than a covenant or warranty a default in whose performance or whose breach is elsewhere in this Section specifically dealt with), and such default or breach continues for a period of 90 days after there has been given, by registered or certified mail, to the Company by the Trustee or to the Company and the Trustee by the Holders of at least 25% in principal amount of the Outstanding Securities of that series, a written notice specifying such default or breach and requiring it to be remedied and stating that such notice is a “Notice of Default” hereunder;

(4) the Company, pursuant to or within the meaning of any Bankruptcy Law, (A) commences a voluntary case, (B) consents to the entry of an order for relief against it in an involuntary case, (C) consents to the appointment of a Custodian of it or for all or substantially all of its property, or (D) makes a general assignment for the benefit of its creditors;

(5) a court of competent jurisdiction enters an order or decree under any Bankruptcy Law that (A) is for relief against the Company in an involuntary case, (B) appoints a Custodian of the Company or for all or substantially all of its property, or (C) orders the liquidation of the Company; and the order or decree remains unstayed and in effect for 90 days; or

(6) any other Event of Default provided as contemplated by Section 3.1 with respect to Securities of that series.

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

Section 5.2. ACCELERATION; RESCISSION AND ANNULMENT. If an Event of Default with respect to the Securities of any series at the time Outstanding occurs and is continuing, the Trustee or the Holders of at least 25% in aggregate principal amount of all of the Outstanding Securities of that series, by written notice to the Company (and, if given by the Holders, to the Trustee), may declare the principal (or, if the Securities of that series are Original Issue Discount Securities or Indexed Securities, such portion of the principal amount or other amount as may be specified in the terms of that series) of all the Securities of that series to be due and payable and upon any such declaration such principal (or, in the case of Original Issue Discount Securities or Indexed Securities, such specified amount) shall be immediately due and payable.

At any time after such a declaration of acceleration with respect to Securities of any series has been made and before a judgment or decree for payment of the money due has been obtained by the Trustee as hereinafter in this Article provided, the Holders of a majority in aggregate principal amount of the Outstanding Securities of that series, by written notice to the Trustee, may rescind and annul such declaration and its consequences if all existing Defaults and Events of Default with respect to Securities of that series, other than the non-payment of the principal of Securities of that series which have become due solely by such declaration of acceleration, have been cured or waived as provided in Section 5.7. Upon any such rescission, the parties hereto shall be restored respectively to their several positions and rights hereunder, and all rights, remedies and powers of the parties hereto shall continue as though no acceleration had occurred.

Section 5.3. COLLECTION OF INDEBTEDNESS AND SUITS FOR ENFORCEMENT BY TRUSTEE. The Company covenants that if:

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

(2) default is made in the payment of the principal of (or premium, if any, on) any Security of any series at the Maturity thereof and such default continues for a period of 10 days, the Company will, upon demand of the Trustee, pay to it, for the benefit of the Holders of such Securities, the whole amount then due and payable on such Securities for principal, premium, if any, and interest and, to the extent that payment of such interest shall be legally enforceable, interest on any overdue principal, premium, if any, and on any overdue interest, at the rate or rates prescribed therefor in such Securities.

If the Company fails to pay such principal, premium, if any, and interest 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 such principal, premium, if any, and interest amounts so due and unpaid, may prosecute such proceeding to judgment or final decree and may enforce the same against the Company.

In addition, if an Event of Default with respect to Securities of any series occurs and is continuing, the Trustee may in its discretion proceed, in its own name and as trustee of an express trust, 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 5.4. TRUSTEE MAY FILE PROOFS OF CLAIM. The Trustee may file such proofs of claim and other papers or documents as may be necessary or advisable in order to have the claims of the Trustee and the Holders of Securities of each series allowed in any judicial proceedings relating to the Company, its creditors or its property.

Section 5.5. 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, in its own name and as trustee of an express trust, without the possession of any of the Securities of such series or the production thereof in any proceeding relating thereto.

Section 5.6. DELAY OR OMISSION NOT WAIVER. No delay or omission by the Trustee or any Holder of any Securities to exercise any right or remedy accruing upon an Event of Default shall impair any such right or remedy or constitute a waiver of or acquiescence in any such Event of Default.

Section 5.7. WAIVER OF PAST DEFAULTS. The Holders of a majority in aggregate principal amount of Outstanding Securities of any series by notice to the Trustee may waive on behalf of the Holders of all Securities of such series a past Default or Event of Default with respect to that series and its consequences except a Default or Event of Default (i) in the payment of the principal of, premium, if any, or interest on any Security of such series or (ii) in respect of a covenant or provision hereof which pursuant to Section 8.2 cannot be amended or modified without the consent of the Holder of each Outstanding Security of such series adversely affected. Upon any such waiver, such Default shall cease to exist, and any Event of Default arising therefrom shall be deemed to have been cured, for every purpose of this Indenture; but no such waiver shall extend to any subsequent or other Default or Event of Default or impair any right consequent thereon. In case of any such waiver, the Company, the Trustee and the Holders shall be restored to their former positions and rights hereunder and under the Securities of such series, respectively.

Section 5.8. CONTROL BY MAJORITY. The Holders of a majority in aggregate principal amount of the Outstanding Securities of each series affected (with each such series voting as a class) 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 it with respect to Securities of that series; provided, however, that (i) the Trustee may refuse to follow any direction that conflicts with law or this Indenture, (ii) the Trustee may refuse to follow any direction that is unduly prejudicial to the rights of the Holders of Securities of such series not consenting, or that would in the good faith judgment of the Trustee have a substantial likelihood of involving the Trustee in personal liability and (iii) the Trustee may take any other action deemed proper by the Trustee which is not inconsistent with such direction.

Section 5.9. LIMITATION ON SUITS BY HOLDERS. 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:

- (1) the Holder has previously given written notice to the Trustee of a continuing Event of Default with respect to the Securities of that series;
- (2) the Holders of at least 25% in aggregate principal amount of the Outstanding Securities of that series have made a written request to the Trustee to institute proceedings in respect of such Event of Default in its own name as Trustee hereunder;

(3) such Holder or Holders have offered to the Trustee indemnity satisfactory to the Trustee against any loss, liability or expense to be, or which may be, incurred by the Trustee in pursuing the remedy;

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

(5) during such 60 day period, the Holders of a majority in aggregate principal amount of the Outstanding Securities of that series have not given to the Trustee a direction inconsistent with such written request.

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

Section 5.10. RIGHTS OF HOLDERS TO RECEIVE PAYMENT. Notwithstanding any other provision of this Indenture, but subject to Section 9.2, the right of any Holder of a Security to receive payment of principal of, premium, if any, and, subject to Sections 3.5 and 3.7, interest on the Security of such Holder, on or after the respective due dates expressed in the Security of such Holder (or, in case of redemption, on the redemption dates), or to bring suit for the enforcement of any such payment on or after such respective dates, shall not be impaired or affected without the consent of such Holder.

Section 5.11. APPLICATION OF MONEY COLLECTED. If the Trustee collects any money pursuant to this Article with respect to a particular series of Securities, it shall pay out the money 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, upon presentation of the Securities of the applicable series and the notation thereon of the payment if only partially paid and upon surrender thereof if fully paid:

First: to the Trustee for amounts due under Section 6.8 in connection with such series of Securities in respect of which money or other property is collected;

Second: Subject to the terms of any subordination entered into as contemplated by Section 3.1(b) (27) hereof, to Holders of Securities of such series in respect of which or for the benefit of which such money has been collected for amounts due and unpaid on such Securities for principal of, premium, if any, and interest, ratably, without preference or priority of any kind, according to the amounts due and payable on such Securities for principal, premium, if any, and interest, respectively; and

Third: The balance, if any, to the Company.

The Trustee may fix a record date and payment date for any payment to Holders pursuant to this Section 5.11. At least 15 days before such record date, the Trustee shall mail to each Holder and the Company a notice that states the record date, the payment date and the amount to be paid.

Unless otherwise specified in a supplemental indenture with respect to a series of Securities, in any case where Securities of a series are outstanding which are denominated in more than one currency, or in a composite currency and at least one other currency, and the Trustee is directed to make ratable payments under this Section to Holders of Securities of such series, the Trustee shall calculate the amount of such payments as follows: as of the day the Trustee collects an amount under this Article, the Trustee shall, (i) as to each Holder of a Security of such series to whom an amount is due and payable under this Section which is denominated in a foreign currency or a composite currency, determine that amount of Dollars that would be obtained for the amount owing such Holder, using the rate of exchange at which in accordance with normal banking procedures the Trustee could purchase in Dollars as of such day with such amount owing, (ii) calculate the sum of all Dollar amounts determined under (i) and add thereto any amounts due and payable in Dollars; and (iii) using the individual amounts determined in (i) or any individual amounts due and payable in Dollars, as the case may be, as a numerator and the sum calculated in (ii) as a denominator, calculate as to each Holder of a Security of such series to whom an amount is owed under this Section the fraction of the amount collected under this Article payable to such Holder. Any expenses incurred by the Trustee in actually converting amounts owing Holders of Securities of a series denominated in a currency or composite currency other than that in which any amount is collected under this Article shall be likewise (in accordance with this paragraph) be borne ratably by all Holders of Securities of such series to whom amounts are payable under this Section.

Unless otherwise specified in the supplemental indenture with respect to a series of Securities, to the fullest extent allowed under applicable law, if for the purpose of obtaining judgment against the Company in any court it is necessary to convert the sum due in respect of the principal of, or any premium or interest on the Securities of any series (the "Required Currency") into a currency in which judgment will be rendered (the "Judgment Currency"), the rate of exchange used shall be the rate at which in accordance with normal banking procedures the Trustee could purchase in The City of New York the Required Currency with the Judgment Currency on the New York Business Day preceding that on which final judgment is given. The Company shall not be liable for any shortfall in payments to Holders of Securities of a series under this Section caused by a change in exchange rates between the time the amount of a judgment against it is calculated as above and the time the Trustee converts the Judgment Currency into the Required Currency to make payments under this Section to Holders of such Securities, but payment of such judgment shall discharge all amounts owed by the Company on the claim or claims underlying such judgment.

Section 5.12. RESTORATION OF RIGHTS AND REMEDIES. If the Trustee or any Holder has instituted any proceeding to enforce any right or remedy under this Indenture and such proceeding has been discontinued or abandoned for any reason, or has been determined adversely to the Trustee or to such Holder, then and in every such case, subject to any determination in such proceeding, the Company, the Trustee and the Holders shall be restored severally and respectively to their former positions hereunder and thereafter all rights and remedies of the Trustee and the Holders shall continue as though no such proceeding had been instituted.

Section 5.13. RIGHTS AND REMEDIES CUMULATIVE. Except as otherwise provided in Section 5.9 or with respect to the replacement or payment of mutilated, destroyed, lost or stolen Securities in the last paragraph of Section 3.6, no right or remedy herein conferred upon or reserved to the Trustee or the Holders is intended to be exclusive of any other right or remedy, and every right and remedy shall, to the extent permitted by law, be cumulative and in addition to every other right and remedy given hereunder or now or hereafter existing at law or in equity or otherwise. The assertion or employment of any right or remedy hereunder, or otherwise, shall not prevent the concurrent assertion or employment of any other appropriate right or remedy.

ARTICLE VI

THE TRUSTEE

Section 6.1. DUTIES AND RESPONSIBILITIES OF TRUSTEE; RELIANCE ON DOCUMENTS, OPINIONS, ETC. (a) The Trustee, prior to the occurrence of an Event of Default and after the curing or waiver of all Events of Default that may have occurred, undertakes to perform such duties and only such duties as are specifically set forth in this Indenture. In the event an Event of Default has occurred and is continuing, the Trustee shall exercise such of the rights and powers vested in it by this Indenture, and use the same degree of care and skill in its exercise, as a prudent person would exercise or use under the circumstances in the conduct of such person's own affairs; provided that if an Event of Default occurs and is continuing, the Trustee will be under no obligation to exercise any of the rights or powers under this Indenture at the request or direction of any of the Holders unless such Holders have offered to the Trustee indemnity or security satisfactory to it in its reasonable discretion against any loss, liability or expense that might be incurred by it in compliance with such request or direction.

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:

(1) prior to the occurrence of an Event of Default and after the curing or waiving of all Events of Default that may have occurred:

(2) the duties and obligations of the Trustee shall be determined solely by the express provisions of this Indenture, and the Trustee shall not be liable except for the performance of such duties and obligations as are specifically set forth in this Indenture and no implied covenants or obligations shall be read into this Indenture against the Trustee; and

(3) in the absence of bad faith and willful misconduct on the part of the Trustee, the Trustee may conclusively rely, as to the truth of the statements and the correctness of the opinions expressed therein, upon any 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 that by any provisions 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 to the requirements of this Indenture (but need not confirm or investigate the accuracy of any mathematical calculations or other facts stated therein);

(4) the Trustee shall not be liable for any error of judgment made in good faith by a Responsible Officer or Officers of the Trustee, unless it shall be proved that the Trustee was grossly negligent in ascertaining the pertinent facts;

(5) 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 of the aggregate principal amount of the Securities at the time outstanding relating to the time, method and place of conducting any proceeding for any remedy available to the Trustee, or exercising any trust or power conferred upon the Trustee, under this Indenture;

(6) whether or not therein 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 clause (a) and clause (b) below;

(7) the Trustee shall not be liable in respect of any payment (as to the correctness of amount, entitlement to receive or any other matters relating to payment) or notice effected by the Company or any Paying Agent or any records maintained by any co- Registrar with respect to the Securities;

(8) if any party fails to deliver a notice relating to an event the fact of which, pursuant to this Indenture, requires notice to be sent to the Trustee, the Trustee may conclusively rely on its failure to receive such notice as reason to act as if no such event occurred, unless a Responsible Officer of the Trustee had actual knowledge of such event;

(9) in the absence of written investment direction from the Company, all cash received by the Trustee shall be placed in a non-interest bearing trust account, and in no event shall the Trustee be liable for the selection of investments or for investment losses incurred thereon or for losses incurred as a result of the liquidation of any such investment prior to its maturity date or the failure of the party directing such investments prior to its maturity date or the failure of the party directing such investment to provide timely written investment direction, and the Trustee shall have no obligation to invest or reinvest any amounts held hereunder in the absence of such written investment direction from the Company; and

(10) in the event that the Trustee is also acting as custodian, Registrar, Paying Agent, Conversion Agent or transfer agent hereunder, the rights and protections afforded to the Trustee pursuant to this Article VI shall also be afforded to such custodian, Registrar, Paying Agent, Conversion Agent or transfer agent.

None of the provisions contained in this Indenture shall require the Trustee to expend or risk its own funds or otherwise incur personal or financial liability in the performance of any of its duties or in the exercise of any of its rights or powers. The Trustee shall not be required to give any bond or surety in respect of the performance of its powers or duties hereunder. The Trustee will be under no obligation to exercise any of its rights and powers under this Indenture at the request or direction of the Holders unless such Holder has offered to the Trustee security or indemnity satisfactory to it in its reasonable discretion against any loss, liability or expense.

(b) Except as otherwise provided in **the foregoing clause (a) of this Section 6.1:**

(1) the Trustee may conclusively rely and shall be fully protected in acting upon any resolution, certificate, statement, instrument, opinion, report, notice, request, consent, order, bond, note, coupon or other paper or document believed by it in good faith to be genuine and to have been signed or presented by the proper party or parties;

(2) any request, direction, order or demand of the Company mentioned herein shall be sufficiently evidenced by an Officers' Certificate (unless other evidence in respect thereof be herein specifically prescribed); and any Board Resolution may be evidenced to the Trustee by a copy thereof certified by the Corporate Secretary or an Assistant Secretary of the Company;

(3) the Trustee may consult with counsel of its own selection and require an Opinion of Counsel and any advice of such counsel or Opinion of Counsel shall be full and complete authorization and protection in respect of any action taken or omitted by it hereunder in good faith and in accordance with such advice or Opinion of Counsel;

(4) 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 at the expense of the Company and shall incur no liability of any kind by reason of such inquiry or investigation;

(5) the Trustee may execute any of the trusts or powers hereunder or perform any duties hereunder either directly or by or through a co-trustee, agents, custodians, nominees or attorneys and the Trustee shall not be responsible for any misconduct or negligence on the part of any agent, custodian, nominee or attorney appointed by it with due care hereunder;

(6) the permissive rights of the Trustee enumerated herein shall not be construed as duties;

(7) the Trustee shall not be liable for any action taken, suffered, or omitted to be taken by it in good faith and reasonably believed by it to be authorized or within the discretion or rights or powers conferred upon it by this Indenture;

(8) the Trustee shall not be responsible for monitoring the performance of other persons or for the failure of others to perform their duties;

(9) the Holders will not direct the Trustee to take action contrary to this Indenture, the Securities or applicable law, and the Trustee is not obligated to follow any instruction of the Holders that is contrary to this Indenture, the Securities or applicable law;

(10) the Trustee may request that the Company deliver an Officer's Certificate setting forth the names of individuals and/or titles of officers authorized at such time to take specified actions pursuant to this Indenture, which Officers' Certificate may be signed by any Person authorized to sign an Officers' Certificate, including any Person specified as so authorized in any such certificate previously delivered and not superseded;

(11) the Trustee shall not be required to give any bond or surety in respect of the execution of the trusts and powers under this Indenture;

(12) in no event shall the Trustee be liable for any special, punitive, indirect or consequential loss or damage of any kind whatsoever (including but not limited to lost profits), even if the Trustee has been advised of the likelihood of such loss or damage and regardless of the form of action;

(13) the Trustee shall not be charged with knowledge of any Default or Event of Default with respect to the Securities, unless either (1) a Responsible Officer shall have actual knowledge of such Default or Event of Default or (2) written notice of such Default or Event of Default shall have been given to the Trustee by the Company or actually received by a Responsible Officer at the Corporate Trust Office of the Trustee from the Company, a Paying Agent, any Holder or any agent of any Holder, referencing this Indenture;

(14) the Trustee shall not be responsible or liable for any failure or delay in the performance of its obligations under this Indenture arising out of or caused, directly or indirectly, by circumstances beyond its reasonable control, including, without limitation, acts of God; earthquakes; fire; flood; terrorism; wars and other military disturbances; sabotage; epidemics; riots; interruptions; loss or malfunction of utilities, computer (hardware or soft-ware) or communication services; accidents; labor disputes; and acts of civil or military authorities and governmental action; and

(15) neither the Trustee nor any of its directors, officers, employees, agents or affiliates shall be responsible for nor have any duty to monitor the performance or any action of the Company, or any of their respective directors, members, officers, agents, affiliates or employee, nor shall it have any liability in connection with the malfeasance or nonfeasance by such party, nor shall the Trustee be responsible for any inaccuracy in the information obtained from the Company or for any inaccuracy or omission in the records which may result from such information or any failure by the Trustee to perform its duties as set forth herein as a result of any inaccuracy or incompleteness.

Section 6.2. TRUSTEE, PAYING AGENTS, CONVERSION AGENTS OR REGISTRAR MAY HOLD SECURITIES. The Trustee, any Paying Agent, any Registrar or any other agent of the Company, in its individual or any other capacity, may become the owner or pledgee of Securities and, subject to Sections 310(b) and 311 of the Trust Indenture Act, may otherwise deal with the Company, an Affiliate or Subsidiary with the same rights it would have if it were not Trustee, Paying Agent, Registrar or such other agent.

Section 6.3. MONIES TO BE HELD IN TRUST. Subject to the provisions of Section 4.8 and the last paragraph of Section 9.3, all moneys received by the Trustee shall, until used or applied as herein provided, be held in trust for the purposes for which they were received, but need not be segregated from other funds except to the extent required by law. The Trustee shall be under no liability for investment of or interest on any money received by it hereunder except as otherwise agreed with the Company. Except for amounts deposited pursuant to Article IV, so long as no Event of Default shall have occurred and be continuing, all interest allowed on any such moneys shall be paid from time to time to the Company upon a Company Order. The Trustee shall not be obligated to take possession of any Common Stock, whether upon conversion or in connection with any discharge of this Indenture pursuant hereto.

Section 6.4. NO RESPONSIBILITIES FOR RECITALS, ETC. The recitals contained herein and in the Securities (except in the Trustee's certificate of authentication) shall be taken as the statements of the Company, and the Trustee assumes no responsibility for the correctness of the same. The Trustee makes no representations as to the validity or sufficiency of this Indenture or of the Securities, except that the Trustee represents and warrants that it is duly authorized to execute and deliver this Indenture, authenticate the Securities and perform its obligations hereunder and thereunder; that the statements made by it in a Statement of Eligibility and Qualification on Form T-1 supplied or to be supplied to the Company in connection with the registration of any Securities are and at the time of delivery will be true and accurate; and that such Statement complies and at the time of delivery will comply with the requirements of the Trust Indenture Act and the Securities Act, in each case, applicable to such Statement. The Trustee shall not be accountable for the use or application by the Company of any Securities or the proceeds of any Securities authenticated and delivered by the Trustee in conformity with the provisions of this Indenture.

Section 6.5. NOTICE OF DEFAULTS. If a Default occurs and is continuing with respect to the Securities of any series and if it is known to a Responsible Officer of the Trustee, the Trustee shall, within 90 days after it occurs, transmit, in the manner and to the extent provided in Section 313(c) of the Trust Indenture Act, notice of all uncured Defaults known to it; provided, however, that, except in the case of a Default in payment on the Securities of any series, the Trustee may withhold the notice if and so long as a trust committee of Responsible Officers in good faith determines that withholding such notice is in the interests of Holders of Securities of that series; provided, further, that in the case of any default or breach of the character specified in Section 5.1(3) with respect to the Securities of such series, no such notice to Holders shall be given until at least 90 days after the occurrence thereof.

Section 6.6. REPORTS BY TRUSTEE TO HOLDERS. (a) Within 60 days after each May 15 of each year commencing with the first May 15 after the first issuance of Securities of any series pursuant to this Indenture, the Trustee shall transmit by mail to all Holders of Securities of such series as provided in Section 313(c) of the Trust Indenture Act a brief report dated as of such May 15 if required by and in compliance with Section 313(a) of the Trust Indenture Act. A copy of each report shall, at the time of such transmission to Holders, be filed by the Trustee with each stock exchange, if any, upon which the Securities of any series are listed, with the Commission and with the Company. The Company will promptly notify the Trustee when the Securities of any series are listed on any stock exchange and of any delisting thereof.

(b) The Trustee shall from time to time transmit by mail to all Holders of Securities as provided in Section 313(c) of the Trust Indenture Act, such reports as are required to be filed pursuant to Section 313(b) of the Trust Indenture Act.

Section 6.7. SECURITY HOLDER LISTS. The Trustee shall preserve in as current a form as is reasonably practicable the most recent list available to it of the names and addresses of Holders of Securities of each series. If the Trustee is not the Registrar, the Company shall furnish to the Trustee semiannually on or before the last day of June and December in each year, and at such other times as the Trustee may request in writing, a list, in such form and as of such date as the Trustee may reasonably require, containing all the information in the possession or control of the Registrar, the Company or any of its Paying Agents other than the Trustee as to the names and addresses of Holders of Securities of each such series.

Section 6.8. COMPENSATION AND INDEMNITY. The Company covenants and agrees to pay to the Trustee from time to time, and the Trustee shall be entitled to, compensation as agreed in writing between the Company and the Trustee for all services rendered by it hereunder in any capacity (which shall not be limited by any provision of law in regard to the compensation of a trustee of an express trust) as mutually agreed to in writing between the Trustee and the Company, and the Company will pay or reimburse the Trustee upon its request for all reasonable expenses, disbursements and advances reasonably incurred or made by the Trustee in accordance with any of the provisions of this Indenture in any capacity thereunder (including the reasonable compensation and the expenses and disbursements of its agents and counsel and of all Persons not regularly in its employ and including reasonable attorneys' fees in connection with enforcement of its rights to indemnity herein) except any such expense, disbursement or advance as shall have been caused by its gross negligence, willful misconduct or bad faith. The Company also covenants to indemnify the Trustee in any capacity under this Indenture and any other document or transaction entered into in connection herewith and its agents and any authenticating agent for, and to hold them harmless against, any loss, claim, damage, liability, fee, cost, loss, tax, claim, action or expense incurred without gross negligence, willful misconduct or bad faith on the part of the Trustee, its officers, directors, agents or employees, or such agent or authenticating agent, as the case may be, and arising out of or in connection with the acceptance or administration of this Indenture or in any other capacity hereunder, including third-party claims and claims involving the Company, and including the costs and expenses of defending themselves against any claim of liability in the premises or enforcing this indemnity. The obligations of the Company under this Section 6.8 to compensate or indemnify the Trustee and to pay or reimburse the Trustee for expenses, disbursements and advances shall be secured by a senior claim to which the Securities of the applicable series are hereby made subordinate on all money or property held or collected by the Trustee, except, subject to the effect of Section 5.11, funds held in trust herewith for the benefit of the Holders of particular Securities. The Trustee's right to receive payment of any amounts due under this Section 6.8 shall not be subordinate to any other liability or indebtedness of the Company. The obligation of the Company under this Section 6.8 shall survive the satisfaction and discharge of this Indenture and the earlier resignation or removal of the Trustee. The Company need not pay for any settlement made without its consent, which consent shall not be unreasonably withheld. The indemnification provided in this Section 6.8 shall extend to the officers, directors, agents and employees of the Trustee.

Without prejudice to any other rights available to the Trustee under applicable law, when the Trustee and its agents and any Authenticating Agent incur expenses or render services after an Event of Default specified in Section 5.1(4) or Section 5.1(5) occurs, the expenses and the compensation for the services are intended to constitute expenses of administration under any bankruptcy, insolvency or similar laws.

Section 6.9. SEPARATE TRUSTEE; REPLACEMENT OF TRUSTEE. (a) The Company may, but need not, appoint a separate Trustee for any one or more series of Securities. The resignation or removal of the Trustee and the appointment of a successor Trustee shall become effective only upon the successor Trustee's acceptance of appointment as provided in Section 6.10. In the event of an appointment of a separate Trustee for any one or more series of Securities, the allocation of responsibilities between the separate Trustees shall be determined at that time.

(b) The Trustee may resign at any time with respect to the Securities of any one or more series by giving written notice thereof to the Company. If the instrument of acceptance by a successor Trustee required by Section 6.10 shall not have been delivered to the Trustee within 30 days after the giving of such notice of resignation, the resigning Trustee may (at the Company's expense) petition any court of competent jurisdiction for the appointment of a successor Trustee with respect to the Securities of such series.

(c) The Holders of a majority in aggregate principal amount of the Outstanding Securities of any series may remove the Trustee with respect to any one or more series by so notifying the Trustee and the Company in writing and may appoint a successor Trustee for such series with the Company's consent.

If an instrument of acceptance by a successor Trustee required by Section 6.10 shall not have been delivered to the Trustee within 30 days after the giving of such notice of removal, the Trustee being removed may petition any court of competent jurisdiction for the appointment of a successor Trustee with respect to the Securities of such series.

(d) If at any time:

(1) the Trustee fails to comply with Section 310(b) of the Trust Indenture Act after written request therefor by the Company or by any Holder who has been a bona fide Holder of a Security for at least six months, or

(2) the Trustee shall cease to be eligible under Section 6.11 hereof or Section 310(a) of the Trust Indenture Act and shall fail to resign after written request therefor by the Company or by any Holder of a Security who has been a bona fide Holder of a Security for at least six months; or

(3) the Trustee becomes incapable of acting, is adjudged a bankrupt or an insolvent or a receiver or public officer takes charge of the Trustee or its property or affairs for the purpose of rehabilitation, conservation or liquidation, then, in any such case, (i) the Company may remove the Trustee with respect to all Securities, or (ii) subject to Section 315(e) of the Trust Indenture Act, any Holder who has been a bona fide Holder of a Security for at least six months may, on behalf of himself and all others similarly situated, petition any court of competent jurisdiction for the removal of the Trustee with respect to Securities of the series held by such Holder and the appointment of a successor Trustee or Trustees.

(e) If the Trustee resigns or is removed or becomes incapable of acting or if a vacancy exists in the office of Trustee for any reason, with respect to Securities of one or more series, the Company shall promptly appoint a successor Trustee with respect to the Securities of that or those series (it being understood that any such successor Trustee may be appointed with respect to the Securities of one or more or all of such series and that at any time there shall be only one Trustee with respect to the Securities of any particular series) and shall comply with the applicable requirements of Section 6.10. If, within one year after such resignation, removal or incapability, or the occurrence of such vacancy, a successor Trustee with respect to the Securities of any series shall be appointed by Act of the Holders of a majority 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 in accordance with the applicable requirements of Section 6.10, become the successor Trustee with respect to the Securities of such series and to that extent supersede the successor Trustee appointed by the Company. If no successor Trustee with respect to the Securities of any series shall have been so appointed by the Company or the Holders and accepted appointment in the manner required by Section 6.10, then, subject to Section 315(e) of the Trust Indenture Act, any Holder who has been a bona fide Holder of a Security of such 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 the Securities of such series.

Section 6.10. ACCEPTANCE OF APPOINTMENT BY SUCCESSOR. (a) In case of the appointment hereunder of a successor Trustee with respect to Securities of any series, every such successor Trustee shall execute, acknowledge and deliver to the Company and to the retiring Trustee an instrument accepting such appointment. Thereupon, the resignation or removal of the retiring Trustee shall become effective, and the successor Trustee, without further act, deed or conveyance, shall become vested with all the rights, powers and duties of the retiring Trustee; but, on the request of the Company or the successor Trustee, such retiring Trustee shall, upon payment of its charges, execute and deliver an instrument transferring to such successor Trustee all the rights, powers and trusts of the retiring Trustee and shall duly assign, transfer and deliver to such successor Trustee all property and money held by such retiring Trustee hereunder.

(b) 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 retiring Trustee and such successor Trustee shall execute and deliver an indenture supplemental hereto wherein such successor Trustee shall accept such appointment and which (i) shall contain such provisions as shall be necessary or desirable to transfer and confirm to, and to vest in, such successor Trustee 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, (ii) if the retiring 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 retiring Trustee with respect to the Securities of that or those series as to which the retiring Trustee is not retiring shall continue to be vested in the retiring Trustee, and (iii) 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; but, 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.

(c) No successor Trustee shall accept its appointment unless at the time of such acceptance such successor Trustee shall be qualified and eligible under the Trust Indenture Act.

(d) The Company shall give, or cause to be given, notice of each resignation and each removal of the Trustee with respect to the Securities of any series and each appointment of a successor Trustee with respect to the Securities of any series in the manner provided for notices to the Holders of Securities in Section 1.6. Each notice shall include the name of the successor Trustee with respect to the Securities of such series and the address of its Corporate Trust Office.

Section 6.11. ELIGIBILITY; DISQUALIFICATION. There shall at all times be a Trustee hereunder with respect to each series of Securities (which need not be the same Trustee for all series). Each Trustee hereunder shall be eligible to act as trustee under Section 310(a)(1) of the Trust Indenture Act and shall have a combined capital and surplus of at least \$100,000,000. If such corporation publishes reports of condition at least annually, pursuant to law or the requirements of federal, state, territorial or District of Columbia 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 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.

If the Trustee has or shall acquire a conflicting interest within the meaning of the Trust Indenture Act, the Trustee shall either eliminate such interest or resign, to the extent and in the manner provided by, and subject to the provisions of, the Trust Indenture Act and this Indenture.

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 or acquiring all or substantially all of the corporate trust business of the Trustee, shall be the successor of the Trustee hereunder, provided 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 by merger, conversion or consolidation to, or by succession to or acquisition of all or substantially all of the corporate trust business of, 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. APPOINTMENT OF AUTHENTICATING AGENT. The Trustee 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 original issue exchange, registration of transfer or partial redemption thereof, 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. Any such appointment shall be evidenced by an instrument in writing signed by a Responsible Officer of the Trustee, a copy of which instrument shall be promptly furnished to the Company. 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, except as may otherwise be provided pursuant to Section 3.1, shall at all times be a bank or trust company or corporation organized and doing business and in good standing under the laws of the United States of America or of any State or the District of Columbia, authorized under such laws to act as Authenticating Agent, having a combined capital and surplus of not less than \$1,500,000 and subject to supervision or examination by Federal or State authorities. If such Authenticating Agent publishes reports of condition at least annually, pursuant to law or the requirements of the aforesaid 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. In case 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 or acquiring 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 further act on the part of the Trustee or the Authenticating Agent.

An Authenticating Agent for any series of Securities may at any time resign by giving written notice of resignation to the Trustee for such series and to the Company. The Trustee for any series of Securities may at any time terminate the agency of an Authenticating Agent by giving written notice of termination to such Authenticating Agent and 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 for such series may appoint a successor Authenticating Agent which shall be acceptable to the Company and shall give notice of such appointment to all Holders of Securities of the series with respect to which such Authenticating Agent will serve in the manner set forth in Section 1.6. 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 if originally named as an Authenticating Agent herein. 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 such reasonable compensation as the Company and such Authenticating Agent agree in writing from time to time including reimbursement of its reasonable expenses 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 or in lieu of the Trustee's certificate of authentication, an alternate certificate of authentication substantially in the following form:

This is one of the [Securities] [of the series designated herein and] referred to in the within-mentioned Indenture.

The Bank of New York Mellon Trust Company, N.A., **as Trustee**

By _____
as Authenticating Agent

By _____
Authorized Signatory

ARTICLE VII

CONSOLIDATION, MERGER OR SALE BY THE COMPANY

Section 7.1. CONSOLIDATION, MERGER OR SALE OF ASSETS. The Company may not merge or consolidate with or into any other Person, in a transaction in which it is not the surviving corporation, or sell, convey, transfer or otherwise dispose of all or substantially all of its assets to any Person, unless (i) surviving or transferee Person is organized and existing under the laws of the United States or a State thereof and such Person expressly assumes by supplemental indenture all the obligations of the Company under each series of Securities and under this Indenture, (ii) immediately thereafter, giving effect to such merger or consolidation, or such sale, conveyance, transfer or other disposition, no Default or Event of Default shall have occurred and be continuing and (iii) the Company shall have delivered to the Trustee an Officer's Certificate and an Opinion of Counsel each stating that such merger, consolidation, sale, conveyance, transfer or other disposition complies with this Article and that all conditions precedent herein provided for relating to such transaction have been complied with. In the event of the assumption by a successor Person of the obligations of the Company, such successor Person shall succeed to and be substituted for the Company hereunder and under each series of Securities and all such obligations of the Company shall terminate.

ARTICLE VIII

SUPPLEMENTAL INDENTURES

Section 8.1. SUPPLEMENTAL INDENTURES WITHOUT CONSENT OF HOLDERS. Without the consent of any Holders, the Company and the Trustee, at any time and from time to time, may enter into indentures supplemental hereto for any of the following purposes:

- (1) to evidence the succession of another Person to the Company and the assumption by any such successor of the covenants and obligations of the Company herein and in Securities (with such changes herein and therein as may be necessary or advisable to reflect such Person's legal status, if such Person is not a corporation); or
- (2) to add to the covenants of the Company for the benefit of the Holders of all or any series of Securities (and if such covenants are to be for the benefit of less than all series of Securities, stating that such covenants are expressly being included solely for the benefit of such series) or to surrender any right or power herein conferred upon the Company or to comply with any requirement of the Commission or otherwise in connection with the qualification of this Indenture under the Trust Indenture Act or otherwise; or
- (3) to add any additional Events of Default with respect to all or any series of Securities; or
- (4) to add to or change any of the provisions of this Indenture to such extent as shall be necessary to facilitate or provide for the issuance of Securities in global form in addition to or in place of Securities in certificated form; or
- (5) to change or eliminate any of the provisions of this Indenture, provided that any such change or elimination shall become effective only with respect to Securities which have not been issued as of the execution of such supplemental indenture or when there is no Security Outstanding of any series created prior to the execution of such supplemental indenture which is entitled to the benefit of such provision; or
- (6) to add guarantees with respect to all or any series of Securities; or
- (7) to convey, transfer, assign, mortgage or pledge any property to or with the Trustee; or
- (8) to supplement any of the provisions of this Indenture to such extent as shall be necessary to permit or facilitate the defeasance and discharge of any series of Securities pursuant to Sections 4.1, 4.4, and 4.5; provided that any such action shall not adversely affect the interests of the Holders of Securities of such series or any other series of Securities in any material respect; or
- (9) to establish the form or terms of Securities of any series as permitted by Sections 2.1 and 3.1; or
- (10) to provide for the delivery of indentures supplemental hereto or the Securities of any series in or by means of any computerized, electronic or other medium, including without limitation by computer diskette; or

(11) to evidence and provide for the acceptance of appointment hereunder by a successor or separate Trustee with respect to the Securities of one or more series and/or 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 the requirements of Article VI; or

(12) to correct or supplement any provision herein which may be inconsistent with any other provision herein or to cure any ambiguity or omission or to correct any mistake; or

(13) to make any other provisions with respect to matters or questions arising under this Indenture, provided such action shall not adversely affect the interests of the Holders of Securities of any series in any material respect.

Section 8.2. WITH CONSENT OF HOLDERS. Without prior notice to any Holder but with the written consent of the Holders of a majority of the aggregate principal amount of the Outstanding Securities of each series adversely affected by such supplemental indenture (with the Securities of each series voting as a class), the Company and the Trustee may enter into an indenture or indentures supplemental hereto to add any provisions to or to change or eliminate any provisions of this Indenture or of any other indenture supplemental hereto or to modify the rights of the Holders of Securities of each such series; provided, however, that without the consent of the Holder of each Outstanding Security of such series adversely affected thereby, a supplemental indenture under this Section may not:

(1) change the Stated Maturity of the principal of, or any installment of principal of or interest on, any Security of such series, or reduce the principal amount thereof or the rate of interest thereon or any premium payable upon the redemption thereof, or reduce the amount of the principal of an Original Issue Discount Security or Indexed Security that would be due and payable upon a declaration of acceleration of the Maturity thereof pursuant to Section 5.2, or change any Place of Payment where, or the coin or currency in which any Securities of such series or any premium or the interest thereon is payable, or impair the right to institute suit for the enforcement of any such payment on or after the Stated Maturity thereof (or, in the case of redemption, on or after the Redemption Date);

(2) 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;

(3) except to the extent provided in Section 8.1(11), make any change in Section 5.7 or this 8.2 except to increase any percentage or to provide that certain other provisions of this Indenture cannot be modified or waived except with the consent of the Holders of each Outstanding Security of such series affected thereby, provided, however, that this clause shall not be deemed to require the consent of any Holders with respect to changes in the references to the "Trustee" and concomitant changes in this Section, in accordance with the requirements of Sections 6.10(b) and 8.1(11); or

- (4) modify the ranking or priority of the Securities of such series.

For the purposes of this Section 8.2, if the Securities of any series are issuable upon the exercise of warrants, any holder of an unexercised and unexpired warrant with respect to such series shall not be deemed to be a Holder of Outstanding Securities of such series in the amount issuable upon the exercise of such warrants.

A supplemental indenture which changes or eliminates any covenant or other provision of this Indenture which has expressly been included solely for the benefit of one or more particular series of Securities, or which 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 is not necessary under this Section 8.2 for the Holders to consent to the particular form of any proposed supplemental indenture, but it is sufficient if they consent to the substance thereof.

Section 8.3. COMPLIANCE WITH TRUST INDENTURE ACT. Every amendment to this Indenture or the Securities of one or more series shall be set forth in a supplemental indenture that complies with the Trust Indenture Act as then in effect.

Section 8.4. EXECUTION OF SUPPLEMENTAL INDENTURES. In executing, or accepting the additional trusts created by, any supplemental indenture permitted by this Article or the modification thereby of the trusts created by this Indenture, the Trustee shall be entitled to receive, and shall be fully protected in relying upon an Officer's Certificate and Opinion of Counsel stating that all conditions precedent to the execution of such supplemental indenture have been satisfied and an Opinion of Counsel stating that the execution of such supplemental indenture is authorized or permitted by this Indenture and that such supplemental indenture is the legal, valid and binding obligation of the Company. The Trustee may, but shall not be obligated to, enter into any such supplemental indenture which adversely affects the Trustee. The Trustee shall enter into any such supplemental indenture presented to it by the Company in compliance with this Article VIII if such supplemental indenture does not adversely affect the Trustee, as determined in its sole discretion. In formulating its opinion on such matters the Trustee shall be entitled to rely on such evidence as it deems appropriate, which may be or include, without limitation, reliance solely on an opinion or advice of its counsel.

Section 8.5. EFFECT OF SUPPLEMENTAL INDENTURES. Upon the execution of any supplemental indenture under this Article, this Indenture shall be modified in accordance therewith, and such supplemental indenture shall form a part of this Indenture for all purposes; and every Holder of Securities of the applicable series theretofore or thereafter authenticated and delivered hereunder and shall be bound thereby; provided that if such supplemental indenture makes any of the changes described in clauses (1) through (4) of the first proviso to Section 8.2, such supplemental indenture shall bind each Holder of a Security of the applicable series who has consented to it and every subsequent Holder of such Security or any part thereof.

Section 8.6. 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 of any series so modified as to conform, in the opinion of the Trustee and the Company, to any such supplemental indenture may be prepared and executed by the Company and authenticated and delivered by the Trustee in exchange for Outstanding Securities of such series.

ARTICLE IX

COVENANTS

Section 9.1. PAYMENT OF PRINCIPAL, PREMIUM, IF ANY, AND INTEREST. The Company covenants and agrees for the benefit of the Holders of each series of Securities that it will duly and punctually pay the principal of, premium, if any, and interest on the Securities of that series in accordance with the terms of the Securities of such series, and this Indenture. An installment of principal, premium, if any, or interest shall be considered paid on the date it is due if the Trustee or Paying Agent holds on that date money designated for and sufficient to pay the installment.

Section 9.2. MAINTENANCE OF OFFICE OR AGENCY. If Securities of a series are issued as Registered Securities, the Company will maintain in each Place of Payment for any series of Securities an office or agency where Securities of that series may be presented or surrendered for payment, where Securities of that series may be surrendered for registration of transfer or exchange and where notices and demands to or upon the Company in respect of the Securities of that series and this Indenture may be served. The Company will give prompt written notice to the Trustee of the location, and any change in the location, of any such office or agency. If at any time the Company shall fail to maintain any such required office or agency or shall fail to furnish the Trustee with the address thereof, such presentations, surrenders, notices and demands may be made or served at the Corporate Trust Office of the Trustee, and the Company hereby appoints the Trustee as its agent to receive all such presentations, surrenders, notices and demands (provided, however, that the foregoing appointment shall not impose or imply any obligation on the part of the Trustee to maintain any office for any such purposes other than the Corporate Trust Office.)

Subject to the preceding paragraphs, the Company may also from time to time designate one or more other offices or agencies where the Securities of one or more series may be presented or surrendered for any or all such purposes and may from time to time rescind such designations; provided, however, that no such designation or rescission shall in any manner relieve the Company of its obligation to maintain an office or agency in each Place of Payment for Securities of any series for such purposes. The Company will give prompt written notice to the Trustee of any such designation or rescission and of any change in the location of any such other office or agency.

Unless otherwise specified as contemplated by Section 3.1, the Trustee shall initially serve as Paying Agent. The Paying Agent may make reasonable rules not inconsistent herewith for the performance of its functions.

Section 9.3. MONEY FOR SECURITIES TO BE HELD IN TRUST; UNCLAIMED MONEY. If the Company shall at any time act as its own Paying Agent with respect to any series of Securities, it will, on or before each due date of the principal of, premium, if any, or interest on any of the Securities of that series, segregate and hold in trust for the benefit of the Persons entitled thereto a sum sufficient to pay the principal, premium, if any, or interest so becoming due until such sums shall be paid to such Persons or otherwise disposed of as herein provided and will promptly notify the Trustee in writing of any 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 of or any premium or interest on any Securities of that series, deposit with a Paying Agent a sum sufficient to pay such amount, such sum to be held as provided by the Trust Indenture Act, and (unless such Paying Agent is the Trustee) the Company will promptly notify the Trustee of any failure so to act.

If the Company is not acting as its own Paying Agent, the Company will cause each Paying Agent for any series of Securities other than the Trustee 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:

- (1) hold all sums held by it for the payment of the principal of, premium, if any, or interest on Securities of that series in trust for the benefit of the Persons entitled thereto until such sums shall be paid to such Persons or otherwise disposed of as herein provided;
- (2) give the Trustee notice of any Default by the Company (or any other obligor upon the Securities of that series) in the making of any payment of principal, premium, if any, or interest on the Securities of that series; and
- (3) 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.

Notwithstanding anything in this Section 9.3 to the contrary, the Company may at any time, for the purpose of obtaining the satisfaction and discharge of this Indenture, or with respect to one or more 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, 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.

Subject to applicable abandoned property laws, any money deposited with the Trustee or any Paying Agent, or then held by the Company, in trust for the payment of any principal, premium or interest or other amounts on any Security of any series and remaining unclaimed for two years after such principal, premium, if any, or interest or other amounts has become due and payable shall be paid to the Company (including interest income on such funds, if any), or (if then held by the Company) shall be discharged from such trust; and the Holder of such Security, shall thereafter, as an unsecured general creditor, look only to the Company for payment thereof, 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.

Section 9.4. CORPORATE EXISTENCE. Subject to Article VII, the Company will at all times do or cause to be done all things necessary to preserve and keep in full force and effect its corporate existence.

Section 9.5. REPORTS BY THE COMPANY. The Company covenants, at any time at which there are Outstanding Securities of any series issued under this Indenture:

(a) to 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, as amended; or, if the Company is not required to file information, documents or reports pursuant to either of such sections, then to 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, as amended, 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) to file with the Trustee and the Commission, in accordance with the 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 provided for in this Indenture, as may be required from time to time by such rules and regulations; and

(c) to transmit to all Holders of Securities within 30 days after the filing thereof with the Trustee, in the manner and to the extent provided in section 313(c) of the Trust Indenture Act, such summaries of any information, documents and reports required to be filed by the Company pursuant to subsections (a) and (b) of this Section 9.5, as may be required by rules and regulations prescribed from time to time by the Commission.

Section 9.6. ANNUAL REVIEW CERTIFICATE. At any time at which there are Outstanding Securities of any series issued under this Indenture, the Company covenants and agrees to deliver to the Trustee, within 120 days after the end of each fiscal year of the Company, a brief certificate from the principal executive officer, principal financial officer, or principal accounting officer as to his or her knowledge of whether the Company is in Default under this Indenture. For purposes of this Section 9.6, such compliance shall be determined without regard to any period of grace or requirement of notice provided under this Indenture.

ARTICLE X

REDEMPTION

Section 10.1. **APPLICABILITY OF ARTICLE.** Securities of or within any series which are redeemable in whole or in part before their Stated Maturity shall be redeemable in accordance with their terms and (except as otherwise specified in the applicable Board Resolution or supplemental indenture with respect to such series of Securities, as contemplated by Section 3.1 for Securities of any series) in accordance with this Article.

Section 10.2. **ELECTION TO REDEEM; NOTICE TO TRUSTEE.** The election of the Company to redeem any Securities shall be evidenced by a Board Resolution. In the case of any redemption at the election of the Company of less than all the Securities of any series of the same tenor, the Company shall, at least 60 days (45 days in the case of redemption of all Securities of any series or of any series with the same (i) Stated Maturity, (ii) period or periods within which, price or prices at which and terms and conditions upon which such Securities may or shall be redeemed or purchased, in whole or in part, at the option of the Company or pursuant to any sinking fund or analogous provision or repayable at the option of the Holder and (iii) rate or rates at which such Securities bear interest, if any, or formula pursuant to which such rate or rates accrue (collectively, the “Equivalent Principal Terms”)) prior to the Redemption Date fixed by the Company (unless a shorter notice shall be satisfactory to the Trustee), notify the Trustee of such Redemption Date of the principal amount of Securities of such series to be redeemed and, if applicable, of the tenor of such Securities to be redeemed. In the case of any redemption of Securities of a series (i) prior to the expiration of any restriction on such redemption provided in the terms of such Securities or elsewhere in this Indenture or (ii) pursuant to an election of the Company which is subject to a condition specified in the terms of such Securities, the Company shall furnish the Trustee with an Officer’s Certificate evidencing compliance with such restriction or condition.

Section 10.3. **SELECTION OF SECURITIES TO BE REDEEMED.** If less than all the Securities with Equivalent Principal Terms of any series are to be redeemed (unless all of the Securities of such series and of a specified tenor 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 and which may provide for the selection for redemption of portions (equal to the minimum authorized denomination for Securities of that series with Equivalent Principal Terms or any integral multiple thereof) of the principal amount of Securities of such series with Equivalent Principal Terms 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 Securities selected for partial redemption, the principal amount thereof to be redeemed. If the Securities of a series having different issue dates, interest rates and maturities (whether or not originally issued in a Periodic Offering) are to be redeemed, the Company in its discretion may select the particular Securities or portions thereof to be redeemed and shall notify the Trustee thereof by such time prior to the relevant redemption date or dates as the Company and the Trustee may agree.

For purposes of this Indenture, unless the context otherwise requires, all provisions relating to the redemption of Securities shall relate, in the case of any Securities redeemed or to be redeemed only in part, to the portion of the principal amount of such Securities which has been or is to be redeemed.

Section 10.4. NOTICE OF REDEMPTION. Unless otherwise specified as contemplated by Section 3.1, notice of redemption shall be given by first-class mail, postage prepaid, mailed not less than 30 days nor more than 60 days prior to the Redemption Date, unless a shorter period is specified in the Securities to be redeemed, to each Holder of the Securities to be redeemed.

All notices of redemption shall state:

- (1) the Redemption Date;
- (2) the Redemption Price and the amount of accrued interest, if any, to be paid;
- (3) if less than all the Outstanding Securities of a series are to be redeemed, the identification (and, in the case of partial redemption of any Securities, the principal amounts) of the particular Security or Securities to be redeemed;
- (4) in case any Security is to be redeemed in part only, the notice which relates to such Security shall state that on and after the Redemption Date, upon surrender of such Security, the Holder of such Security will receive, without a charge, a new Security or Securities of authorized denominations for the principal amount thereof remaining unredeemed;
- (5) the Place or Places of Payment where such Securities are to be surrendered for payment for the Redemption Price;
- (6) that Securities of the series called for redemption appertaining thereto must be surrendered to the Paying Agent to collect the Redemption Price;
- (7) that, on the Redemption Date, the Redemption Price will become due and payable upon each such Security, or the portion thereof, to be redeemed and, if applicable, that interest thereon will cease to accrue on and after said date;
- (8) that the redemption is for a sinking fund, if such is the case;
- (9) the CUSIP number and/or ISIN, if any, of such Securities.

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, by the Trustee in the name and at the expense of the Company (provided that the Company prepare and provide to the Trustee the form of such notice, or, if acceptable to the Trustee, provides sufficient information to enable the Trustee to prepare such notice, in each case on a timely basis.)

Section 10.5. 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 9.3) an amount of money in the currency or currencies (including currency units or composite currencies) in which the Securities of such series are payable (except as otherwise specified pursuant to Section 3.1 for the Securities of such series) sufficient to pay on the Redemption Date the Redemption Price of, and (unless the Redemption Date shall be an Interest Payment Date) interest accrued to the Redemption Date on, all Securities or portions thereof which are to be redeemed on that date.

Unless any Security by its terms prohibits any sinking fund payment obligation from being satisfied by delivering and crediting Securities (including Securities redeemed otherwise than through a sinking fund), the Company may deliver such Securities to the Trustee for crediting against such payment obligation in accordance with the terms of such Securities and this Indenture.

Section 10.6. 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 and accrued interest) such Securities shall cease to bear interest and such Securities shall cease from and after the Redemption Date to be entitled to any benefit or security under this Indenture, and the Holders thereof shall have no right in respect of such Securities except the right to receive the Redemption Price thereof and unpaid interest to the Redemption Date. Except as provided in the next succeeding paragraph, upon surrender of any such Security for redemption in accordance with said notice, such Security shall be paid by the Company at the Redemption Price, together with accrued interest, if any, to the Redemption Date; provided, however, that, unless otherwise specified as contemplated by Section 3.1, installments of interest on Registered Securities whose Stated Maturity is on or prior to the Redemption Date shall be payable to the Holders of such Securities, or one or more Predecessor Securities, registered as such at the close of business on the relevant Record Dates according to their terms and the provisions of Section 3.7.

If any Security called for redemption shall not be so paid upon surrender thereof for redemption, the principal (and premium, if any) shall, until paid, bear interest from the Redemption Date at the rate prescribed therefor in such Security.

Section 10.7. SECURITIES REDEEMED IN PART. Upon surrender of a Security that is redeemed only in part at any Place of Payment therefor (with, if the Company or the Trustee so require, 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), the Company shall execute and the Trustee shall authenticate and deliver to the Holder of that Security, without service charge, a new Security or Securities of the same series, having the same form, terms and Stated Maturity, in any authorized denomination equal in aggregate principal amount to the unredeemed portion of the principal amount of the Security surrendered.

ARTICLE XI

SINKING FUNDS

Section 11.1. **APPLICABILITY OF ARTICLE.** The provisions of this Article shall be applicable to any sinking fund for the retirement of Securities of a series except as otherwise specified as contemplated by Section 3.1 for Securities of such series.

The minimum amount of any sinking fund payment provided for by the terms of Securities of any series is herein referred to as a “mandatory sinking fund payment,” and any payment in excess of such minimum amount provided for by the terms of Securities of any series is herein referred to as an “optional sinking fund payment.” If provided for by the terms of Securities of any series, the cash amount of any sinking fund payment may be subject to reduction as provided in Section 11.2. Each sinking fund payment shall be applied to the redemption of Securities of any series as provided for by the terms of Securities of such series.

Section 11.2. **SATISFACTION OF SINKING FUND PAYMENTS WITH SECURITIES.** The Company (i) may deliver Outstanding Securities of a series (other than any previously called for redemption) and (ii) may apply as a credit Securities of a series which have been redeemed either at the election of the Company pursuant to the terms of such Securities or through the application of permitted optional sinking fund payments pursuant to the terms of such Securities, in each case in satisfaction of all or any part of any sinking fund payment with respect to the Securities of such series required to be made pursuant to the terms of such Securities as provided for by the terms of such series; provided that such Securities have not been previously so credited. Such Securities shall be received and credited for such purpose by the Trustee at the Redemption Price specified in such Securities for redemption through operation of the sinking fund and the amount of such sinking fund payment shall be reduced accordingly.

Section 11.3. **REDEMPTION OF SECURITIES FOR SINKING FUND.** Not less than 60 days prior to each sinking fund payment date for any series of Securities, the Company will deliver to the Trustee an Officer’s Certificate specifying the amount of the next ensuing sinking fund payment for that series pursuant to the terms of that series, the portion thereof, if any, which is to be satisfied by payment of cash and the portion thereof, if any, which is to be satisfied by delivering and crediting Securities of that series pursuant to Section 11.2 and will also deliver to the Trustee any Securities to be so delivered. Not less than 30 days before each such sinking fund payment date the Trustee shall select the Securities to be redeemed upon such sinking fund payment date in the manner specified in Section 10.3 and cause notice of the redemption thereof to be given in the name of and at the expense of the Company in the manner provided in Section 10.4. Such notice having been duly given, the redemption of such Securities shall be made upon the terms and in the manner stated in Sections 10.6 and 10.7.

This Indenture may be executed in any number of counterparts, each of which shall be an original, but such counterparts shall together constitute but one instrument.

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

AKOUSTIS TECHNOLOGIES, INC.

By: /s/ John T. Kurtzweil

Name: John T. Kurtzweil

Title: Chief Financial Officer

**THE BANK OF NEW YORK MELLON TRUST COMPANY,
N.A., as Trustee**

By: /s/ R. Tarnas

Name: R. Tarnas

Title: Vice President

AKOUSTIS TECHNOLOGIES, INC.,

AND

THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A.,

as Trustee

FIRST SUPPLEMENTAL INDENTURE

Dated as of October 23, 2018

To

INDENTURE

Dated as of October 23, 2018

6.5% CONVERTIBLE SENIOR NOTES DUE 2023

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Exhibit A – FORM OF NOTE

FIRST SUPPLEMENTAL INDENTURE dated as of October 23, 2018 (the “*First Supplemental Indenture*”) between Akoustis Technologies, Inc., a Delaware corporation, as issuer (the “*Company*”), and The Bank of New York Mellon Trust Company, N.A., a national banking association, as trustee (the “*Trustee*”).

WHEREAS, the Company has executed and delivered to the Trustee an Indenture dated as of October 23, 2018 (the “*Base Indenture*”) and, as supplemented by this First Supplemental Indenture, the “*Indenture*”) providing for the issuance from time to time of one or more series of the Company’s debt securities;

WHEREAS, Section 3.1 of the Base Indenture provides that the Company and the Trustee may enter into an indenture supplemental to the Base Indenture to establish the form or terms of Securities of any series;

WHEREAS, the Company has duly authorized the creation of an issue of its 6.5% Convertible Senior Notes due 2023 (the “*Notes*”), having the terms, tenor, amount and other provisions hereinafter set forth, and, to provide therefor, the Company has duly authorized the execution and delivery of this First Supplemental Indenture; and

WHEREAS, all things necessary to make the Notes, when the Notes are duly executed by the Company and authenticated and delivered hereunder and duly issued by the Company, the valid obligations of the Company, and to make this First Supplemental Indenture a valid and binding agreement of the Company, in accordance with their and its terms, have been done and performed, and the execution of this First Supplemental Indenture and the issue hereunder of the Notes have in all respects been duly authorized,

NOW, THEREFORE, THIS FIRST SUPPLEMENTAL INDENTURE WITNESSETH:

For and in consideration of the premises and the purchase of the Notes by the holders thereof, it is mutually covenanted and agreed, for the equal and proportionate benefit of all holders of the Notes, as follows:

ARTICLE 1.

SCOPE OF FIRST SUPPLEMENTAL INDENTURE, DEFINITIONS AND INCORPORATION BY REFERENCE

Section 1.01 Scope of First Supplemental Indenture. This First Supplemental Indenture supplements the provisions of the Base Indenture, to which provisions reference is hereby made. The changes, modifications and supplements to the Base Indenture effected by this First Supplemental Indenture shall be applicable only with respect to, and shall only govern the terms of, the Notes, which may be issued from time to time, and shall not apply to any other Securities that may be issued under the Base Indenture unless a supplemental indenture with respect to such other Securities specifically incorporates such changes, modifications and supplements. Unless the context otherwise requires, section references are to this First Supplemental Indenture rather than the Base Indenture. For all purposes under the Base Indenture, the Notes shall constitute a single series of Securities. The provisions of this First Supplemental Indenture shall supersede any conflicting provisions in the Base Indenture with respect to the Notes.

Section 1.02 Definitions. Each term used herein which is defined in the Base Indenture has the meaning assigned to such term in the Base Indenture unless otherwise specifically defined herein, in which case the definition set forth herein shall govern for purposes of the Notes.

“*Acquired Debt*” means, with respect to any specified Person, (i) Indebtedness of any other Person existing at the time such other Person is merged with or into or became a Subsidiary of such specified Person, and (ii) Indebtedness secured by a Lien encumbering any real property or fixed assets acquired by such specified Person.

“*Affiliate*” of any specified Person means any other Person directly or indirectly controlling or controlled by or under direct or indirect common control with such specified Person. For purposes of the Indenture, “control” (including, with correlative meanings, the terms “controlling”, “controlled by” and “under common control with”), as used with respect to any Person, means the possession, directly or indirectly, of the power to direct or cause the direction of the management or policies of such Person, whether through the ownership of voting securities, by agreement or otherwise; provided, that, solely for the purposes of this definition of “Affiliate,” beneficial ownership of 10% or more of the Voting Stock of a Person shall be deemed to be control. Notwithstanding the foregoing, no Holder shall be deemed, for purposes of the Indenture, to be an Affiliate of the Company or any of its Subsidiaries solely by reason of holding the Notes.

“*Agent*” means any Registrar, Paying Agent, Conversion Agent or co-registrar.

“*Applicable Procedures*” means, with respect to a Depository, as to any matter at any time, the policies and procedures of such Depository, if any, that are applicable to such matter at such time.

“*Bankruptcy Law*” means Title 11, U.S. Code or any similar federal or state law for the relief of debtors.

“*Beneficial Owner*” has the meaning assigned to such term in Rule 13d-3 and Rule 13d-5 under the Exchange Act, except that in calculating the beneficial ownership of any particular “person” (as that term is used in Section 13(d)(3) of the Exchange Act), such “person” will be deemed to have beneficial ownership of all securities that such “person” has the right to acquire by conversion or exercise of other securities, whether such right is currently exercisable or is exercisable only after the passage of time. For purposes of this definition, “Beneficially Owns” and “Beneficially Owned” shall have a correlative meaning.

“*Board of Directors*” means:

- (i) with respect to a corporation, the board of directors of the corporation or any committee thereof duly authorized to act on behalf of such board;
- (ii) with respect to a partnership, the Board of Directors of the general partner of the partnership;
- (iii) with respect to a limited liability company, the managing member or members, the manager or any controlling committee or board of managers or managing members thereof; and
- (iv) with respect to any other Person, the board or committee of such Person serving a similar function.

“*Business Day*” means any day other than a Legal Holiday.

“*Capital Lease Obligation*” means, at the time any determination thereof is to be made, the amount of the liability in respect of a capital lease that would at such time be required to be capitalized on a balance sheet prepared in accordance with GAAP, and the Stated Maturity thereof shall be the date of the last payment of rent or any other amount due under such lease prior to the first date upon which such lease may be prepaid by the lessee without payment of a penalty.

“*Capital Stock*” means:

- (i) in the case of a corporation, corporate stock;
- (ii) in the case of an association or business entity, any and all shares, interests, participations, rights or other equivalents (however designated) of corporate stock;
- (iii) in the case of a partnership or limited liability company, partnership interests (whether general or limited) or membership interests; and
- (iv) any other interest or participation that confers on a Person the right to receive a share of the profits and losses of, or distributions of assets of, the issuing Person, but excluding from all of the foregoing any debt securities convertible into Capital Stock, whether or not such debt securities include any right of participation with Capital Stock.

“Cash Equivalents” means and of the following types of property:

- (i) United States dollars,
- (ii) readily marketable direct obligations of the government of the United States or any agency or instrumentality thereof, or obligations the timely payment of principal and interest on which are fully and unconditionally guaranteed by the government of the United States or any state or municipality thereof, in each case so long as such obligation has an investment grade rating by S&P and Moody’s;
- (iii) commercial paper maturing no more than one year from the date of creation thereof and rated at least P-1 (or the then equivalent grade) by Moody’s and A-1 (or the then equivalent grade) by S&P, or carrying an equivalent rating by a nationally recognized rating agency if at any time neither Moody’s and S&P shall be rating such obligations;
- (iv) insured certificates of deposit or bankers’ acceptances of, or time deposits with any commercial bank that (w) is a member of the Federal Reserve System, (x) issues (or the parent of which issues) commercial paper rated as described in clause (iii) above, (y) is organized under the laws of the United States or of any state thereof and (z) has combined capital and surplus of at least \$500,000,000;
- (v) readily marketable general obligations of any corporation organized under the laws of any state of the United States, payable in the United States, expressed to mature not later than 12 months following the date of issuance thereof and rated A or better by S&P or A2 or better by Moody’s; and
- (vi) readily marketable shares of investment companies or money market funds that, in each case, invest solely in the foregoing Investments described in clauses (i) through (vi) above.

“Closing Sale Price” means, as determined by us, the closing sale price per share (or if no closing sale price is reported, the average of the bid and ask prices or, if more than one in either case, the average of the average bid and the average ask prices) on that date as reported in composite transactions for the principal U.S. national or regional securities exchange on which the Common Stock is traded. If the Common Stock is not listed for trading on a U.S. national or regional securities exchange on the relevant date, the “Closing Sale Price” will be the last quoted bid price for the Common Stock in the over-the-counter market on the relevant date as reported by OTC Markets Group Inc. or a similar organization. If the Common Stock is not so quoted, the “Closing Sale Price” will be the average of the mid-point of the last bid and ask prices for the Common Stock on the relevant date from each of at least three nationally recognized independent investment banking firms selected by the Company for this purpose.

“Common Equity” of any Person means Capital Stock of such Person that is generally entitled (a) to vote in the election of directors of such Person or (b) if such Person is not a corporation, to vote or otherwise participate in the selection of the governing body, partners, managers or others that will control the management or policies of such Person.

“Common Stock” means the Common Stock of the Company, par value \$0.001 per share, as it exists on the date of the Indenture and any shares of any class or classes of Capital Stock of the Company resulting from any reclassification or reclassifications thereof and which have no preference in respect of dividends or of amounts payable in the event of any voluntary or involuntary liquidation, dissolution or winding-up of the Company and which are not subject to redemption by the Company; provided, however, that if at any time there shall be more than one such resulting class, the shares of each such class then so issuable on conversion of the Notes shall be substantially in the proportion which the total number of shares of such class resulting from all such reclassifications bears to the total number of shares of all such classes resulting from all such reclassifications.

“Company” means Akoustis Technologies, Inc., a Delaware corporation, and any and all successors thereto in accordance with the Indenture, and thereafter “Company” shall mean such successor Company.

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

“*Consolidated Net Income*” means, with respect to any specified Person for any period, the aggregate of the Net Income of such Person and its Subsidiaries for such period, on a consolidated basis, determined in accordance with GAAP; *provided* that:

(i) the Net Income (but not loss) of any Person that is not a Subsidiary or that is accounted for by the equity method of accounting will be included only to the extent of the amount of dividends or similar distributions paid in cash to the specified Person or a Subsidiary of the Person;

(ii) the Net Income of any Subsidiary will be excluded to the extent that the declaration or payment of dividends or similar distributions by that Subsidiary of that Net Income is not at the date of determination permitted without any prior governmental approval (that has not been obtained) or, directly or indirectly, by operation of the terms of its charter or any agreement, instrument, judgment, decree, order, statute, rule or governmental regulation applicable to that Subsidiary or its stockholders;

(iii) the cumulative effect of a change in accounting principles will be excluded; and

(iv) the Net Income of any Person acquired during the specified period for any period prior to the date of acquisition will be excluded.

“*Conversion Price*” means as of any time, \$1,000, *divided by* the Conversion Rate as of such time.

“*Corporate Trust Office*” means (a) with respect to the Trustee, the office of the Trustee at which at any time its corporate trust business shall be administered, which office at the date hereof is located at 10161 Centurion Parkway N., Jacksonville, Florida 32256, Attention: Corporate Trust Administration, or such other address as the Trustee may designate from time to time by notice to the Holders and the Company, or the corporate trust office of any successor Trustee (or such other address as such successor Trustee may designate from time to time by notice to the Holders and the Company) and (b) with respect to the Paying Agent, the office of the Paying Agent at which at any time its business shall be administered, which office at the date hereof is located at 10161 Centurion Parkway N., Jacksonville, Florida 32256, Attention: Corporate Trust Administration, or such other address as the Paying Agent may designate from time to time by notice to the Holders and the Company, or the office of any successor Paying Agent (or such other address as such successor Paying Agent may designate from time to time by notice to the Holders and the Company).

“*Credit Facilities*” means, one or more debt facilities or commercial paper facilities, in each case, with banks or other institutional lenders providing for revolving credit loans, term loans, receivables financing (including through the sale of receivables to such lenders or to special purpose entities formed to borrow from such lenders against such receivables) or letters of credit, in each case, as amended, restated, modified, renewed, refunded, replaced (whether upon or after termination or otherwise) or refinanced (including by means of sales of debt securities to institutional investors) in whole or in part from time to time.

“*Daily VWAP*” means for each Trading Day during any calculation period under the Indenture, the per share volume-weighted average price of the Common Stock as displayed under the heading “Bloomberg VWAP” on Bloomberg page “AKTS <equity> AQR” (or its equivalent successor if such page is not available) in respect of the period from the scheduled open of trading until the scheduled close of trading of the primary trading session on such Trading Day (or if such volume-weighted average price is unavailable, the market value of one share of the Common Stock on such Trading Day determined, using a volume-weighted average method, by a nationally recognized independent investment banking firm retained for this purpose by the Company). The “Daily VWAP” will be determined without regard to after-hours trading or any other trading outside of the regular trading session trading hours.

“*Default*” or “*default*” means any event that is, or with the passage of time or the giving of notice or both would be, an Event of Default.

“*Depository*” means The Depository Trust Company until a successor Depository shall have become such pursuant to the applicable provisions of the Indenture, and thereafter “*Depository*” shall mean such successor Depository.

“*Disqualified Stock*” means any Capital Stock that, by its terms (or by the terms of any security into which it is convertible or for which it is exchangeable, in each case, at the option of the holder of the Capital Stock), or upon the happening of any event, matures or is mandatorily redeemable, pursuant to a sinking fund obligation or otherwise, or redeemable at the option of the holder thereof, in whole or in part, on or prior to the date that is 91 days after the date on which the Notes mature. Notwithstanding the preceding sentence, any Capital Stock that would constitute Disqualified Stock solely because the holders of the Capital Stock have the right to require the Company to repurchase such Capital Stock upon the occurrence of a Fundamental Change or an Asset Sale will not constitute Disqualified Stock if the terms of such Capital Stock provide that the Company may not repurchase or redeem any such Capital Stock pursuant to such provisions unless such repurchase or redemption complies with Section 5.07 of this First Supplemental Indenture. The amount of Disqualified Stock deemed to be outstanding at any time for purposes of hereof shall be the maximum amount that the Company and its Subsidiaries may become obligated to pay upon the maturity of, or pursuant to any mandatory redemption provisions of, such Disqualified Stock, exclusive of accrued dividends.

“*Effective Date*” means the date on which any Fundamental Change, Qualifying Fundamental Change, Share Exchange Event, or any of the transactions described in Section 9.04 occurs or becomes effective.

“*Eligible Market*” means The New York Stock Exchange, Inc., The NASDAQ Global Market, The NASDAQ Global Select Market or The NASDAQ Capital Market.

“*Equity Interests*” means Capital Stock and all warrants, options or other rights to acquire Capital Stock (but excluding any debt security that is convertible into, or exchangeable for, Capital Stock).

“*Ex-Dividend Date*” means the first date on which shares of the Common Stock trade on the applicable exchange or in the applicable market, regular way, without the right to receive the issuance, dividend or distribution in question, from the Company or, if applicable, from the seller of Common Stock on such exchange or market (in the form of due bills or otherwise) as determined by such exchange or market. For the avoidance of doubt, any alternative trading convention on the applicable exchange or market in respect of shares of the Common Stock under a separate ticker symbol or CUSIP number will not be considered “regular way” for this purpose.

“*Exchange Act*” means the Securities Exchange Act of 1934, as amended.

“*Existing Indebtedness*” means Indebtedness of the Company and its Subsidiaries in existence on the date of the Indenture, including, without limitation, the Company’s 6.5% Convertible Senior Secured Notes due 2023 in an aggregate principal amount not to exceed \$15.0 million, and all guarantees thereof, issued pursuant to that certain Indenture dated as of May 14, 2018, among the Company, the guarantors named therein, and The Bank of New York Mellon Trust Company, N.A., as trustee and as collateral agent, as amended, restated, supplemented or otherwise modified from time to time.

“*Fair Market Value*” means the value that would be paid by a willing buyer to an unaffiliated willing seller in a transaction not involving distress or necessity of either party, determined in good faith by the Board of Directors of the specified Person (unless otherwise provided in the Indenture).

“*Freely Tradeable*” means, with respect to any shares of Common Stock, shares of Common Stock which, at the time of issuance thereof, (i) are duly authorized, validly issued, fully paid and non-assessable; (ii) are eligible for resale by the recipient without limitation or restriction, including any volume limitations, under state or Federal securities laws or pursuant to an effective Registration Statement; and (iii) do not bear, and are not subject to, any restrictive legend, stop transfer or similar restriction.

“Fundamental Change” shall be deemed to have occurred at the time after the Notes are originally issued if any of the following occurs:

(i) a “person” or “group” within the meaning of Section 13(d) of the Exchange Act, other than the Company, its wholly owned Subsidiaries and the employee benefit plans of the Company and its wholly owned Subsidiaries, files a Schedule TO (or any successor schedule, form or report) or any schedule, form or report under the Exchange Act that discloses that such person or group has become the direct or indirect Beneficial Owner of Common Stock representing more than 50% of the voting power of the Common Stock, unless such beneficial ownership arises solely as a result of a revocable proxy delivered in response to a public proxy or consent solicitation made pursuant to the applicable rules and regulations under the Exchange Act; *provided* that no person or group shall be deemed to be the Beneficial Owner of any securities tendered pursuant to a tender or exchange offer made by or on behalf of such person or group until such tendered securities are accepted for purchase or exchange under such offer;

(ii) the consummation of (x) any recapitalization, reclassification or change of the Common Stock (other than changes resulting from a subdivision or combination or solely a change in par value) as a result of which the Common Stock would be converted into, or exchanged for, stock, other securities, other property or assets; (y) any share exchange, consolidation or merger of the Company pursuant to which the Common Stock will be converted into cash, securities or other property or assets; or (C) any sale, lease or other transfer in one transaction or a series of transactions of all or substantially all of the consolidated assets of the Company and its Subsidiaries, taken as a whole, to any person other than one or more of the Company’s direct or indirect wholly owned Subsidiaries; *provided, however*, that a transaction described in clauses (x) or (y) in which the holders of all classes of the Company’s Common Equity immediately prior to such transaction own, directly or indirectly, more than 50% of all classes of Common Equity of the continuing or surviving corporation or transferee or the parent thereof immediately after such transaction in substantially the same proportions (relative to each other) as such ownership immediately prior to such transaction shall not be a Fundamental Change pursuant to this clause (ii);

(iii) the stockholders of the Company approve any plan or proposal for the liquidation or dissolution of the Company; or

(iv) the Common Stock (or other common stock, American depository receipts, original shares or other Common Equity interests underlying the Notes) ceases to be listed or quoted on any Eligible Market (or any of their respective successors) or an established over-the-counter trading market in the United States;

provided, however, that (x) any event, transaction or series of transactions that constitute a Fundamental Change under both clause (i) and (ii) above (determined without regard to the proviso in clause (ii) above) will be deemed to be a Fundamental Change solely under clause (ii) above; and (y) a transaction or transactions described in clause (i) or clause (ii) above shall not constitute a Fundamental Change if at least 90% of the consideration received or to be received by the common stockholders of the Company, excluding cash payments for fractional shares and cash payments made pursuant to of dissenters’ appraisal rights, in connection with such transaction or transactions consists of shares of common stock, American depository receipts, original shares or other Common Equity interests that are listed or quoted on any of Eligible Markets (or any of their respective successors) or an established over-the-counter trading market in the United States or will be so listed or quoted when issued or exchanged in connection with such transaction or transactions and as a result of such transaction or transactions such consideration becomes Reference Property, excluding cash payments for fractional shares and cash payments made pursuant to dissenters’ appraisal rights (subject to the provisions of Section 9.02(a)). If any transaction in which the Common Stock is replaced by the securities of another entity occurs, following completion of any related Qualifying Fundamental Change Period (or, in the case of a transaction that would have been a Fundamental Change or a Qualifying Fundamental Change but for the clause (y) of the proviso immediately following clause (iv) of the definition thereof, following the effective date of such transaction) references to the Company in this definition shall instead be references to such other entity.

“GAAP” means generally accepted accounting principles in the United States of America as in effect as of the date of the Indenture, including those set forth in (1) the opinions and pronouncements of the Accounting Principles Board of the American Institute of Certified Public Accountants, (2) the statements and pronouncements of the Financial Accounting Standards Board, (3) such other statements by such other entity as approved by a significant segment of the accounting profession and (4) the rules and regulations of the SEC governing the inclusion of financial statements (including pro forma financial statements) in Registration Statements and periodic reports required to be filed pursuant to Section 13 of the Exchange Act, including opinions and pronouncements in staff accounting bulletins and similar written statements from the accounting staff of the SEC.

“Global Notes” means one or more Notes in global form registered in the register in the name of a Depository or a nominee thereof.

“Government Securities” means securities that are direct obligations of, or obligations guaranteed by, the United States of America, and the payment for which the United States pledges its full faith and credit.

“Guarantee” means a guarantee (other than by endorsement of negotiable instruments for collection in the ordinary course of business), direct or indirect, in any manner (including, without limitation, by way of a pledge of assets or through letters of credit or reimbursement agreements in respect thereof), of all or any part of any Indebtedness (whether arising by virtue of partnership arrangements, or by agreements to keep-well, to purchase assets, goods, securities, or services, to take or pay or to maintain financial statement conditions or otherwise).

“Hedging Obligations” means, with respect to any specified Person, the obligations of such Person under (i) interest rate swap agreements (whether from fixed to floating or from floating to fixed), interest rate cap agreements and interest rate collar agreements, (ii) other agreements or arrangements designed to manage interest rates or interest rate risk, and (iii) other agreements or arrangements designed to protect such Person against fluctuations in currency exchange rates or commodity prices.

“Holder” means a Person in whose name a Note is registered.

“Indebtedness” means with respect to any specified Person, any indebtedness of such Person (excluding accrued expenses and trade payables that are not yet overdue by 30 days), whether or not contingent:

- (i) in respect of borrowed money;
- (ii) evidenced by bonds, notes, debentures or similar instruments or letters of credit (or reimbursement agreements in respect thereof);
- (iii) in respect of banker’s acceptances;
- (iv) representing Capital Lease Obligations;
- (v) representing the balance deferred and unpaid of the purchase price of any property or services due more than six months after such property is acquired or such services are completed;
- (vi) representing any Hedging Obligations; if and to the extent any of the preceding items (other than letters of credit and Hedging Obligations) would appear as a liability upon a balance sheet of the specified Person prepared in accordance with GAAP; or
- (vii) all Disqualified Stock.

In addition, the term “Indebtedness” includes all Indebtedness of others secured by a Lien on any asset of the specified Person (whether or not such Indebtedness is assumed by the specified Person) and, to the extent not otherwise included, the Guarantee by or other contingent obligations of the specified Person of any Indebtedness of or relating to or arising from any other Person.

“*Interest*” or “*interest*” means, when used with reference to the Notes, the sum of (i) any interest accrued and unpaid at the Interest Rate pursuant to Section 16.02(a) hereof and (ii) accrued and unpaid Special Interest, if any, pursuant to Section 7.03 hereof.

“*Interest Payment Date*” means February 28, May 31, August 31 and November 30 of each year until the Stated Maturity with the first Interest Payment Date being February 28, 2019.

“*Interest Rate*” means a rate per annum equal to 6.5%.

“*Investments*” means, with respect to any Person, all direct or indirect investments by such Person in other Persons (including Affiliates) in the forms of loans (including Guarantees or other obligations), advances or capital contributions (excluding commission, travel and similar advances to officers and employees made in the ordinary course of business), purchases or other acquisitions for consideration of Indebtedness, Equity Interests or other securities, together with all items that are or would be classified as investments on a balance sheet prepared in accordance with GAAP.

“*Issue Date*” means the date of the first issuance of Notes under the Indenture.

“*Legal Holiday*” means a Saturday, a Sunday or a day on which the Federal Reserve Bank of New York or at a place of payment under the Indenture are authorized by law, regulation or executive order to remain closed. If a payment date is a Legal Holiday at a place of payment under the Indenture, payment may be made at that place on the next succeeding day that is not a Legal Holiday, and no interest shall accrue on such payment for the intervening period, as more fully described at Section 17.04 hereof. If a record date is a Legal Holiday, the record date shall not be affected.

“*Lien*” means, with respect to any asset, any mortgage, lien, pledge, charge, security interest or encumbrance of any kind in respect of such asset, whether or not filed, recorded or otherwise perfected under applicable law (including any conditional sale or other title retention agreement, any lease in the nature thereof, any option or other agreement to sell or give a security interest in and any filing of or agreement to give any financing statement under the Uniform Commercial Code (or equivalent statutes) of any jurisdiction).

“*Majority Holders*” means the Holders of at least 50.01% in aggregate Principal Amount of the Notes at the time then outstanding.

“*Market Disruption Event*” means (i) a failure by the Relevant Stock Exchange to open for trading during its regular trading session or (ii) the occurrence or existence prior to 1:00 p.m., New York City time, on any Scheduled Trading Day for the Common Stock, for more than one half-hour period in the aggregate during regular trading hours, of any suspension or limitation imposed on trading (by reason of movements in price exceeding limits permitted by the Relevant Stock Exchange or otherwise) in the Common Stock or in any options contracts or futures contracts relating to the Common Stock.

“*Material Adverse Effect*” means (a) a material adverse change in, or a material adverse effect upon, the operations, business, properties or condition (financial or otherwise) of the Company and its Subsidiaries, taken as a whole; (b) a material impairment of the ability of the Company or any of its Subsidiaries to perform in any material respect its obligations under any Transaction Document; or (c) a material adverse effect upon the legality, validity, binding effect or enforceability of any material provision of any Transaction Document.

“*Moody’s*” means Moody’s Investors Services, Inc.

“*Net Income*” means, with respect to any specified Person, the Net Income (loss) of such Person, determined in accordance with GAAP and before any reduction in respect of preferred stock dividends, excluding, however:

(i) any gain (but not loss), together with any related provision for taxes on such gain (but not loss), realized in connection with (a) any Asset Sale or (b) the disposition of any securities by such Person or any of its Subsidiaries or the extinguishment of any Indebtedness of such Person or any of its Subsidiaries; and

(ii) any extraordinary gain (but not loss), together with any related provision for taxes on such extraordinary gain (but not loss).

“*Net Proceeds*” means the aggregate cash proceeds received by the Company or any of its Subsidiaries in respect of any Asset Sale (including, without limitation, any cash received upon the sale or other disposition of any non-cash consideration received in any Asset Sale), net of

(i) the direct costs relating to such Asset Sale, including, without limitation, legal, accounting and investment banking fees, sales commissions, relocation expenses incurred as a result of the Asset Sale, and taxes paid or payable as a result of the Asset Sale after taking into account any available tax credits or deductions and any tax sharing arrangements,

(ii) amounts required to be applied to the repayment of Indebtedness, secured by a Lien that was the subject of such Asset Sale, and

(iii) any reserve for adjustment in respect of the sale price of such asset or assets established in accordance with GAAP.

“*Note Custodian*” means the Trustee, as custodian for the Depository, with respect to the Global Notes, or any successor entity thereto.

“*Notes*” has the meaning assigned to it in the preamble to this First Supplemental Indenture.

“*Obligations*” means any principal, interest, penalties, fees, indemnifications, reimbursements, damages and other liabilities payable under the documentation governing any Indebtedness.

“*Officer*” means, with respect to any Person, the Chair of the Board, the Vice Chair of the Board, the Chief Executive Officer, the President, the Chief Operating Officer, the Chief Financial Officer, the Treasurer, any Assistant Treasurer, the Controller, the Secretary or any Vice-President of such Person.

“*Officers’ Certificate*” means a certificate signed on behalf of the Company by two Officers of the Company, one of whom must be the Chief Executive Officer, the Chief Financial Officer or the Treasurer, that meets the requirements of Section 17.06 and Section 17.07 hereof.

“*Opinion of Counsel*” means an opinion from legal counsel who is reasonably acceptable to the Trustee, that meets the requirements of Section 17.06 and Section 17.07 hereof. The counsel may be internal or external counsel to the Company or counsel to the Trustee.

“*Permitted Business*” means any business similar in nature to any business conducted by the Company or any of its Subsidiaries as of the date of the Indenture and any business reasonably ancillary, incidental, complimentary or related thereto or a reasonable extension, development or expansion thereof, in each case, as determined in good faith by the Board of Directors of the Company.

“*Permitted Investments*” means:

(i) any Investment in the Company or in a Subsidiary of the Company;

(ii) any Investment in Cash Equivalents;

(iii) any Investment by the Company or any Subsidiary of the Company in a Person, if as a result of such Investment: (a) such Person becomes a Subsidiary of the Company; or (b) such Person is merged, consolidated or amalgamated with or into, or transfers or conveys substantially all of its assets to, or is liquidated into, the Company or a Subsidiary of the Company;

(iv) any Investment made as a result of the receipt of non-cash consideration from an Asset Sale that was made pursuant to and in compliance with Section 5.10 hereof;

(v) any acquisition of assets or Capital Stock solely in exchange for the issuance of Equity Interests (other than Disqualified Stock) of the Company;

(vi) any Investments received in compromise or resolution of litigation, arbitration or other disputes;

(vii) Investments represented by Hedging Obligations; and

(viii) repurchases of the Notes in accordance with the terms of the Indenture.

“*Permitted Liens*” means:

(i) Liens securing Existing Indebtedness permitted to be incurred pursuant to clause (i) of the definition of “Permitted Debt”;

(ii) [intentionally omitted];

(iii) Liens on property, plant or equipment securing Indebtedness represented by Capital Lease Obligations, mortgage financings or purchase money obligations permitted to be incurred pursuant to clause (iii) of the definition of “Permitted Debt”;

(iv) Liens in favor of the Company or any Subsidiary;

(v) Liens to secure the performance of statutory obligations, performance bonds or other obligations of a like nature incurred in the ordinary course of business;

(vi) Liens for taxes, assessments or charges, claims or other obligations owed to governmental or quasi-governmental authorities that are not yet delinquent or that are being contested in good faith by appropriate proceedings promptly instituted and diligently concluded; *provided* that any reserve or other appropriate provision as is required in conformity with GAAP has been made therefor;

(vii) Liens consisting of judgment or judicial attachment liens not constituting an Event of Default hereunder;

(viii) Licenses of intellectual property granted in accordance with industry practice in the ordinary course of the Company’s business which (a) do not interfere in any material respect with the ordinary conduct of the business of the Company or any Subsidiaries and (b) do not secure any Indebtedness;

(ix) leases, subleases, licenses or sublicenses in the ordinary course of business to third Persons not interfering in any material respect with the ordinary conduct of the business of the Company or any Subsidiaries and do not secure any Indebtedness;

(x) Liens in favor of collecting banks arising under Section 4-210 of the Uniform Commercial Code;

(xi) Liens imposed by law, such as carriers', warehousemen's, materialmen's, landlord's and mechanics' Liens, in each case, incurred in the ordinary course of business and securing obligations that are not yet delinquent or that are being contested in good faith by appropriate proceedings promptly instituted and diligently concluded; provided that any reserve or other appropriate provision as if required in conformity with GAAP has been made therefor; and

(xii) with respect to any Real Estate Assets, (a) Liens that would otherwise be permissible under clause (ii), (iii) or (vi) of this definition, (b) all easements and restrictions of record that would not be reasonably expected to, individually or in the aggregate, materially impair the value of any real property leased or owned by the Company or materially interfere with its intended use for the Permitted Business; and (c) such other title and survey exceptions that would not be reasonably expected to, individually or in the aggregate, materially impair the value of any real property leased or owned by the Company or materially interfere with the Permitted Business.

"*Permitted Refinancing Indebtedness*" means any Indebtedness of the Company or any of its Subsidiaries issued in exchange for, or the net proceeds of which are used to renew, refund, refinance, replace, defease or discharge other Permitted Debt of the Company or any of its Subsidiaries (other than intercompany Indebtedness); provided that

(i) the principal amount (or accreted value, if applicable) of such Permitted Refinancing Indebtedness does not exceed the principal amount (or accreted value, if applicable) of the Indebtedness renewed, refunded, refinanced, replaced, defeased or discharged (plus all accrued interest on the Indebtedness and the amount of all fees and expenses, including premiums, incurred in connection therewith);

(ii) such Permitted Refinancing Indebtedness has a final maturity date later than the final maturity date of, and has a Weighted Average Life to Maturity equal to or greater than the Weighted Average Life to Maturity of, the Indebtedness being renewed, refunded, refinanced, replaced, defeased or discharged;

(iii) if the Indebtedness being renewed, refunded, refinanced, replaced, defeased or discharged is subordinated in right of payment to the Notes, such Permitted Refinancing Indebtedness has a final maturity date later than the final maturity date of, and is subordinated in right of payment to, the Notes on terms at least as favorable to the Holders as those contained in the documentation governing the Indebtedness being renewed, refunded, refinanced, replaced, defeased or discharged; and

(iv) such Indebtedness is incurred either by the Company or by the Subsidiary who is the obligor on the Indebtedness being renewed, refunded, refinanced, replaced, defeased or discharged.

"*Person*" means any individual, corporation, partnership, joint venture, association, joint-stock company, trust, unincorporated organization, limited liability company, or government or other entity.

"*Physical Note*" means permanent certificated Note in registered form issued in denomination of \$1,000 Principal Amount and integral multiples thereof.

"*Principal*" or "*Principal Amount*" means, when referring to the principal or principal amounts of any Note, as set forth on the face of the Note as such amount may be reduced by any conversions, redemptions or otherwise pursuant hereto.

"*Prospectus*" means the prospectus included in a Registration Statement (including, without limitation, a prospectus that includes any information previously omitted from a prospectus filed as part of an effective Registration Statement in reliance upon Rule 430A or 430B promulgated under the Securities Act), as amended or supplemented by any prospectus supplement, and all other amendments and supplements to the Prospectus, including post-effective amendments, and all material incorporated by reference or deemed to be incorporated by reference in such Prospectus.

“*Qualifying Fundamental Change*” means any transaction or event that constitutes a Fundamental Change in clause (i), (ii) or (iv) of the definition of Fundamental Change (determined after giving effect to any exceptions to or exclusions from such definition, but without regard to the proviso in clause (ii) of the definition thereof).

“*Real Estate Asset*” means any interest (fee, leasehold or otherwise) then owned in any land, any improvements, structures or buildings erected or located on such land, and any equipment located thereon which is so related to such land, improvements, structures or buildings that it is deemed to be a fixture or otherwise forms part of the real property under the law of the applicable jurisdiction.

“*Record Date*” means, with respect to any dividend, distribution or other transaction or event in which the holders of the Common Stock (or other applicable security) have the right to receive any cash, securities or other property or in which the Common Stock (or such other security) is exchanged for or converted into any combination of cash, securities or other property, the date fixed for determination of holders of Common Stock (or such other security) entitled to receive such cash, securities or other property (whether such date is fixed by the Board of Directors, by statute, by contract or otherwise).

“*Redemption Dates*” means, collectively, the Event of Default Redemption Date, Fundamental Change Repurchase Date, the Holder Optional Redemption Date and the Optional Redemption Date, each of the foregoing, individually, a Redemption Date.

“*Redemption Prices*” means, collectively, the Event of Default Redemption Price, Fundamental Change Repurchase Price, Holder Optional Redemption Price, and the Optional Redemption Price, each of the foregoing, individually, a Redemption Price.

“*Registration Statement*” means any registration statement of the Company and any other entity required to be a registrant with respect to such registration statement pursuant to the requirements of the Securities Act on an appropriate form, and including, in each case, the Prospectus, amendments and supplements to each such registration statement or Prospectus, including pre- and post-effective amendments, all exhibits thereto, and all material incorporated by reference or deemed to be incorporated by reference in such registration statement.

“*Regular Record Date*” and “*regular record date*” with respect to any Interest Payment Date, means the February 15, May 15, August 15 or November 15 (whether or not such day is a Business Day) immediately preceding the applicable Interest Payment Date.

“*Regulation S*” means Regulation S promulgated under the Securities Act (or any successor provision promulgated by the SEC).

“*Relevant Stock Exchange*” means the NASDAQ Capital Market or, if the Common Stock is not then listed on the NASDAQ Capital Market, the principal other national or regional securities exchange or market on which the Common Stock is listed or admitted for trading.

“*Responsible Officer*” means, when used with respect to the Trustee, any officer within the corporate trust department of the Trustee, including any vice president, assistant vice president, assistant secretary, senior associate, associate, trust officer or any other officer of the Trustee who customarily performs functions similar to those performed by the Persons who at the time shall be such officers, respectively, or to whom any corporate trust matter is referred because of such person’s knowledge of and familiarity with the particular subject and who shall have direct responsibility for the administration of the Indenture.

“*Restricted Investment*” means any Investment other than a Permitted Investment.

“*Rule 144*” means Rule 144 promulgated under the Securities Act (or any successor provision promulgated by the SEC).

“*Rule 144A*” means Rule 144A promulgated under the Securities Act (or any successor provision promulgated by the SEC).

“*Scheduled Trading Day*” means a day that is scheduled to be a Trading Day on the Relevant Stock Exchange, or if the Common Stock is not then listed on any Relevant Stock Exchange, a Business Day.

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

“*Securities Act*” means the Securities Act of 1933, as amended.

“*Significant Subsidiary*” means any Subsidiary that would be a “significant subsidiary” as defined in Article I, Rule 1-02 of Regulation S-X, promulgated pursuant to the Securities Act, as such Regulation is in effect on the date of the Indenture.

“*Stated Maturity*” when used in respect of any Note, means the date specified in such Note as the fixed date on which an amount equal to the Principal of such Note together with accrued and unpaid Interest, and any other amounts accrued and unpaid hereunder if any, is due and payable.

“*Stockholder Approval*” means the affirmative vote of a majority of the voting power of the issued and outstanding Capital Stock of the Company voting in accordance with the provisions of the Company’s certificate of incorporation and by-laws as in effect on the date of such vote.

“*Subsidiary*” means, with respect to any specified Person:

(i) any corporation, association or other business entity of which more than 50% of the total voting power of shares of Capital Stock entitled (without regard to the occurrence of any contingency and after giving effect to any voting agreement or stockholders’ agreement that effectively transfers voting power) to vote in the election of directors, managers or trustees of the corporation, association or other business entity is at the time owned or controlled, directly or indirectly, by that Person or one or more of the other Subsidiaries of that Person (or a combination thereof); and

(ii) any partnership (a) the sole general partner or the managing general partner of which is such Person or a Subsidiary of such Person or (b) the only general partners of which are that Person or one or more Subsidiaries of that Person (or any combination thereof).

“*TIA*” means the Trust Indenture Act of 1939 (15 U.S.C. §§ 77aaa-77bbb) as in effect on the date on which the Indenture is qualified under the TIA.

“*Trading Day*” means a day on which (i) trading in the Common Stock (or other security for which a closing sale price must be determined) generally occurs on the Relevant Stock Exchange, or, if the Common Stock (or such other security) is not then listed on a Relevant Stock Exchange, on the principal other market on which the Common Stock (or such other security) is then traded, and (ii) a last reported sale price for the Common Stock (or closing sale price for such other security) is available on such securities exchange or market. If the Common Stock (or such other security) is not so listed or traded “*Trading Day*” means a “*Business Day*.” For purposes of any calculation under the Indenture based upon the Daily VWAP, “*Trading Day*” means a scheduled trading day on which (i) there is no Market Disruption Event and (ii) trading in the Common Stock generally occurs on the Relevant Stock Exchange or, if the Common Stock is not then listed on a Relevant Stock Exchange, on the principal other market on which the Common Stock is then listed or admitted for trading. If the Common Stock is not so listed or admitted for trading, “*Trading Day*” means a “*Business Day*.”

“*Transaction Documents*” means the Indenture and the Notes.

“*Trustee*” means The Bank of New York Mellon Trust Company, N.A., until a successor replaces it in accordance with the applicable provisions of the Indenture and thereafter means the successor serving hereunder.

“*Underwriting Agreements*” means, collectively, the Underwritings Agreements dated as of October 19, 2018, among the Company and Oppenheimer & Co., Inc., as representative of the underwriters named therein, as such agreements may be amended, modified or supplemented from time to time in accordance with their terms.

“*Voting Stock*” of any specified Person as of any date means the Capital Stock of such Person that is at the time entitled to vote in the election of the Board of Directors of such Person.

“*Weighted Average Life to Maturity*” means, when applied to any Indebtedness at any date, the number of years obtained by dividing: (a) the sum of the products obtained by multiplying (x) the amount of each then remaining installment, sinking fund, serial maturity or other required payments of principal, including payment at final maturity, in respect of the Indebtedness, by (y) the number of years (calculated to the nearest one-twelfth) that will elapse between such date and the making of such payment, by (b) the then outstanding principal amount of such Indebtedness.

Section 1.03 Other Definitions.

Term	Defined in Section
<i>1% Provision</i>	9.04
<i>Act</i>	2.05
<i>Affiliate Transaction</i>	5.11
<i>Agent Members</i>	2.15
<i>Applicable Law</i>	17.19
<i>Asset Sale</i>	5.10
<i>Authentication Order</i>	2.02
<i>Base Indenture</i>	Preamble
<i>Cash Interest</i>	16.02
<i>Clause A Distribution</i>	9.04
<i>Clause B Distribution</i>	9.04
<i>Clause C Distribution</i>	9.04
<i>Conversion Agent</i>	2.03
<i>Conversion Date</i>	9.02
<i>Conversion Limitation</i>	9.02
<i>Conversion Obligation</i>	9.01
<i>Conversion Rate</i>	9.01
<i>Convertible Securities</i>	9.04(i)(iv)
<i>Covenant Defeasance</i>	11.02
<i>Distributed Property</i>	9.04(c)
<i>Effective Time</i>	9.04(i)(iv)
<i>Event of Default</i>	7.01
<i>Event of Default Redemption Price</i>	7.02
<i>First Supplemental Indenture</i>	Preamble
<i>Form of Note</i>	2.01
<i>Fundamental Change Company Notice</i>	10.01
<i>Fundamental Change Repurchase Date</i>	10.01
<i>Fundamental Change Repurchase Notice</i>	10.01
<i>Fundamental Change Repurchase Price</i>	10.01
<i>Expiration Date</i>	9.04
<i>Holder Optional Redemption</i>	3.08
<i>Holder Optional Redemption Date</i>	3.08
<i>Holder Optional Redemption Notice</i>	3.08
<i>Holder Optional Redemption Price</i>	3.08
<i>incur</i>	5.09
<i>Indenture</i>	Preamble
<i>indenture securities</i>	1.04
<i>indenture security Holder</i>	1.04
<i>indenture to be qualified</i>	1.04
<i>indenture trustee</i>	1.04
<i>institutional trustee</i>	1.04
<i>Interest Make-Whole Payment</i>	3.07(b)
<i>Make-Whole VWAP Price</i>	3.07
<i>Maximum Share Reserve</i>	9.06
<i>Notice of Conversion</i>	9.02
<i>obligor</i>	1.04
<i>Optional Redemption Date</i>	3.03
<i>Optional Redemption Notice</i>	3.03
<i>Optional Redemption Price</i>	3.07
<i>Optional Redemption Right</i>	3.07
<i>Options</i>	9.04(i)(iii)
<i>Paying Agent</i>	2.03
<i>Payment Default</i>	7.01
<i>Permitted Asset Sale</i>	5.10
<i>Permitted Debt</i>	5.09
<i>Qualifying Fundamental Change Company Notice</i>	9.03
<i>Qualifying Fundamental Change Payment</i>	9.03
<i>Qualifying Fundamental Change Payment Price</i>	9.03
<i>Qualifying Fundamental Change Period</i>	9.03

<i>Reference Property</i>	9.07
<i>Registrar</i>	2.03
<i>Repurchase Notice</i>	3.08
<i>Restricted Payments</i>	5.07
<i>Securities Register</i>	2.03
<i>Share Exchange Event</i>	9.07
<i>Special Interest</i>	7.03
<i>Spinoff</i>	9.04
<i>Stock Price</i>	9.03
<i>Surviving Entity</i>	6.01
<i>Trigger Event</i>	9.04
<i>unit of Reference Property</i>	9.07
<i>Valuation Period</i>	9.04

Section 1.04 Incorporation by Reference of Trust Indenture Act.

Whenever the Indenture refers to a provision of the TIA, the provision is incorporated by reference in and made a part of the Indenture.

The following TIA terms used in the Indenture have the following meanings:

“*indenture securities*” means the Notes;

“*indenture security Holder*” means a Holder of a Note;

“*indenture to be qualified*” means the Indenture;

“*indenture trustee*” or “*institutional trustee*” means the Trustee; and

“*obligor*” on the Notes means the Company, and any successor obligor upon the Notes.

All other terms used in the Indenture that are defined by the TIA, defined by TIA reference to another statute or defined by SEC rule under the TIA have the meanings so assigned to them.

Section 1.05 Rules of Construction.

Unless the context otherwise requires:

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

- (b) an accounting term not otherwise defined has the meaning assigned to it in accordance with GAAP;
- (c) “or” is not exclusive;
- (d) words in the singular include the plural, and in the plural include the singular;
- (e) provisions apply to successive events and transactions; and
- (f) references to sections of or rules under the TIA, the Securities Act or the Exchange Act shall be deemed to include substitute, replacement of successor sections or rules adopted by the SEC from time to time.

ARTICLE 2.
THE NOTES

Section 2.01 Title, Terms, Form and Dating.

(a) The Notes shall be known and designated as the “6.5% Convertible Senior Notes Due 2023” of the Company. The Principal Amount shall be payable on the Stated Maturity or on an applicable Redemption Date or as otherwise provided under the Indenture.

(b) Notwithstanding anything in the Base Indenture to the contrary, the Notes and the Trustee’s certificate of authentication shall be substantially in the form of Exhibit A hereto (the “*Form of Note*”). The Notes may have notations, legends or endorsements required by law, stock exchange rule or usage. Each Note shall be dated the date of its authentication. The Notes shall be in denominations of \$1,000 and integral multiples thereof.

(c) The terms and provisions contained in the Notes shall constitute, and are hereby expressly made, a part of the Indenture and the Company and the Trustee, by their execution and delivery of the Indenture, expressly agree to such terms and provisions and to be bound thereby. However, to the extent any provision of any Note conflicts with the express provisions of the Indenture, the provisions of the Indenture shall govern and be controlling.

Section 2.02 Execution and Authentication.

The Notes shall be executed on behalf of the Company by the Chief Executive Officer, the Chief Financial Officer, the President, or any Vice President, the Treasurer or the Corporate Secretary of the Company. The signatures of any of these officers on the Securities may be manual or facsimile.

Notes 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 Notes.

A Note shall not be valid until authenticated by the manual signature of the Trustee. The signature shall be conclusive evidence that the Note has been authenticated under the Indenture. The Trustee shall, upon a written order of the Company signed by two Officers (an “*Authentication Order*”) accompanied by an Officers’ Certificate, authenticate Notes for original issue up to the aggregate Principal Amount of \$10.0 million.

The Trustee may appoint an authenticating agent acceptable to the Company to authenticate Notes. An authenticating agent may authenticate Notes whenever the Trustee may do so. Each reference in the Indenture to authentication by the Trustee includes authentication by such agent. An authenticating agent has the same rights as an Agent to deal with Holders or an Affiliate of the Company.

Section 2.03 Registrar, Paying Agent and Conversion Agent. The following provision, together with Section 2.06 hereof, replaces Section 3.5 of the Base Indenture with respect to the Notes.

The Company shall maintain an office or agency in The City of New York where Notes may be presented for registration of transfer or for exchange (“*Registrar*”), an office or agency where Notes may be presented for payment (“*Paying Agent*” or “*paying agent*”) and an office or agency where the Notes may be presented for conversion (“*Conversion Agent*”). The Registrar shall keep a register of the Notes and of their transfer and exchange (the “*Securities Register*”). The Company may appoint one or more co-registrars and one or more additional paying agents and conversion agents. The term “*Registrar*” includes any co-registrar, the term “*Paying Agent*” includes any additional paying agent, and the term “*Conversion Agent*” includes any additional conversion agent. The Company may change any Paying Agent, Registrar or Conversion Agent without notice to any Holder. The Company shall notify the Trustee in writing of the name and address of any Agent not a party to the Indenture. If the Company fails to appoint or maintain another entity as Registrar or Paying Agent, the Trustee shall act as such. The Company or any of its Subsidiaries may act as Paying Agent or Registrar.

The Company initially appoints the Trustee to act as the Registrar, Paying Agent and Conversion Agent.

Section 2.04 Paying Agent to Hold Money in Trust. The following provision replaces Section 9.3 of the Base Indenture with respect to the Notes:

The Company shall require each Paying Agent other than the Trustee to agree in writing that the Paying Agent will hold in trust for the benefit of Holders or the Trustee all money held by the Paying Agent for the payment of Principal, premium, if any, Interest or any other amounts due on the Notes, and will notify the Trustee, in writing, of any default by the Company in making any such payment. While any such default continues, the Trustee may require a Paying Agent to pay all money held by it to the Trustee. The Company at any time may require a Paying Agent to pay all money held by it to the Trustee. Upon payment over to the Trustee, the Paying Agent (if other than the Company or a Subsidiary) shall have no further liability for the money. If the Company or a Subsidiary acts as Paying Agent, it shall segregate and hold in a separate trust fund for the benefit of the Holders all money held by it as Paying Agent. Upon any bankruptcy or reorganization proceedings relating to the Company, the Trustee shall serve as Paying Agent for the Notes.

Section 2.05 Holder Lists; Acts. The following provision replaces Section 1.4 and Section 6.7 of the Base Indenture with respect to the Notes:

(a) The Trustee shall preserve in as current a form as is reasonably practicable the most recent list available to it of the names and addresses of all Holders and shall otherwise comply with TIA § 312(a). If the Trustee is not the Registrar, the Company shall furnish to the Trustee at least seven Business Days before each Interest Payment Date and at such other times as the Trustee may request in writing, a list in such form and as of such date as the Trustee may reasonably require of the names and addresses of the Holders of Notes and the Company shall otherwise comply with TIA § 312(a).

(b) Any request, demand, authorization, direction, notice, consent, waiver or other action provided by the Indenture to be given or taken by Holders may be embodied in and evidenced by one or more instruments of substantially similar tenor signed by such Holders in person or by 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, where it is hereby expressly required, to the Company. Such instrument or instruments (and the action embodied therein and evidenced thereby) are herein sometimes referred to as the “*Act*” of Holders 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 the Indenture and conclusive in favor of the Trustee and the Company, if made in the manner provided in this Section.

(c) 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 of such execution or by a certificate of a notary public or other officer authorized by law to take acknowledgments of deeds, certifying that the individual signing such instrument or writing acknowledged to such officer the execution thereof. Where such execution is by a signer acting in a capacity other than such signer’s individual capacity, such certificate or affidavit shall also constitute sufficient proof of such signer’s 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.

(d) The ownership of the Notes shall be proved by the Register.

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

(f) If the Company shall solicit from the Holders any request, demand, authorization, direction, notice, consent, waiver or other Act, the Company may, at its option, by or pursuant to a resolution of its Board of Directors, fix in advance a record date for the determination of Holders entitled to give such request, demand, authorization, direction, notice, consent, waiver or other Act, but the Company shall have no obligation to do so. If such a record date is fixed, such request, demand, authorization, direction, notice, consent, waiver or other Act 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 purposes of determining whether Holders of the requisite proportion of the then outstanding Notes have authorized or agreed or consented to such request, demand, authorization, direction, notice, consent, waiver or other Act, and for that purpose the then outstanding Notes 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 the Indenture not later than six months after the record date.

Section 2.06 Transfer and Exchange. The following provision, together with Section 2.03 hereof, replaces Section 3.5 of the Base Indenture with respect to the Notes.

(a) When a Note is presented to a Registrar, at the office of the Registrar, with a request to register a transfer thereof or to exchange such Note for an equal Principal Amount of Notes of other authorized denominations, the Registrar shall register the transfer or make the exchange as requested; *provided, however*, that every Note presented or surrendered for registration of transfer or exchange shall be duly endorsed or accompanied by an assignment form and, if applicable, an appropriately completed certificate of transfer in the form set forth in Attachment 4 to the Form of Note attached hereto as Exhibit A, and in form satisfactory to the Registrar duly executed by the Holder thereof or its attorney duly authorized in writing. To permit registration of transfers and exchanges, upon surrender of any Note for registration of transfer or exchange at an office or agency maintained pursuant to Section 2.03, the Company shall execute and the Trustee shall authenticate Notes of a like aggregate Principal Amount at the Registrar's request. Any exchange or transfer shall be without charge, except that the Company or the Registrar may require payment of a sum sufficient to cover any tax or other governmental charge that may be imposed in relation thereto other than any tax or other governmental charge payable upon any exchange or transfer pursuant to Section 2.10, Section 3.07, ARTICLE 10 and Section 12.05.

(b) The Company shall not be required (A) to issue, to register the transfer of or to exchange any Notes during a period beginning at the opening of business 15 days before the day of any selection of Notes for repurchase under Section 3.07 hereof and ending at the close of business on the day of selection, (B) to register the transfer of or to exchange any Note so selected for repurchase in whole or in part, except the unpurchased portion of any Note being redeemed in part or (C) to register the transfer of or to exchange a Note between a Regular Record Date and the next succeeding Interest Payment Date set forth on the face of such Note.

(c) All Notes issued upon any transfer or exchange of Notes shall be valid obligations of the Company, evidencing the same debt and entitled to the same benefits under the Indenture, as the Notes surrendered upon such transfer or exchange.

(d) Any Registrar appointed pursuant to Section 2.03 hereof shall provide to the Trustee such information as the Trustee may reasonably require in connection with the delivery by such Registrar of Notes upon transfer or exchange of Notes.

(e) Each Holder agrees to indemnify the Company and the Trustee against any liability that may result from the transfer, exchange or assignment of such Holder's Notes in violation of any provision of the Indenture and/or applicable United States Federal or state securities law.

(f) The Trustee shall have no obligation or duty to monitor, determine or inquire as to compliance with any restrictions on transfer imposed under the Indenture or under applicable law with respect to any transfer of any interest in any Note (including any transfers between or among Agent Members or book-entry interests) other than to require delivery of such certificates and other documentation or evidence as are expressly required by, and to do so if and when expressly required by the terms of, the Indenture, and to examine the same to determine substantial compliance as to form with the express requirements hereof.

(g) Prior to due presentment for the registration of a transfer of any Note, the Trustee, any Agent and the Company may deem and treat the Person in whose name any Note is registered as the absolute owner of such Note for the purpose of receiving payment of Principal of and Interest and any other amounts due on such Notes and for all other purposes, and none of the Trustee, any Agent or the Company shall be affected by notice to the contrary.

(h) All certifications, certificates and Opinions of Counsel required to be submitted to the Registrar pursuant to this Section 2.06 to effect a registration of transfer or exchange may be submitted by facsimile.

Section 2.07 Replacement Notes. The following provision replaces Section 3.6 of the Base Indenture with respect to the Notes:

If any mutilated Note is surrendered to the Trustee or the Company and the Trustee receives evidence to its satisfaction of the destruction, loss or theft of any Note, the Company shall issue and the Trustee, upon receipt of an Authentication Order, shall authenticate a replacement Note if the Trustee's requirements are met. If required by the Trustee or the Company, an indemnity bond must be supplied by the Holder that is sufficient in the judgment of the Trustee and the Company to protect the Company, the Trustee, any Agent and any authenticating agent from any loss that any of them may suffer if a Note is replaced. The Company may charge for its expenses in replacing a Note.

Section 2.08 Outstanding Notes.

The Notes outstanding at any time are all the Notes authenticated by the Trustee, except for those canceled by it, those converted pursuant to ARTICLE 9, those delivered to it for cancellation, and those described in this Section as not outstanding. Except as set forth in Section 2.09 hereof, a Note does not cease to be outstanding because the Company or an Affiliate of the Company holds the Note.

If a Note is replaced pursuant to Section 2.07 hereof, it ceases to be outstanding unless the Trustee receives proof satisfactory to it that the replaced Note is held by a *bona fide* purchaser.

If the entire Principal, accrued and unpaid Interest on such Principal and any other amounts due on any Note is considered paid under Section 5.01 hereof, such Note ceases to be outstanding and Interest on it ceases to accrue.

If the Paying Agent (other than the Company, a Subsidiary or an Affiliate of any thereof) holds, on a Redemption Date or Stated Maturity, money sufficient to pay all Notes payable on that date, then on and after that date such Notes shall be deemed to be no longer outstanding and shall cease to accrue Interest.

Section 2.09 Treasury Notes.

In determining whether the Holders of the requisite Principal Amount of outstanding Notes are present at a meeting of Holders of Notes for quorum purposes or have consented to or voted in favor of any request, demand, authorization, direction, notice, consent, waiver, amendment or modification hereunder, Notes held for the account of the Company, or for any Person directly or indirectly controlling or controlled by or under direct or indirect common control with the Company, shall be disregarded and deemed not to be outstanding, except that in determining whether the Trustee shall be protected in making such a determination or relying upon any such quorum, consent or vote, only Notes which a Responsible Officer of the Trustee actually knows to be so owned shall be so disregarded.

Section 2.10 Temporary Notes. The following provision replaces Section 3.4 of the Base Indenture with respect to the Notes.

Until certificates representing Notes are ready for delivery, the Company may prepare and the Trustee, upon receipt of an Authentication Order, shall authenticate temporary Notes. Temporary Notes shall be substantially in the form of certificated Notes but may have variations that the Company considers appropriate for temporary Notes and as shall be reasonably acceptable to the Trustee. Without unreasonable delay, the Company shall prepare and the Trustee shall authenticate definitive Notes in exchange for temporary Notes without charge to the Holders.

Holders of temporary Notes shall be entitled to all of the benefits of the Indenture as Physical Notes.

Section 2.11 Cancellation. The following provision replaces Section 3.9 of the Base Indenture with respect to the Notes.

The Company shall cause all Notes surrendered for the purpose of payment, repurchase, registration of transfer or exchange or conversion, if surrendered to the Company or any of the Company's agents, Subsidiaries or Affiliates, including the Registrar, Paying Agent and Conversion Agent, to be surrendered to the Trustee for cancellation. All Notes delivered to the Trustee shall, upon receipt of a written request in a Company Order, be canceled promptly by it. Except for any Notes surrendered for registration of transfer or exchange, or as otherwise expressly permitted by any of the provisions of the Indenture, no Notes shall be authenticated in exchange for any Notes surrendered to the Trustee for cancellation. The Trustee shall cancel Notes in accordance with its customary procedures and, after such cancellation, shall deliver evidence of such cancellation to the Company, at the Company's written request in a Company Order. Except as otherwise provided in the Indenture, the Company may not issue new Notes to replace Notes that it has paid or that have been delivered to the Trustee for cancellation, or that any Holder has converted pursuant to ARTICLE 9 hereof.

Section 2.12 Repurchases.

The Company may, to the extent permitted by law, and directly or indirectly (regardless of whether such Notes are surrendered to the Company), repurchase Notes in the open market or otherwise, whether by the Company or its Subsidiaries or through a privately negotiated transaction or public tender or exchange offer or through counterparties to private agreements, including by cash-settled swaps or other derivatives, in each case, without prior notice to the Holders. The Company shall cause any Notes so repurchased (other than Notes repurchased pursuant to cash-settled swaps or other derivatives) to be surrendered to the Trustee for cancellation in accordance with Section 2.11 and such Notes shall no longer be considered outstanding under the Indenture upon their repurchase.

Section 2.13 [Intentionally Omitted].

Section 2.14 CUSIP Numbers.

The Company in issuing the Notes may use one or more "CUSIP" numbers (if then generally in use), and, if so, the Trustee shall use "CUSIP" numbers in notices of redemption or purchase as a convenience to Holders; *provided* that any such notice may state that no representation is made as to the correctness of such numbers either as printed on the Notes or as contained in any notice of a redemption or purchase and that reliance may be placed only on the other identification numbers printed on the Notes, and any such redemption or purchase shall not be affected by any defect in or omission of such numbers. The Company will promptly notify the Trustee, in writing, of any change in the "CUSIP" numbers.

Section 2.15 *Book-Entry Provisions for Global Notes. The following provision replaces Section 2.3 of the Base Indenture with respect to the Notes:*

(a) The Global Note initially shall (i) be registered in the name of the Depositary or the nominee of such Depositary, (ii) be delivered to the Trustee as custodian for the Depositary and (iii) bear legends as set forth on the face of the Form of Note. The transfer and exchange of book-entry interests shall be effected through the Depositary, in accordance with the provisions of the Indenture and its Applicable Procedures. Neither the Trustee nor any Agent shall have any responsibility for any actions taken or not taken by the Depositary.

(b) Members of, or participants in, the Depositary (“*Agent Members*”) shall have no rights under the Indenture in respect of any Global Note held on their behalf by the Depositary, or the Trustee as its custodian, or under the Global Note, and the Depositary may be treated by the Company, the Trustee and any agent of the Company or the Trustee as the absolute owner of the Global Note for all purposes whatsoever. Notwithstanding the foregoing, nothing herein shall prevent the Company, the Trustee or any agent of the Company or the Trustee from giving effect to any written certification, proxy or other authorization furnished by the Depositary or impair, as between the Depositary and its Agent Members, the operation of customary practices governing the exercise of the rights of any Holder.

(c) Transfers of the Global Note shall be limited to transfers in whole, but not in part, to the Depositary, its successors or their respective nominees. Interests of Beneficial Owners in a Global Note may be transferred or exchanged, in whole or in part, for Physical Notes in accordance with the rules and procedures of the Depositary. In addition, Physical Notes shall be transferred to all Beneficial Owners in exchange for their beneficial interests in the Global Note if (A) such Depositary has notified the Company (or the Company becomes aware) that the Depositary (i) is unwilling or unable to continue as Depositary for such Global Note or (ii) has ceased to be a clearing agency registered under the Exchange Act when the Depositary is required to be so registered to act as such Depositary and, in either such case, no successor Depositary shall have been appointed within 90 days of such notification or of the Company becoming aware of such event; or (B) there shall have occurred and be continuing an Event of Default in respect of such Global Note and the outstanding Notes shall have become due and payable pursuant to Section 7.02 and the Holders request that Physical Note be issued; provided that Holders of Physical Note offered and sold in reliance on Rule 144A shall have the right, subject to applicable law, to request that such Notes be exchanged for interests in the applicable Global Note.

(d) In connection with any transfer or exchange of a portion of the beneficial interest in the Global Note to Beneficial Owners pursuant to clause (c) of this Section 2.15, the Registrar shall (if one or more Physical Notes are to be issued) reflect on its books and records the date and a decrease in the Principal Amount of the Global Note in an amount equal to the Principal Amount of the beneficial interest in the Global Note to be transferred, and the Company shall execute, and the Trustee shall authenticate and deliver, one or more Physical Notes of like tenor and amount.

(e) In connection with the transfer of the entire Global Note to Beneficial Owners pursuant to clause (c) of this Section 2.15, the Global Note shall be deemed to be surrendered to the Trustee for cancellation, and the Company shall execute, and the Trustee shall authenticate and deliver, to each Beneficial Owner identified by the Depositary in exchange for its beneficial interest in the Global Note, an equal aggregate Principal Amount of Physical Notes of authorized denominations and the same tenor.

(f) [Intentionally Omitted]

(g) The Holder of the Global Note may grant proxies and otherwise authorize any Person, including Agent Members and Persons that may hold interests through Agent Members, to take any action which a Holder is entitled to take under the Indenture or the Notes.

(h) The Trustee shall have no responsibility or obligation to any Beneficial Owner of a Global Note, a member or, or a participant in the Depositary or other Person in respect of the accuracy of the books or records, or the acts or omissions, of the Depositary or its nominee or of any participant or member thereof, in respect of any ownership interest in the Notes or in respect of the delivery to any participant, member, Beneficial Owner or other Person (other than the Depositary) of any notice (including any notice of redemption) or the payment of any amount, under or in respect of such Notes. All notices and communications to be given to the Holders and all payment to be made to Holders under the Notes shall be given or made only to or upon the order of the registered Holders (which shall be the Depositary or its nominee in the case of a Global Note). The rights of Beneficial Owners in any Global Note shall be exercised only through the Depositary subject to its Applicable Procedures. The Trustee may rely on information furnished by the Depositary in respect of its Agent Members and any Beneficial Owners.

Section 2.16 Ranking. The Notes constitute a senior general unsecured obligation of the Company, ranking equally in right of payment with all existing and future senior unsecured indebtedness of the Company and ranking senior in right of payment to any future indebtedness of the Company that is expressly made subordinate to the Notes by the terms of such indebtedness.

ARTICLE 3. REDEMPTION AND PREPAYMENT

Article X of the Base Indenture is hereby replaced in full, solely with respect to the Notes, with the following:

Section 3.01 Notices to Trustee.

If the Company elects to exercise the Optional Redemption Right pursuant to Section 3.07 hereof, it shall notify the Trustee and the Registrar in writing at least 5 Business Days prior to the date that any Optional Redemption Notice is sent to the Holders (unless the Trustee consents to a shorter period) of the Optional Redemption Date, the Principal Amount of the Notes to be redeemed, and the amount of the Interest Make-Whole Payment, together with an Officers' Certificate that all conditions precedent with respect to such redemption contained in Section 3.07 have been satisfied and that such redemption will comply with the Indenture.

Section 3.02 Selection of Notes To Be Redeemed.

In the case of any partial redemption, selection of the Notes for redemption will be made, with respect to Global Notes, in accordance with the Applicable Procedures of the Depository and, with respect to Physical Notes, by lot, pro rata or by such other method as Trustee deems fair and reasonable. The Notes or portions of them selected will be redeemed in Principal Amounts of \$1,000 or a whole multiple of \$1,000. Provisions of the Indenture that apply to Notes called for redemption also apply to portions of Notes called for redemption. The Trustee shall notify the Company promptly of the Notes or portions of Notes to be redeemed. The Trustee may rely upon information provided by the Registrar for purposes of this Section 3.02.

If any portion of a Note selected for partial redemption is converted in part before termination of the conversion right in respect of the portion of the Note so selected, the converted portion of such Note shall be deemed (so far as may be) to be the portion selected for redemption such that the amount designated for partial redemption shall be reduced by the amount so converted. With respect to Physical Notes, Notes which have been converted during a selection of Notes to be redeemed may be treated by the Trustee as outstanding for the purpose of such selection.

Section 3.03 Notice of Redemption.

At least 30 days but not more than 60 days before an Optional Redemption Date, the Company shall deliver a notice of redemption (an "Optional Redemption Notice") (with a copy to the Trustee) to each Holder of Notes to be redeemed at such Holder's registered address.

The Optional Redemption Notice shall identify the Notes to be redeemed and shall state:

- (i) each date when, pursuant to the provisions of Section 3.07 hereof, the Company elects to redeem the Notes in whole or in part (the "Optional Redemption Date");
- (ii) the Optional Redemption Price;

- (iii) the Conversion Price;
- (iv) the amount, form and procedures for payment of the Interest Make-Whole Payment;
- (v) the name and address of the Paying Agent where Notes are to be surrendered;
- (vi) that Notes called for redemption may be converted at any time prior to the close of business on the Business Day immediately preceding the Optional Redemption Date;
- (vii) that Notes called for redemption must be surrendered to the Paying Agent to collect the Optional Redemption Price and the Interest Make-Whole Payment;
- (viii) if fewer than all the outstanding Notes are to be redeemed, the identification and Principal Amounts of the particular Notes to be redeemed;
- (ix) that, unless the Company defaults in making such redemption payment or Interest Make-Whole Payment, Interest on Notes (or portion thereof) called for redemption ceases to accrue on and after the Optional Redemption Date; and
- (x) the CUSIP number or ISIN number, if any, printed on the Notes being redeemed.

At the Company's request, the Trustee shall give the Optional Redemption Notice in the Company's name and at the Company's expense. In such event, the Company shall provide the Trustee with the information required by this Section 3.03.

The Company will issue a press release if the Notes are redeemed.

Section 3.04 Effect of Notice of Redemption.

Once an Optional Redemption Notice is delivered to the Holders, the Notes (or portions thereof) called for redemption shall become irrevocably due and payable on the Optional Redemption Date and at the Optional Redemption Price, together with the Interest Make-Whole Payment, each as stated in the Optional Redemption Notice. An Optional Redemption Notice may not be conditional and shall be irrevocable. Upon surrender to the Paying Agent, such Notes shall be paid on the Optional Redemption Date at the Optional Redemption Price, together with the Interest Make-Whole Payment, each as stated in the Optional Redemption Notice; *provided* that if the Optional Redemption Date is on or after a regular record date and on or prior to the Interest Payment Date, the accrued and unpaid Interest shall be payable to the Holder of the redeemed Notes registered on the regular record date. Failure to give notice or any defect in the notice to any Holder shall not affect the validity of the notice to any other Holder.

Section 3.05 Deposit of Redemption Price and Interest Make-Whole Payment.

No later than 11:00 a.m. (New York City time) on the Business Day prior to the date on which any Redemption Price on any Note is due and payable, the Company shall deposit with the Paying Agent (or, if the Company or a Subsidiary is the Paying Agent, shall segregate and hold in trust) money sufficient to pay the Redemption Price and any Interest Make-Whole Payment to be paid in cash on all Notes to be redeemed on the applicable Redemption Date other than Notes or portions of Notes called for redemption which are owned by the Company or a Subsidiary and have been delivered by the Company or such Subsidiary to the Trustee for cancellation. If the Company complies with the provisions of this Section 3.05, then on and after the applicable Redemption Date, Interest will cease to accrue on the Notes (or portions of the Notes) called for redemption.

Section 3.06 Notes Redeemed in Part.

Upon cancellation of a Note that is redeemed in part, the Company shall issue and the Trustee shall authenticate for the Holder (at the Company's expense) a new Note equal in Principal Amount to the unredeemed portion of the Note surrendered. The Trustee shall notify the Registrar of the issuance of such new Note.

Section 3.07 Optional Redemption by the Company.

(a) The Notes may not be redeemed at the option of the Company pursuant to the Indenture at any time prior to November 30, 2019. At any time and from time to time on or after November 30, 2019 the Company shall have the right to redeem (the "Optional Redemption Right") all or any portion of the Notes at a redemption price (the "Optional Redemption Price") equal to 100% of the Principal Amount plus accrued and unpaid Interest on such Principal, if any, up to the Optional Redemption Date, as follows:

(i) on or after November 30, 2019, if the Closing Sale Price of the Common Stock is greater than 175% of the then effective Conversion Price for each of 20 of any 30 consecutive Trading Days immediately preceding the applicable Optional Redemption Notice;

(ii) on or after November 30, 2020, if the Closing Sale Price of the Common Stock is greater than 150% of the then effective Conversion Price for each of 20 of any 30 consecutive Trading Days immediately preceding the applicable Optional Redemption Notice;

(iii) on or after November 30, 2021, if the Closing Sale Price of the Common Stock is greater than 125% of the then effective Conversion Price for each of 20 of any 30 consecutive Trading Days immediately preceding the applicable Optional Redemption Notice.

(b) If the Company elects to exercise the Optional Redemption Right pursuant to this Section 3.07, then on the Optional Redemption Date, the Company shall make a payment as provided in the penultimate paragraph of this Section 3.07 to the Holder of such redeemed Notes equal to the sum of the remaining scheduled payments of interest that would have been made on the Notes to be redeemed had such Notes remained outstanding from the Optional Redemption Date through, and including the Stated Maturity (the "Interest Make-Whole Payment")

If an Optional Redemption Date occurs after the close of business on a Regular Record Date but prior to the open of business on the Interest Payment Date corresponding to such Regular Record Date, the Interest Make-Whole Payment will not include the accrued interest to any Holder of Notes called for redemption and instead the Company will pay the full amount of the relevant interest payment on such Interest Payment Date to the Holder of record on such Regular Record Date. In such case, the Interest Make-Whole Payment to such Holders of Notes called for redemption will equal the value of all remaining interest payments, starting with the next Interest Payment Date for which interest has not been provided for through the Stated Maturity.

The Company will pay any Interest Make-Whole Payment in cash; provided, however, that so long as the Make-Whole VWAP Price (as defined below) is not less than \$5.01 per share (as appropriately adjusted for any stock split, reverse stock split, stock dividend or other reclassification or combination of the Company's Common Stock occurring after the date of issuance of the Notes), the Company will have the option, by providing written notice to the Trustee of its election at least ten (10) Business Days prior to the Optional Redemption Date (it being agreed that the Company, by subsequent written notice to the Trustee, may change its election at any time through the Business Day immediately preceding the Optional Redemption Date), to pay any Interest Make-Whole Payment in cash and/or by delivering Freely Tradeable Common Stock. For all time periods, the number of shares of Freely Tradeable Common Stock to be issued to any Holder of Notes called for redemption will be, as determined by the Company, the number of shares equal to the amount of the Interest Make-Whole Payment to be paid in Freely Tradeable Common Stock to such Holder, divided by the product of (x) 95% and (y) the simple average of the Daily VWAP of the Common Stock for the ten consecutive Trading Days ending on and including the Trading Day immediately preceding the Optional Redemption Date (such product, the "Make-Whole VWAP Price").

If the Company has failed to pay any Interest or premium on the Notes and such failure to pay is continuing, the Company may not redeem the Notes.

Section 3.08 Offer to Repurchase upon Election of Holder.

(a) Subject to receipt of the Holder Optional Redemption Notice, all (but not less than all) of the Notes of any Holder shall be repurchased by the Company, at the option of such Holder, on November 30, 2021 (the “*Holder Optional Redemption Date*”) at a purchase price in cash equal to 100% of the Principal Amount of the Notes to be repurchased together with Interest accrued and unpaid to (and including) the Holder Optional Redemption Date (the “*Holder Optional Redemption Price*”); provided, however, if the Holder Optional Redemption Date falls after a Regular Record Date but on or before the related Interest Payment Date, then the Interest on the Notes payable on such date shall be payable to the Holders in whose name the Notes were registered at the close of business on such Regular Record Date.

(b) Not more than 60 days and not less than 20 Business Days prior to the Holder Optional Redemption Date, the Company, or, at the written request and expense of the Company, the Trustee, shall send a written notice of the Holder Optional Redemption Date (the “*Holder Optional Redemption Notice*”) to the Trustee (if the Trustee does not send such notice), the Paying Agent, the Conversion Agent, the Registrar and to each Holder. The Holder Optional Redemption Notice shall include the form of a Repurchase Notice to be completed by the Holder and shall state:

- (i) the date by which a Repurchase Notice pursuant to this Section 3.08 must be given;
- (ii) the Holder Optional Redemption Date;
- (iii) the Holder Optional Redemption Price;
- (iv) the Holder’s right to require the Company to repurchase the Notes;
- (v) briefly, the conversion rights of the Notes;
- (vi) the name and address of each Paying Agent and Conversion Agent;
- (vii) the Conversion Price (including any adjustments thereto);

(viii) that, the Notes as to which a Holder Optional Redemption Notice has been given may be converted into Cash and Common Stock (if any) pursuant to ARTICLE 9 of this First Supplemental Indenture only to the extent that the Holder Optional Redemption Notice has been withdrawn in accordance with the terms of the Indenture;

(ix) that, unless the Company defaults in making the payment of the Redemption Price, interest on Notes called for repurchase shall cease to accrue on and after the Redemption Date and the only remaining right of the Holder shall be to receive payment of the Redemption Price payable to such Holder upon presentation and surrender to a Paying Agent of the Notes;

- (x) the procedures that the Holder must follow to exercise rights under this Section 3.08;
- (xi) the procedures for withdrawing a Repurchase Notice, including a form of notice of withdrawal;
- (xii) that the Holder must satisfy the requirements set forth in the Notes and ARTICLE 9 hereof in order to convert the Notes; and

(xiii) the CUSIP and/or ICIN numbers of the Notes.

If any of the Notes is in the form of a Global Note, then the Company shall modify such notice to the extent necessary to accord with the Applicable Procedures of the Depository.

(c) A Holder may exercise its rights specified in this Section 3.08 (a “*Holder Optional Redemption*”), in the case of Physical Notes, upon delivery of a written notice to the Trustee (which shall be in substantially the form included as Attachment 2 to the Form of Note attached hereto as Exhibit A hereto and which may be delivered by letter, overnight courier, hand delivery, facsimile transmission or in any other written form and, in the case of Global Notes, may be delivered electronically or by other means in accordance with the Applicable Procedures of the Depository) of the exercise of such rights (a “*Repurchase Notice*”) at any time prior to the close of business on the second Business Day immediately preceding the Holder Optional Redemption Date.

(i) The delivery of all Notes of a Holder to any Paying Agent (together with all necessary endorsements) at the office of such Paying Agent shall be a condition to the receipt by a Holder of the Holder Optional Redemption Price therefor.

(ii) Notwithstanding anything herein to the contrary, any Holder delivering to the Trustee (or, in the case of the Global Notes, otherwise in accordance with the Applicable Procedures of the Depository) the Repurchase Notice contemplated by Section 3.08(c) shall have the right to withdraw such Repurchase Notice at any time prior to 5:00 p.m., New York City time, on the second Business Day next preceding the Holder Optional Redemption Date by delivery of a written notice of withdrawal to the Trustee (or, in the case of the Global Notes, otherwise in accordance with the Applicable Procedures of the Depository).

(iii) The Trustee shall promptly notify the Company of the receipt by it of any Repurchase Notice or written withdrawal thereof.

(iv) Anything herein to the contrary notwithstanding, in the case of Global Notes, any Repurchase Notice may be delivered or withdrawn and such Notes may be surrendered or delivered for repurchase in accordance with the Applicable Procedures of the Depository.

(d) The Company shall deliver the applicable Holder Optional Redemption Price to the Paying Agent no later than 11:00 a.m. Eastern Time on the Business Day prior to the Holder Optional Redemption Date.

ARTICLE 4.
[INTENTIONALLY OMMITTED]

ARTICLE 5.
COVENANTS

Article IX of the Base Indenture is hereby supplemented, with respect to the Notes, to add or, if indicated, replace the following covenants :

Section 5.01 Payment of Notes. The following covenant replaces Section 3.11 and Section 9.1 of the Base Indenture with respect to the Notes:

The Company shall pay or cause to be paid the Principal of, premium, if any, Redemption Price, if applicable, Interest and any other amounts to be paid on the Notes on the dates and in the manner provided in the Indenture and the Notes. Principal, premium, if any, Redemption Price, if applicable, Interest and any other amounts to be paid shall be considered paid on the date due if the Paying Agent, if other than the Company or a Subsidiary thereof, holds as of 11:00 a.m. Eastern Time on the Business Day prior to the due date money deposited by the Company in immediately available funds and designated for and sufficient to pay all Principal of, premium, if any, Redemption Price, if applicable, Interest and any other amounts to be paid then due. Any payments of the Principal of, premium, if any, Redemption Price, if applicable, Interest and any other amounts which are paid in cash on the Notes shall be paid in United States dollars.

Section 5.02 Maintenance of Office or Agency. The following covenant replaces Section 9.2 of the Base Indenture with respect to the Notes:

The Company shall maintain in the Borough of Manhattan, The City of New York, an office or agency (which may be an office of the Trustee or an affiliate of the Trustee, Registrar or co-registrar) where Notes may be surrendered for registration of transfer or for exchange and where notices and demands to or upon the Company in respect of the Notes and the Indenture may be served. The Company shall give prompt written notice to the Trustee of the location, and any change in the location, of such office or agency in the Borough of Manhattan and any other designation or rescission of any other office or agency. If at any time the Company shall fail to maintain any such required office or agency or shall fail to furnish the Trustee with the address thereof, such presentations, surrenders, notices and demands may be made or served at the Corporate Trust Office of the Trustee.

The Company may also from time to time designate one or more other offices or agencies where the Notes may be presented or surrendered for any or all such purposes and may from time to time rescind such designations; *provided, however*, that no such designation or rescission shall in any manner relieve the Company of its obligation to maintain an office or agency in the Borough of Manhattan, The City of New York, for such purposes. The Company shall give prompt written notice to the Trustee of any such designation or rescission and of any change in the location of any such other office or agency.

The Company hereby designates the office of the Trustee, presently located at 101 Barclay Street, New York, NY 10286, Attn: Corporate Trust as one such office or agency of the Company in accordance with Section 2.03.

Section 5.03 Reports. The following covenant replaces Section 9.5 of the Base Indenture with respect to the Notes:

The Company shall file with the Trustee and each Holder copies of any annual or quarterly reports (on Form 10-K or Form 10-Q or any respective successor form) that the Company is required to file with the Commission pursuant to Section 13 or 15(d) of the Exchange Act (excluding, for the avoidance of doubt, any such information, documents or reports, or portions thereof, subject to confidential treatment and any correspondence with the Commission) within 15 days after the same are required to be filed with the Commission (giving effect to any grace period provided by Rule 12b-25 under the Exchange Act or any successor rule). Any such document or report that the Company files with the Commission via the Commission's EDGAR system (or any successor system) shall be deemed to be filed with the Trustee and the Holders for purposes of this Section 5.03 at the time such document or report is filed via the EDGAR system (or such successor system) it being understood that the Trustee shall have no responsibility to determine if such filings have been made. Notwithstanding the foregoing, at any time the Company is otherwise not required to file documents or reports with the SEC pursuant to Section 13 or 15(d) of the Exchange Act and the Conversion Obligation for the Notes may be satisfied by the delivery of Reference Property consisting of, in whole or in part, another entity's common stock, American depositary receipts, ordinary shares or other Capital Stock, as the case may be, the Company may satisfy its obligations under this Section 5.03 by delivering or filing the financial information of such entity within the same time periods and in the same manner described above. Delivery of the reports and documents described in this Section 5.03 to the Trustee is for informational purposes only, and the Trustee's receipt of such shall not constitute constructive notice of any information contained therein or determinable from information contained therein, including the Company's compliance with any of its covenants hereunder (as to which the Trustee is entitled to conclusively rely on an Officer's Certificate). Trustee shall have no liability or responsibility for the filing, timeliness or content of any such reports

Section 5.04 Compliance Certificate. The following covenant replaces Section 9.6 of the Base Indenture with respect to the Notes:

(a) The Company shall deliver to the Trustee, within 90 days after the end of each fiscal year, an Officers' Certificate, one of the signatories of which is the Company's Chief Executive Officer, Chief Financial Officer or Chief Accounting Officer, stating that a review of the activities of the Company and its Subsidiaries during the preceding fiscal year has been made under the supervision of the signing Officers with a view to determining whether the Company has kept, observed, performed and fulfilled its obligations under the Indenture, and further stating, as to each such Officer signing such certificate, that to the best of his or her knowledge the Company has kept, observed, performed and fulfilled each and every covenant contained in the Indenture and the Notes and is not in default in the performance or observance of any of the terms, provisions and conditions of the Indenture and the Notes (or, if a Default or Event of Default shall have occurred, describing all such Defaults or Events of Default of which he or she may have knowledge and what action the Company is taking or proposes to take with respect thereto) and that to the best of his or her knowledge no event has occurred and remains in existence by reason of which payments on account of the Principal of, Interest or any other amounts due, if any, on the Notes is prohibited or if such event has occurred, a description of the event and what action the Company is taking or proposes to take with respect thereto.

(b) The Company shall, so long as any of the Notes are outstanding, deliver to the Trustee, forthwith upon any Officer becoming aware of any Event of Default, an Officers' Certificate specifying such Event of Default and what action the Company is taking or proposes to take with respect thereto.

Section 5.05 Taxes.

The Company shall pay, and shall cause each of its Subsidiaries to pay, prior to delinquency, all material taxes, assessments, and governmental levies except such as are contested in good faith and by appropriate proceedings or where the failure to effect such payment would not reasonably be expected to have a Material Adverse Effect.

Section 5.06 Stay, Extension and Usury Laws.

The Company covenants (to the extent that it may lawfully do so) that it shall not at any time insist upon, plead, or in any manner whatsoever claim or take the benefit or advantage of, any stay, extension or usury law wherever enacted, now or at any time hereafter in force, that may affect the covenants or the performance of the 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 shall not, by resort to any such law, hinder, delay or impede the execution of any power herein granted to the Trustee.

Section 5.07 Restricted Payments.

The Company shall not, and shall not permit any of its Subsidiaries to, directly or indirectly:

(i) declare or pay any dividend or make any other payment or distribution on account of its Equity Interests (including, without limitation, any payment in connection with any merger or consolidation involving the Company or any Subsidiary of the Company) or to the direct or indirect holders of its Equity Interests in their capacity as such, other than dividends or distributions payable (a) in Equity Interests (other than Disqualified Stock) of the Company or any Subsidiary of the Company to the Company or any Subsidiary of the Company, or (b) in the case of dividends or distributions payable by any Subsidiary of the Company, pro rata to the holders of such Subsidiary's Equity Interests;

(ii) purchase, redeem or otherwise acquire or retire for value (including without limitation, in connection with any merger or consolidation involving the Company) any Equity Interests of the Company;

(iii) make any payment on or with respect to, or purchase, redeem, defease or otherwise acquire or retire for value any Indebtedness of the Company or any of its Subsidiaries that is contractually subordinated to the Notes (excluding any intercompany Indebtedness between or among the Company and any of its Subsidiaries), except regularly scheduled payments of interest and a payment of principal at the maturity date; or

(iv) make any Restricted Investment,

all such payments and other actions set forth in clauses (i) through (iv) above being collectively referred to as “*Restricted Payments*” unless, solely with respect to any payment or other action that would otherwise constitute a Restricted Payment as set forth in clause (i), (ii) or (iv) above, at the time of and after giving effect to such Restricted Payment:

(1) no Default or Event of Default has occurred and is continuing or would occur as a consequence of such Restricted Payment; and

(2) such Restricted Payment, together with the aggregate amount of all other Restricted Payments made by the Company and its Subsidiaries since the date of the Indenture (excluding Restricted Payments permitted by clauses (ii) through and including (vii) of the next succeeding paragraph, is less than the sum, without duplication, of:

A. 50% of the Consolidated Net Income of the Company for the period (taken as one accounting period) from the beginning of the first fiscal quarter commencing after the date of the Indenture to the end of the Company’s most recently ended fiscal quarter for which internal financial statements are available at the time of such Restricted Payment (or, if such Consolidated Net Income for such period is a deficit, less 100% of such deficit); *plus*

B. 100% of the aggregate net cash proceeds received by the Company from and after the date of the Indenture as a contribution to its common equity capital or from the issue or sale of Equity Interests of the Company (other than Disqualified Stock) or from the issue or sale of convertible or exchangeable Disqualified Stock or convertible or exchangeable debt securities of the Company that have been converted into or exchanged for such Equity Interests (other than Equity Interests (or Disqualified Stock or debt securities) sold to a Subsidiary of the Company); *plus*

C. to the extent that any Restricted Investment that was made after the date of the Indenture is sold for cash or otherwise liquidated or repaid for cash, the lesser of (i) the cash return of capital with respect to such Restricted Investment (less the cost of disposition, if any) and (ii) the initial amount of such Restricted Investment.

So long as no Event of Default shall have occurred and be continuing or would occur as a consequence thereof, the foregoing provisions shall not prohibit:

(i) the payment of any dividend or the consummation of any irrevocable redemption within 60 days after the date of declaration of the dividend or giving of the redemption notice, as the case may be, if at the date of declaration or notice, the dividend or redemption payment would have complied with the provisions of the Indenture;

(ii) the making of any Restricted Payment (other than a Restricted Payment as defined in clause (iii) of the definition of Restricted Payment) in exchange for, or out of the net cash proceeds of the substantially concurrent sale (other than to a Subsidiary of the Company) of, Equity Interests of the Company (other than Disqualified Stock) or from the substantially concurrent contribution of common equity capital to the Company;

(iii) the redemption, repurchase, defeasance or other acquisition or retirement for value of Indebtedness of the Company or its Subsidiaries that is contractually subordinated or subordinated with respect to security interests to the Notes with the net cash proceeds from a substantially concurrent incurrence of Permitted Refinancing Indebtedness;

(iv) the repurchase, redemption or other acquisition or retirement for value of any Equity Interests of the Company or any Subsidiary of the Company held by any current or former officer, director, employee or contractor of the Company or any of its Subsidiaries in order to pay or satisfy such officer’s, director’s, employee’s or contractor’s aggregate exercise price or withholding tax payment obligations or otherwise upon death, disability, retirement or termination of employment or engagement, pursuant to awards granted under the Company’s equity incentive, stock option, restricted stock or other long-term equity compensation plans; *provided* that the aggregate price paid for all such repurchased, redeemed, acquired or retired Equity Interests may not exceed \$500,000 in the aggregate in any calendar year, provided, that any unused amounts in any calendar year may be carried forward to one or more future periods;

(v) the repurchase of Equity Interests of the Company deemed to occur upon the exercise of stock options, warrants, or other convertible or exchangeable securities to the extent such Equity Interests represent a portion of the exercise price of those stock options, warrants or other convertible or exchangeable securities; and

(vi) Restricted Investments by the Company and its subsidiaries not otherwise permitted under the Indenture, in an aggregate amount not to exceed \$2 million at any time outstanding.

The amount of all Restricted Payments (other than cash) shall be the Fair Market Value on the date of the Restricted Payment of the asset(s) or securities proposed to be transferred or issued by the Company or such Subsidiary, as the case may be, pursuant to the Restricted Payment. The Fair Market Value of any non-cash Restricted Payment shall be determined by the Board of Directors whose resolution with respect thereto shall be delivered to the Trustee in an Officer's Certificate.

Section 5.08 Dividend and Other Payment Restrictions Affecting Subsidiaries.

The Company shall not, and shall not permit any of its Subsidiaries to, directly or indirectly, create or otherwise permit, cause or suffer to exist or become effective any consensual encumbrance or restriction on the ability of any Subsidiary to (a)(i) pay dividends or make any other distributions on its Capital Stock to the Company or any of its Subsidiaries or with respect to any other interest or participation in, or measured by, its profits or (ii) pay any indebtedness owed to the Company or any of its Subsidiaries, (b) make loans or advances to the Company or any of its Subsidiaries or (c) sell, lease or transfer any of its properties or assets to the Company or any of its Subsidiaries, except for such encumbrances or restrictions existing under or by reasons of:

(i) the Indenture and the Notes;

(ii) agreements governing Existing Indebtedness and Credit Facilities as in effect on the date of the Indenture and any amendments, restatements, modifications, renewals, supplements, refundings, replacements or refinancings of those agreements; *provided* that the amendments, restatements, modifications, renewals, supplements, refundings, replacements or refinancings are not materially more restrictive with respect to such dividend and other payment restrictions than those contained in those agreements on the date of the Indenture;

(iii) any instrument governing Indebtedness or Capital Stock of a Person acquired by the Company or any of its Subsidiaries as in effect at the time of such acquisition (except to the extent such Indebtedness or Capital Stock was incurred in connection with or in contemplation of such acquisition), which encumbrance or restriction is not applicable to any Person, or the properties or assets of any Person, other than the Person, or the property or assets of the Person, so acquired; *provided* that, in the case of Indebtedness, such Indebtedness was permitted by the terms of the Indenture;

(iv) purchase money obligations for property acquired in the ordinary course of business and Capital Lease Obligations that impose restrictions on the property purchased or leased of the nature set forth in Section 5.09(iii);

(v) Permitted Refinancing Indebtedness; *provided* that the restrictions contained in the agreements governing such Permitted Refinancing Indebtedness are not materially more restrictive, taken as a whole, than those contained in the agreements governing the Indebtedness being refinanced;

- (vi) applicable law rule, regulation or order;
- (vii) customary non-assignment provisions in contracts and licenses entered into in the ordinary course of business;
- (viii) any agreement for the sale or other disposition of a Subsidiary that restricts distributions by that Subsidiary pending the sale or other disposition;
- (ix) Liens permitted to be incurred under the provisions of Section 5.12 hereof that limit the right of the debtor to dispose of the assets subject to such Liens;
- (x) provisions limiting the disposition or distribution of assets or property in joint venture agreements, asset sale agreements, sale-leaseback agreements, stock sale agreements and other similar agreements entered into with the approval of the Company's Board of Directors, which limitation is applicable only to the assets that are the subject of such agreements; and
- (xi) restrictions on cash or other deposits or net worth imposed by customers under contracts entered into in the ordinary course of business.

Section 5.09 Incurrence of Indebtedness and Issuance of Disqualified Stock.

The Company shall not, and shall not permit any of its Subsidiaries to, directly or indirectly, create, incur, issue, assume, guarantee or otherwise become directly or indirectly liable, contingently or otherwise, with respect to (collectively, "incur") any Indebtedness (including Acquired Debt), and, while the Company may issue shares of preferred stock, the Company shall not issue any Disqualified Stock and shall not permit any of its Subsidiaries to issue any shares of preferred stock.

The provisions of the first paragraph of this Section 5.09 shall not prohibit the incurrence of any of the following items of Indebtedness (collectively, "Permitted Debt"):

- (i) the incurrence by the Company and its Subsidiaries of Existing Indebtedness;
- (ii) the incurrence by the Company of Indebtedness represented by the Notes on the date of the Indenture;
- (iii) the incurrence by the Company or any of its Subsidiaries of (x) Indebtedness represented by Capital Lease Obligations or purchase money obligations, in each case incurred for the purpose of financing the purchase price or cost of equipment used in the production lines of the Company or any of its Subsidiaries and (y) additional Indebtedness represented by Capital Lease Obligations, mortgage financings or purchase money obligations, in each case, incurred for the purpose of financing all or any part of the purchase price or cost of design, construction, installation or improvement of property, plant or equipment used in the Permitted Business (other than as described in clause (x)) of the Company or any of its Subsidiaries, in the case of this clause (y), in an aggregate principal amount not to exceed \$1.0 million in the aggregate outstanding at any time outstanding;
- (iv) the incurrence by the Company or any of its Subsidiaries of Permitted Refinancing Indebtedness in exchange for, or the net proceeds of which are used to renew, refund, refinance, replace, defease or discharge any Indebtedness that was permitted by the Indenture to be incurred pursuant to clauses (i) or (iii) of this paragraph;
- (v) the incurrence by the Company or any of its Subsidiaries of Indebtedness not to exceed in the aggregate at any time outstanding \$5.0 million; *provided, however*, that (a) such Indebtedness is expressly subordinated to the prior payment in full in cash of all Obligations with respect to the Indenture and the Notes, (b) such Indebtedness matures no less than 181 days following the maturity of the Notes;

(vi) the incurrence by the Company or any of its Subsidiaries of Hedging Obligations in the ordinary course of business (other than for speculative purposes);

(vii) the incurrence by the Company or any of its Subsidiaries of Indebtedness in respect of workers' compensation claims, self-insurance obligations, bankers' acceptances, performance and surety bonds in the ordinary course of business;

(viii) the incurrence by the Company or any of its Subsidiaries of unsecured Indebtedness not to exceed in the aggregate at any time outstanding \$1.0 million;

(ix) Guarantees by the Company or any of its Subsidiaries of Indebtedness otherwise permitted hereunder;

(x) the incurrence of Indebtedness by the Company or any of its Subsidiaries arising from agreements providing for indemnification, contribution, earnout, adjustment of purchase price or similar obligations, in each case, incurred or assumed in connection with the acquisition or disposition of any business, assets or Capital Stock of a Subsidiary otherwise permitted under the Indenture;

(xi) the incurrence of intercompany Indebtedness among the Company and any of its Subsidiaries;

(xii) the incurrence by the Company or any of its Subsidiaries of Indebtedness arising from the honoring by a bank or other financial institution of a check, draft or similar instrument inadvertently drawn against insufficient funds, so long as such Indebtedness is covered within five Business Days.

The Company will not incur any Indebtedness (including Permitted Debt) that is contractually subordinated in right of payment to any other Indebtedness of the Company unless such Indebtedness is also contractually subordinated in right of payment to the Notes on substantially identical terms; *provided, however*, that no Indebtedness will be deemed to be contractually subordinated in right of payment to any other Indebtedness of the Company solely by virtue of being unsecured or by virtue of being secured on a first or junior Lien basis.

For purposes of determining compliance with this Section, in the event that an item of proposed Indebtedness meets the criteria of more than one of the categories of Permitted Debt set forth above, or is entitled to be incurred pursuant to the first paragraph of this covenant, the Company will be permitted to classify such item of Indebtedness on the date of its incurrence, or later reclassify all or a portion of such item of Indebtedness, in any manner that complies with this covenant.

The accrual of interest, the accretion or amortization of original issue discount, the payment of interest on any Indebtedness in the form of additional Indebtedness with the same terms, the reclassification of preferred stock as Indebtedness due to a change in accounting principles, and the payment of dividends on Disqualified Stock in the form of additional shares of the same class of Disqualified Stock will not be deemed to be an incurrence of Indebtedness or an issuance of Disqualified Stock for purposes of this covenant. Notwithstanding any other provision of this covenant, the maximum amount of Indebtedness that the Company or any Subsidiary may incur pursuant to this covenant shall not be deemed to be exceeded solely as a result of fluctuations in exchange rates or currency values.

The amount of any Indebtedness outstanding as of any date will be:

(i) the accreted value of the Indebtedness, in the case of any Indebtedness issued with original issue discount;

(ii) the principal amount of the Indebtedness, in the case of any other Indebtedness; and

(iii) in respect of Indebtedness of another Person secured by a Lien on the assets of the specified Person, the lesser of:

- A. the Fair Market Value of such assets at the date of determination; and
- B. the amount of the Indebtedness of the other Person.

Section 5.10 Asset Sales.

(a) The Company shall not, and shall not permit any of its Subsidiaries to:

(i) sell, lease, convey or otherwise dispose of any assets or rights other than the sale, lease, conveyance or other disposition of all or substantially all of the assets of the Company and its Subsidiaries taken as a whole, which will be governed by Section 6.01 and not by the provisions of this Section 5.10; and

(ii) issue Equity Interests in any of the Subsidiaries or sell Equity Interests in any of its Subsidiaries.

(each of the foregoing, but expressly excluding any condemnation or other government taking, an “*Asset Sale*”), unless such Asset Sale is a Permitted Asset Sale (as defined below):

(b) A “*Permitted Asset Sale*” shall mean:

(i) an Asset Sale in which the Company (or the Subsidiary, as the case may be) receives consideration at the time of such Asset Sale at least equal to the Fair Market Value of the assets or Equity Interests issued or sold or otherwise disposed of; and at least 75% of the consideration received therefor by the Company or such Subsidiary is in the form of cash; *provided, however*, that the amounts of the following shall be deemed to be cash for purposes of this provision:

A. any liabilities (as shown on the Company’s most recent consolidated balance sheet or in the notes thereto), of the Company or any Subsidiary (other than contingent liabilities or liabilities that are by their terms subordinated in right of payment or as to security interests to the Notes) that are assumed by the transferee of any such assets pursuant to a customary novation agreement that releases the Company or such Subsidiary from further liability,

B. any securities, notes or other obligations received by the Company or any such Subsidiary from such transferee that are contemporaneously, subject to ordinary settlement periods, converted by the Company or such Subsidiary into cash (to the extent of the cash received in that conversion), and

C. any stock or assets received of the Company or any Subsidiary used to acquire (1) all or substantially all of the assets of, or any Capital Stock of, another Permitted Business if, after giving effect to any such acquisition of Capital Stock, the Permitted Business is or becomes a Subsidiary of the Company or (2) other assets that are not classified as current assets under GAAP and that are used or useful in a Permitted Business.

(ii) any single Asset Sale or series of related Asset Sales that involves assets having a Fair Market Value of less than \$1.0 million in the aggregate;

(iii) the transfer, sale or lease of products, services or accounts receivable by the Company or any Subsidiary in the ordinary course of business and any sale or other disposition of damaged, worn-out, replaced, retired or obsolete assets by the Company or any Subsidiary in the ordinary course of business;

- (iv) the sale or other disposition by the Company or any Subsidiary of cash or Cash Equivalents;
- (v) a transfer of assets by the Company to a Subsidiary or by a Subsidiary of the Company to the Company or another Subsidiary of the Company;
- (vi) an issuance of Equity Interests by a Subsidiary to the Company or to another Subsidiary of the Company;
- (vii) any Restricted Payment, Permitted Investment that is permitted by Section 5.07 hereof or Permitted Lien that is permitted by Section 5.12 hereof;
- (viii) any leases or subleases in the ordinary course of business to third Persons not interfering in any material respect with the ordinary conduct of the business of the Company and otherwise not prohibited by the Indenture;
- (ix) any dispositions of accounts receivable in connection with the collection or compromise thereof in the ordinary course of business; and
- (x) any licensing of intellectual property in accordance with industry practice in the ordinary course of the Company's business.

(c) After any Permitted Asset Sale, the Company (or such Subsidiary) may apply the Net Proceeds from such Permitted Asset Sale, at its option, either with respect to the Company or the applicable Subsidiary:

- (i) to repay Indebtedness and other Obligations under a Credit Facility, and if the Indebtedness repaid is revolving credit Indebtedness, to correspondingly reduce commitments with respect thereto,
- (ii) to repay Indebtedness and to correspondingly permanently reduce commitments with respect thereto;
- (iii) to acquire all or substantially all of the assets of, or any Capital Stock of, another Permitted Business if, after giving effect to any such acquisition of Capital Stock, the Permitted Business is or becomes a Subsidiary of the Company;
- (iv) to make capital expenditures in a Permitted Business of a Subsidiary; or
- (v) to acquire other assets that are not classified as current assets under GAAP and that are used or useful in a Permitted Business of a Subsidiary.

Pending the application of any Net Proceeds from an Asset Sale, the Company may temporarily invest such Net Proceeds in cash or Cash Equivalents.

Section 5.11 Transactions with Affiliates.

The Company shall not, and shall not permit any of its Subsidiaries to, make any payment to, or sell, lease, transfer or otherwise dispose of any of its properties or assets to, or purchase any property or assets from, or enter into or make or amend any contract, agreement, understanding, loan, advance, transaction or guarantee with, or for the benefit of, any Affiliate of the Company (each of the foregoing, an "*Affiliate Transaction*"), unless;

- (a) such Affiliate Transaction is on terms that are not materially less favorable to the Company or the relevant Subsidiary than those that could reasonably have been obtained in a comparable transaction by the Company or such Subsidiary with an unrelated Person, and

(b) the Company delivers to the Trustee, with respect to any Affiliate Transaction or series of related Affiliate Transactions involving aggregate consideration in excess of \$1.0 million, a resolution of the Board of Directors set forth in an Officers' Certificate certifying that such Affiliate Transaction complies with clause (a) above and that such Affiliate Transaction has been approved by a majority of the disinterested members of the Board of Directors of the Company;

provided, however, that the Company shall not be required to comply with this Section 5.11 with respect to the following, none of which shall be an Affiliate Transaction:

- (i) any employment agreement, employee benefit plan, officer or director indemnification agreement or any similar arrangement entered into by the Company or any of its Subsidiaries in the ordinary course of business and payments made pursuant thereto;
- (ii) transactions between or among the Company and/or its Subsidiaries;
- (iii) Restricted Payments other than Permitted Investments that do not violate Section 5.07 of this First Supplemental Indenture;
- (iv) transactions with a Person that is an Affiliate of the Company solely because the Company owns, directly or through a Subsidiary, an Equity Interest in, or controls, such Person;
- (v) payment of reasonable directors' fees to Persons who are not otherwise Affiliates of the Company; or
- (vi) loans or advances to employees for expenses incurred or to be incurred in connection with the Permitted Business and such employee's employment in the ordinary course of business not to exceed \$250,000 in the aggregate at any time outstanding, in each case shall not be deemed Affiliate Transactions.

Section 5.12 Liens.

The Company shall not, and shall not permit any of its Subsidiaries to, directly or indirectly create, incur, assume or suffer to exist any Lien of any kind on any asset now owned or hereafter acquired, except Permitted Liens.

Section 5.13 Line of Business.

The Company shall not, and shall not permit any of its Subsidiaries to, engage in any business other than Permitted Businesses, except to such extent as would not be material to the Company and its Subsidiaries taken as a whole.

Section 5.14 Corporate Existence. The following covenant replaces Section 9.4 of the Base Indenture with respect to the Notes:

Subject to ARTICLE 6 hereof, the Company shall do or cause to be done all things necessary to preserve and keep in full force and effect (i) its corporate existence, and the corporate, partnership or other existence of each of its Subsidiaries, in accordance with the respective organizational documents (as the same may be amended from time to time) of the Company or any such Subsidiary and (ii) the rights (charter and statutory), licenses and franchises of the Company and its Subsidiaries; provided, however, that the Company shall not be required to preserve any such right, license or franchise, or the corporate, partnership or other existence of any of its Subsidiaries, if the preservation thereof is no longer desirable in the conduct of the business of the Company and its Subsidiaries, taken as a whole, and the loss thereof would not reasonably be expected to have a Material Adverse Effect.

Section 5.15 [Intentionally Omitted].

Section 5.16 Maintenance of Properties and Insurance.

(a) The Company shall, and shall cause each of its Subsidiaries to, maintain all material properties in good working order and condition in all material respects (subject to ordinary wear and tear) and make all necessary repairs, renewals, replacements, additions, betterments and improvements thereto and actively conduct and carry on its business; *provided, however*, that nothing in this Section 5.16 shall prevent the Company or any of its Subsidiaries from discontinuing the operation and maintenance of any of its properties if such discontinuance is, in the good faith judgment of the Board of Directors or other governing body of the Company or the Subsidiary concerned, as the case may be, desirable in the conduct of its business and is not disadvantageous in any material respect to the Holders.

(b) The Company shall maintain insurance (including appropriate self-insurance) against loss or damage of the kinds that, in the good faith judgment of the holdings and the Company, are adequate and appropriate for the conduct of the business of the Company and its Subsidiaries in a prudent manner, with reputable insurers or with the government of the United States of America or an agency or instrumentality thereof, in such amounts, with such deductibles, and by such methods as shall be customary, in the good faith judgment of the Company, for companies similarly situated in the industry.

Section 5.17 Payments for Consent.

Neither the Company nor any of its Subsidiaries shall, directly or indirectly, pay or cause to be paid any consideration, whether by way of interest, fee or otherwise, to or for the benefit of any Holder of any Notes for or as an inducement to any consent, waiver or amendment of any of the terms or provisions of the Indenture or the Notes unless such consideration is offered to be paid or is paid to all Holders of the Notes that consent, waive or agree to amend in the time frame set forth in the solicitation documents relating to such consent, waiver or agreement.

Section 5.18 [Intentionally Omitted].

Section 5.19 Issuance or Sale of Subsidiary Stock.

The Company shall not, and shall not permit any of its Subsidiaries to, sell any Capital Stock of a Subsidiary of the Company, except to the Company or to another wholly owned Subsidiary of the Company, unless the Company and its Subsidiaries, as the case may be, sell 100% of the Capital Stock of the subject Subsidiary that they own in accordance with the Indenture, as applicable. In addition, no Subsidiary of the Company shall issue any Capital Stock, other than to the Company or another Subsidiary of the Company.

Section 5.20 [Intentionally Omitted].

Section 5.21 Special Interest.

If at any time Special Interest becomes payable by the Company pursuant to Section 7.03 hereof, the Company shall promptly deliver to the Trustee a certificate to that effect and stating (i) the amount of such applicable Special Interest that is payable and (ii) the date on which such applicable Special Interest is payable pursuant to Section 7.03 hereof. Unless and until a Responsible Officer of the Trustee receives such a certificate, the Trustee may assume without inquiry that no Special Interest is payable. If the Company has paid Special Interest directly to the Persons entitled to such Special Interest, the Company shall deliver to the Trustee a certificate setting forth the particulars of such payment.

ARTICLE 6.
CONSOLIDATION, MERGER AND SALE OF ASSETS

Article VII of the Base Indenture is hereby replaced in full, solely with respect to the Notes, with the following:

Section 6.01 When Company May Merger, Etc.

Subject to the provisions of Section 6.02, the Company shall not consolidate with or merge with or into, or sell, convey, transfer or lease all or substantially all of the consolidated properties and assets of the Company and its direct and indirect Subsidiaries, taken as a whole, to another Person (other than one or more of the Company's direct or indirect Subsidiaries), unless:

(a) the resulting, surviving or transferee Person (the "*Surviving Entity*"), if not the Company, is a corporation organized and existing under the laws of the United States of America, any State thereof or the District of Columbia, and the Surviving Entity, if not the Company, expressly assumes by supplemental indenture all of the obligations of the Company under the Notes and the Indenture; and

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

For purposes of this Section 6.01, the sale, conveyance, transfer or lease of all or substantially all of the properties and assets of one or more Subsidiaries of the Company to another Person, which properties and assets, if held by the Company instead of such Subsidiaries, would constitute all or substantially all of the properties and assets of the Company on a consolidated basis, shall be deemed to be the sale, conveyance, transfer or lease of all or substantially all of the properties and assets of the Company to another Person.

Section 6.02 Successor Corporation to Be Substituted.

In case of any such consolidation, merger, sale, conveyance, transfer or lease and upon the assumption by the Surviving Entity, by supplemental indenture, executed and delivered to the Trustee and satisfactory in form to the Trustee, of the due and punctual payment of the principal of and accrued and unpaid interest on all of the Notes, the due and punctual delivery or payment, as the case may be, of any consideration due upon conversion of the Notes and the due and punctual performance of all of the covenants and conditions of the Indenture to be performed by the Company, such Surviving Entity (if not the Company) shall succeed to and, except in the case of a lease of all or substantially all of the Company's properties and assets, shall be substituted for the Company, with the same effect as if it had been named herein as the party of the first part. Such Surviving Entity thereupon may cause to be signed, and may issue either in its own name or in the name of the Company any or all of the Notes issuable hereunder which theretofore shall not have been signed by the Company and delivered to the Trustee; and, upon the written order of such Surviving Entity signed by one of its Officers (instead of a Company Order) and subject to all the terms, conditions and limitations in the Indenture prescribed, the Trustee shall authenticate and shall deliver, or cause to be authenticated and delivered, any Notes that previously shall have been signed and delivered by an Officer of the Company to the Trustee for authentication, and any Notes that such Surviving Entity thereafter shall cause to be signed and delivered to the Trustee for that purpose. All the Notes so issued shall in all respects have the same legal rank and benefit under the Indenture as the Notes theretofore or thereafter issued in accordance with the terms of the Indenture as though all of such Notes had been issued at the date of the execution hereof. In the event of any such consolidation, merger, sale, conveyance or transfer (but not in the case of a lease), upon compliance with this ARTICLE 6 the Person named as the "Company" in the first paragraph of this First Supplemental Indenture (or any successor that shall thereafter have become such in the manner prescribed in this ARTICLE 6) may be dissolved, wound up and liquidated at any time thereafter and, except in the case of a lease, such Person shall be released from its liabilities as obligor and maker of the Notes and from its obligations under the Indenture and the Notes.

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

Section 6.03 Opinion of Counsel to Be Given to Trustee.

If the Surviving Entity is not the Company, no such consolidation, merger, sale, conveyance, transfer or lease pursuant to Section 6.01 shall be effective unless the Trustee shall receive an Officer's Certificate and an Opinion of Counsel as conclusive evidence that any such consolidation, merger, sale, conveyance, transfer or lease and any such assumption and, if a supplemental indenture is required in connection with such transaction, such supplemental indenture, complies with the provisions of this ARTICLE 6.

ARTICLE 7.
DEFAULTS AND REMEDIES

Article V of the Base Indenture is hereby replaced in full, solely with respect to the Notes, with the following:

Section 7.01 Events of Default.

An “*Event of Default*” means any of the following events:

- (a) the Company’s (i) failure to comply with its obligation to convert any Notes in accordance with the Indenture upon exercise of a Holder’s conversion right, including the payment of any Qualifying Fundamental Change Payment, and such failure continues for a period of five (5) Business Days;
- (b) the Common Stock is not listed on any Eligible Market;
- (c) the Company defaults in the payment when due of Interest on the Notes and such default continues for a period of 30 days;
- (d) the Company defaults in the payment when due of Principal of or premium, if any, on the Notes when the same becomes due and payable at maturity, upon redemption (including in connection with an offer to purchase) or otherwise, including the payment of any Interest Make-Whole Payment upon the Company’s election to exercise the Optional Redemption Right (whether in cash or shares to the extent permitted herein);
- (e) the Company or any of its Subsidiaries fails to comply with any of the provisions of Section 5.07, Section 5.09, Section 5.10, Section 5.12, Section 6.01 or ARTICLE 10 hereof;
- (f) failure by the Company to give the Holder Optional Redemption Notice pursuant to Section 3.08(b), a Qualifying Fundamental Change Company Notice pursuant to Section 9.03(b), or Fundamental Change Company Notice pursuant to Section 10.01(c), in each case, when due and such failure continues for three (3) Business Days after the due date for such notice;
- (g) the Company fails to observe or perform any other covenant, representation, warranty or other agreement in the Indenture (other than a default specified in clauses (a) through (f) above) or the Notes for 30 days after notice to the Company by the Trustee or the Holders of at least 25% in aggregate Principal Amount of the Notes then outstanding voting as a single class;
- (h) a default occurs under any mortgage, indenture or instrument under which there may be issued or by which there may be secured or evidenced any Indebtedness for money borrowed by the Company or any of its Subsidiaries (or the payment of which is guaranteed by the Company or any of its Subsidiaries), whether such Indebtedness or Guarantee now exists, or is created after the date of the Indenture, which default (i) is caused by a failure to pay principal of, or interest or premium, if any, on such Indebtedness prior to the expiration of the grace period provided in such Indebtedness on the date of such default (a “*Payment Default*”); or (ii) results in the acceleration of such Indebtedness prior to its express maturity and, in each case, the Principal Amount of such Indebtedness, together with the Principal Amount of any other such Indebtedness under which there has been a Payment Default or the maturity of which has been so accelerated, aggregates \$1.0 million or more, in any such case, after notice to the Company by the Trustee or the Holders of at least 25% in aggregate Principal Amount of the Notes then outstanding voting as a single class;
- (i) a final judgment or final judgments for the payment of money are entered by a court or courts of competent jurisdiction against the Company or any of its Subsidiaries and such judgment or judgments remain undischarged, unpaid or unstayed for a period (during which execution shall not be effectively stayed) of 60 days, *provided* that the aggregate of all such undischarged judgments exceeds \$1.0 million (excluding amounts covered by insurance), after notice to the Company by the Trustee or the Holders of at least 25% in aggregate Principal Amount of the Notes then outstanding voting as a single class;

(j) [intentionally omitted]

(k) [intentionally omitted]

(l) the Company, any Significant Subsidiary (as defined in Rule 1-02 of Regulation S-X under the Securities Act and Exchange Act or any successor rule) or any group of Subsidiaries that, taken as a whole, would constitute a Significant Subsidiary, pursuant to or within the meaning of Bankruptcy Law:

(i) commences a voluntary case,

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

(iii) consents to the appointment of a custodian, receiver, trustee, assignee, liquidator or similar official under Bankruptcy Law of it or for all or substantially all of its property,

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

(v) generally is not paying its debts as they become due;

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

(i) is for relief against the Company, any of the Subsidiaries, any Significant Subsidiary or any group of Subsidiaries that, taken as a whole, would constitute a Significant Subsidiary, in an involuntary case;

(ii) appoints a custodian, receiver, trustee, assignee, liquidator or similar official under Bankruptcy Law of the Company, any of the Subsidiaries, any Significant Subsidiary or any group of Subsidiaries that, taken as a whole, would constitute a Significant Subsidiary, or for all or substantially all of the property of the Company, any of the Subsidiaries, any Significant Subsidiary or any group of Subsidiaries that, taken as a whole, would constitute a Significant Subsidiary; or

(iii) orders the liquidation of the Company, any of the Subsidiaries, any Significant Subsidiary or any group of Subsidiaries that, taken as a whole, would constitute a Significant Subsidiary, and the order or decree remains unstayed and in effect for 60 consecutive days.

Section 7.02 Acceleration.

If any Event of Default (other than an Event of Default specified in clause (l) or (m) of Section 7.01) occurs and is continuing, the Trustee or the Holders of at least 25% in Principal Amount of the then outstanding Notes may declare all the Notes to be due and payable immediately (the "*Event of Default Redemption Price*"). Upon any such declaration, the Notes shall become due and payable immediately. Notwithstanding the foregoing, if an Event of Default specified in clause (l) or (m) of Section 7.01 hereof occurs, all outstanding Notes shall be due and payable immediately without further action or notice.

The Majority Holders by written notice to the Trustee may, on behalf of all of the Holders, rescind an acceleration and its consequences if the rescission would not conflict with any judgment or decree and if all existing Events of Default (except nonpayment of Principal, Interest or premium that has become due solely because of the acceleration) have been cured or waived.

In the event of a declaration of acceleration of the Notes solely because an Event of Default described in Section 7.01(h) has occurred and is continuing, the declaration of acceleration of the Notes shall be automatically rescinded and annulled if the payment default or acceleration triggering such Event of Default pursuant to Section 7.01(h) shall be remedied or cured or waived by the holders of the relevant debt within 20 Business Days after the declaration of acceleration with respect thereto and if the rescission and annulment of the acceleration of the Notes would not conflict with any judgment or decree of a court of competent jurisdiction obtained by the Trustee for the payment of amounts due on the Notes.

Section 7.03 Other Remedies.

If an Event of Default occurs and is continuing, the Trustee may pursue any available remedy to collect the payment of Principal, premium, if any, and Interest on the Notes then due or to enforce the performance of any provision of the Notes or the Indenture.

The Trustee may maintain a proceeding even if it does not possess any of the Notes or does not produce any of them in the proceeding. A delay or omission by the Trustee or any Holder of a Note in exercising any right or remedy accruing upon an Event of Default shall not impair the right or remedy or constitute a waiver of or acquiescence in the Event of Default. All remedies are cumulative to the extent permitted by law.

Notwithstanding the foregoing, the sole remedy for an Event of Default relating to the failure by the Company to comply with the provisions of Section 5.03 shall, for the first 180 days after the occurrence of such an Event of Default, consist exclusively of the right to receive special interest ("*Special Interest*") on the Notes at an annual rate equal to 0.50% of the Principal Amount of the Notes. Such Special Interest shall be paid quarterly in arrears on each Interest Payment Date, with the first payment due of the first Interest Payment Date following the date on which such Special Interest began to accrue on the Notes and shall cease to accrue upon the cure or waiver of such Event of Default. Special Interest shall accrue on all outstanding Notes from and including the date on which an Event of Default relating to a failure to comply with the provisions of Section 5.03 shall first occur to but not including the 180th day thereafter (or such earlier date on which such Event of Default shall have been cured or waived). On such 180th day (or earlier, if the Event of Default relating to the failure to comply with Section 5.03 is cured or waived prior to such 180th day), such Special Interest shall cease to accrue and, if the Event of Default relating to the failure to comply with Section 5.03 shall not have been cured or waived prior to such 180th day, the Notes shall be subject to acceleration as provided in Section 7.02. The provisions of this paragraph shall not affect the rights of holders in the event of the occurrence of any other Event of Default. Upon the occurrence of an Event of Default giving rise to the obligation to pay Special Interest, all references herein to interest accrued or payable of any date shall include any Special Interest accrued or payable as of such dates if and to the extent provided in this Section 7.03.

Section 7.04 Waiver of Past Defaults.

The Majority Holders by notice to the Trustee may on behalf of the Holders of all of the Notes waive an existing Default and its consequences hereunder, except (a) a Default or Event of Default described in clauses (l) or (m) of Section 7.01 or (b) in respect of a covenant or provision hereof which under Section 12.02 cannot be modified or amended without the consent of the Holder of each outstanding Note affected (in which case such notice to waive such existing Default and its consequences hereunder shall be given to the Trustee by all Holders of affected Notes). 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 the Indenture; but no such waiver shall extend to any subsequent or other Default or impair any right consequent thereon.

Section 7.05 Control by Majority.

Subject to Section 8.02(g) the Majority Holders 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, provided that: (a) such direction shall not be in conflict with any rule of law, the Indenture; (b) the Trustee may take any other action deemed proper by the Trustee which is not inconsistent with such direction; and (c) the Trustee may refuse to follow any direction that conflicts with law or that the Trustee determines may involve the Trustee in personal liability or may be prejudicial to the rights of the Holders of Notes.

Section 7.06 Limitation on Suits.

No Holder shall have any right to institute any proceeding, judicial or otherwise, in respect of the Indenture, or for the appointment of a receiver or trustee, or for any other remedy hereunder (other than in the case of an Event of Default specified in clause (l) or (m) of Section 7.01), unless:

- (a) the Holder of a Note gives to the Trustee written notice of a continuing Event of Default;
- (b) the Holders of at least 25% in Principal Amount of the then outstanding Notes make a written request to the Trustee to pursue the remedy;
- (c) such Holder of a Note or Holders of Notes offer and, if requested, provide to the Trustee indemnity reasonably satisfactory to the Trustee against any loss, liability or expense;
- (d) the Trustee does not comply with the request within 60 days after receipt of the request and the offer and, if requested, the provision of indemnity; and
- (e) during such 60-day period the Majority Holders do not give the Trustee a direction inconsistent with the request.

No one or more Holders shall have any right in any manner whatever by virtue of, or by availing itself of, any provision of the Indenture to affect, disturb or prejudice the rights of any other Holders (it being understood that the Trustee does not have an affirmative duty to ascertain whether or not such actions or forbearances are unduly prejudicial to such Holders), or to obtain or to seek to obtain priority or preference over any other Holders or to enforce any right under the Indenture, except in the manner herein provided and for the equal and ratable benefit of all the Holders.

Section 7.07 Unconditional Rights of Holders of Notes to Receive Payment.

Notwithstanding any other provision of the Indenture, the right of any Holder to receive payment of the Principal, the Redemption Price, or Interest, in respect of the Notes held by such Holder, on or after the respective due dates expressed in the Notes or any Redemption Date, as applicable, and to convert the Notes in accordance with ARTICLE 9, or to bring suit for the enforcement of any such payment on or after such respective dates or the right to convert, shall not be impaired or affected adversely without the consent of such Holder.

Section 7.08 Collection Suit by Trustee.

If an Event of Default specified in Section 7.01(c) or (d) occurs and is continuing, the Trustee is authorized to recover judgment in its own name and as trustee of an express trust against the Company and the Subsidiaries for the whole amount of Principal of, premium, if any, Redemption Price, Interest and any other amounts remaining unpaid on the Notes and interest on overdue principal and, to the extent lawful, interest and 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.

Section 7.09 Trustee May File Proofs of Claim.

The Trustee is authorized to file such proofs of claim and other papers or documents as may be necessary or advisable in order to have the claims of the Trustee (including any claim for the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel), and the Holders of the Notes allowed in any judicial proceedings relative to the Company, its creditors or its property and shall be entitled and empowered to collect, receive and distribute any money or other property payable or deliverable on any such claims and any custodian in any such judicial proceeding is hereby authorized by each Holder to make such payments to the Trustee, and in the event that the Trustee shall consent to the making of such payments directly to the Holders, to pay to the Trustee any amount due to it for the reasonable compensation, expenses, disbursements and advances of the Trustee, its agents and counsel, and any other amounts due the Trustee under Section 8.07 hereof. To the extent that the payment of any such compensation, expenses, disbursements and advances of the Trustee and its respective agents and counsel, and any other amounts due the Trustee under Section 8.07 hereof out of the estate in any such proceeding, shall be denied for any reason, payment of the same shall be secured by a Lien on, and shall be paid out of, any and all distributions, dividends, money, securities and other properties that the Holders may be entitled to receive in such proceeding whether in liquidation or under any plan of reorganization or arrangement or otherwise. Nothing herein contained shall be deemed to authorize the Trustee to authorize or consent to or accept or adopt on behalf of any Holder any plan of reorganization, arrangement, adjustment or composition affecting the Notes or the rights of any Holder, or to authorize the Trustee to vote in respect of the claim of any Holder in any such proceeding.

Section 7.10 Priorities.

If the Trustee collects any money pursuant to this ARTICLE 7, it shall pay out the money in the following order:

First: to the Trustee and its agents and attorneys for amounts due under Section 8.07 hereof, including payment of all compensation, expense and liabilities incurred, and all advances made, by the Trustee and the costs and expenses of collection;

Second: to Holders of Notes for amounts due and unpaid on the Notes for principal, premium, if any, and interest, ratably, without preference or priority of any kind, according to the amounts due and payable on the Notes for Principal, premium, if any, Interest and any other amounts due, respectively; and

Third: to the Company or to such party as a court of competent jurisdiction shall direct.

The Trustee may fix a record date and payment date for any payment to Holders of Notes pursuant to this Section 7.10.

Section 7.11 Undertaking for Costs.

In any suit for the enforcement of any right or remedy under the Indenture or in any suit against the Trustee for any action taken or omitted by it as Trustee, in either case in respect of the Notes, a court may require any party litigant in such suit to file an undertaking to pay the costs of the suit, and the court may assess reasonable costs, including reasonable attorney's fees, and expenses, against any party litigant in the suit having due regard to the merits and good faith of the claims or defenses made by the party litigant; but the provisions of this Section 7.11 shall not apply to any suit instituted by the Company, to any suit instituted by the Trustee, to any suit instituted by any Holder, or group of Holders, holding in the aggregate more than 10% in aggregate Principal Amount of the then outstanding Notes, or to any suit instituted by any Holder for the enforcement of the payment of the Principal Amount or Interest, on any Note on or after the Stated Maturity of such Note or applicable Redemption Price on or after the applicable Redemption Date.

Section 7.12 Waiver of Stay or Extension of 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 wherever enacted, now or at any time hereafter in force, which may affect the covenants or the performance of the 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 8.
TRUSTEE

Article VI of the Base Indenture is hereby replaced in full, solely with respect to the Notes, with the following:

Section 8.01 Duties of Trustee.

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

(b) The duties and responsibilities of the Trustee shall be as provided by the TIA. Except during the continuance of an Event of Default:

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

(ii) in the absence of bad faith on its part, the Trustee may conclusively rely, as to the truth of the statements and the correctness of the opinions expressed therein, upon certificates or opinions furnished to the Trustee and conforming to the requirements of the 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 to the requirements of the Indenture (but need not confirm or investigate the accuracy of mathematical calculations or other facts stated therein).

(c) No provision of the 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 paragraph does not limit the effect of paragraph (b) of this Section 8.01;

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

(iii) the Trustee shall not be liable with respect to any action taken or omitted to be taken by it in good faith in accordance with the direction of the Majority Holders, determined as provided in Section 2.05, Section 2.08, Section 2.09 and Section 7.05 hereof, relating to the time, method and place of conducting any proceeding for any remedy available to the Trustee, or exercising any trust or power conferred upon the Trustee, under the Indenture; and

(iv) no provision of the 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 the Indenture that in any way relates to the Trustee is subject to paragraphs (a), (b) and (c) of this Section 8.01.

(e) The Trustee shall be under no obligation to exercise any of its rights and powers under the Indenture at the request of any Holder, unless such Holder shall have offered to the Trustee security and indemnity satisfactory to it against any loss, liability or expense.

(f) The Trustee shall be under no liability for interest on any money received by it hereunder except as the Trustee may agree in writing with the Company. Money held in trust by the Trustee hereunder need not be segregated from other funds except to the extent required by law.

Section 8.02 Rights of Trustee.

(a) The Trustee may conclusively 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, note, other evidence of indebtedness or other paper or document believed by it to be genuine and to have been signed or presented by the proper party or parties. The Trustee need not investigate any fact or matter stated in any such paper or document.

(b) Whenever in the administration of the 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 may require an Officers' Certificate or an Opinion of Counsel or both, and may, in the absence of bad faith on its part, conclusively rely upon such Officers' Certificate or Opinion of Counsel.

(c) The Trustee may consult with counsel of its selection and the advice of such counsel or any Opinion of Counsel 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.

(d) 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 the misconduct or negligence on the part of any agent or attorney appointed with due care by it hereunder.

(e) The Trustee shall not be liable for any action taken, suffered, or omitted to be taken by it in good faith and reasonably believed by it to be authorized or within the discretion or rights or powers conferred upon it by the Indenture.

(f) Unless otherwise specifically provided in the Indenture, any demand, request, direction or notice from the Company mentioned herein shall be sufficiently evidenced by Company Order.

(g) In the event the Trustee receives inconsistent or conflicting requests and indemnity from two or more groups of Holders, each representing less than a majority in aggregate principal amount of the Notes then outstanding, pursuant to the provisions of the Indenture, the Trustee, in its sole discretion, may determine what action, if any, will be taken and shall not incur any liability for its failure to act until such inconsistency or conflict is, in its reasonable opinion, resolved.

(h) The Trustee shall not be deemed to have notice of any Default or Event of Default unless written notice of any event which is in fact such a Default or Event of Default is received by a Responsible Officer of the Trustee at the Corporate Trust Office of the Trustee, and such notice references the Notes and the Indenture.

(i) The rights, privileges, immunities and benefits given to the Trustee, including without limitation, its right to be indemnified, are extended to, and shall be enforceable by, the Trustee in each of its capacities hereunder, and each agent, custodian and other person employed to act hereunder.

(j) The Trustee may request that the Company deliver an Officers' Certificate setting forth the names of individuals and/or titles of officers authorized at such time to take specified actions pursuant to the Indenture, which Officers' Certificate may be signed by any person authorized to sign an Officers' Certificate, including any person specified as to authorized in any such certificate previously delivered and not suspended.

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

(l) The Trustee shall not be bound to make any investigation into the facts or matters stated in any resolution, certificate, statement, instrument, opinion, report, notice, request, direction, consent, order, bond, debenture, note, other evidence of indebtedness or other paper or document, 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 at the sole cost of the Company and shall incur no liability or additional liability of any kind by reason of such inquiry or investigation.

(m) Delivery of reports, information and documents to the Trustee (including, without limitation, under Section 5.03 hereof) is for informational purposes only and the Trustee's receipt of the foregoing shall not constitute constructive notice of any information contained therein or determinable from information contained therein, including the Issuer's compliance with any of their covenants hereunder (as to which the Trustee is entitled to rely exclusively on Officer's Certificates).

(n) The Trustee will not be liable to any person if prevented or delayed in performing any of its obligations or discretionary functions under the Indenture by reason of any present or future law applicable to it, by any governmental or regulatory authority or by any circumstances beyond its control.

Section 8.03 Individual Rights of Trustee.

The Trustee in its individual or any other capacity may become the owner or pledgee of Notes and may otherwise deal with the Company or any Affiliate of the Company with the same rights it would have if it were not Trustee. However, in the event that the Trustee acquires any conflicting interest, and a default occurs with respect to the Notes, it must eliminate such conflict within 90 days, apply to the SEC for permission to continue as Trustee or resign. Any authentication agent, any Agent, or any other agent of the Trustee may do the same with like rights and duties. The Trustee is also subject to Section 8.10 and Section 8.11 hereof.

Section 8.04 Trustee's Disclaimer.

The Trustee shall not be responsible for and makes no representation as to the validity or adequacy of the Indenture or the Notes. The Trustee and any authenticating agent shall not be accountable for the Company's use of the proceeds from the Notes or any money paid to the Company or upon the Company's direction under any provision of the Indenture, and shall not be responsible for the use or application of any money received by any Paying Agent other than the Trustee. The statements and recitals contained herein, in the Notes or in any other document in connection with the sale of the Notes or pursuant to the Indenture, except the Trustee's certificates of authentication, shall be taken as the statements of the Company, and the Trustee or any authenticating agent assumes no responsibility for their correctness.

Section 8.05 Notice of Defaults.

If a Default or Event of Default occurs and is continuing and if it is known to the Trustee, the Trustee shall send to Holders of Notes a notice of the Default or Event of Default within 90 days after it knows of such Default or Event of Default, unless such Default or Event of Default shall have been cured or waived. Except in the case of a Default or Event of Default in payment of Principal of, premium, if any, Interest or any other amounts due on any Note, 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 or Responsible Officers of the Trustee in good faith determines that the withholding of such notice is in the interest of the Holders; and provided, further, that in the case of any default of the character specified in Section 7.01(g), no such notice to Holders shall be given until at least 30 days after the occurrence thereof.

Section 8.06 Reports by Trustee to Holders of the Notes.

The Trustee shall transmit to Holders such reports concerning the Trustee and its actions under the Indenture as may be required pursuant to the TIA at the times and in the manner provided pursuant thereto. If required by TIA § 313(a), the Trustee shall, within sixty days after each October 15 following the date of the initial issuance of Securities under the Indenture deliver to Holders a brief report, dated as of such October 15, which complies with the provisions of TIA § 313(a).

A copy of each such report shall, at the time of such transmission to Holders, be filed by the Trustee with each stock exchange, if any, upon which the Notes are listed, with the Commission and with the Company. The Company will promptly notify the Trustee in writing when the Securities are listed on any stock exchange and of any delisting thereof.

Section 8.07 Compensation and Indemnity.

The Company shall pay to the Trustee from time to time compensation for its acceptance of the Indenture and services hereunder as shall be agreed in writing by the Company and the Trustee. The Trustee's compensation shall not be limited by any law on compensation of a trustee of an express trust. The Company shall reimburse the Trustee promptly upon request for all reasonable disbursements, advances and expenses incurred or made by it in addition to the compensation for its services. Such expenses shall include the reasonable compensation, disbursements and expenses of the Trustee's agents and counsel.

The Company shall indemnify the Trustee and its agents for, and to hold them harmless against, any and all losses, liabilities, damages, claims or expenses, including taxes (other than taxes based upon, measured by or determined by the income of the Trustee) incurred by it arising out of or in connection with the acceptance or administration of its duties under the Indenture, including the costs and expenses of enforcing the Indenture against the Company (including this Section 8.07) and defending itself against any claim (whether asserted by the Company or any Holder or any other person) or liability in connection with the exercise or performance of any of its powers or duties hereunder, except to the extent any such loss, damage, claim, liability or expense is due to its own gross negligence or willful misconduct (as determined by a court of competent jurisdiction in a final, non-appealable order). The Trustee shall notify the Company promptly of any claim for which it may seek indemnity. Failure by the Trustee to so notify the Company shall not relieve the Company of its obligations hereunder. The Company shall defend the claim and the Trustee shall cooperate in the defense. The Trustee may have separate counsel and the Company shall pay the reasonable fees and expenses of such counsel. The Company need not pay for any settlement made without its consent, which consent shall not be unreasonably withheld.

The obligations of the Company under this Section 8.07 shall survive the satisfaction and discharge of the Indenture and the resignation or removal of the Trustee.

To secure the Company's payment obligations in this Section, the Trustee shall have a Lien prior to the Notes on all money or property held or collected by the Trustee for any amount owing to it or any predecessor Trustee pursuant to this Section 8.07, except that held in trust to pay Principal and Interest on particular Notes. Such Lien shall survive the satisfaction and discharge of the Indenture.

When the Trustee incurs expenses or renders services after an Event of Default specified in Section 7.01 (l) or (m) hereof occurs, the expenses and the compensation for the services (including the fees and expenses of its agents and counsel) are intended to constitute expenses of administration under any Bankruptcy Law.

Section 8.08 Replacement of Trustee.

A resignation or removal of the Trustee and appointment of a successor Trustee shall become effective only upon the successor Trustee's acceptance of appointment and taking of office as provided in this Section.

The Trustee may resign in writing at any time and be discharged from the trust hereby created by so notifying the Company. The Majority Holders may remove the Trustee by so notifying the Trustee and the Company in writing. The Company may remove the Trustee if:

- (a) the Trustee fails to comply with Section 8.10 hereof;
- (b) the Trustee is adjudged a bankrupt or an insolvent or an order for relief is entered with respect to the Trustee under any Bankruptcy Law;

(c) a custodian, receiver, trustee, assignee, liquidator or similar official under Bankruptcy Law or public officer takes charge of the Trustee or its property; or

(d) the Trustee becomes incapable of acting.

If the Trustee resigns or is removed or if a vacancy exists in the office of Trustee for any reason, the Company shall promptly appoint a successor Trustee. Within one year after the successor Trustee takes office, the Majority Holders may appoint a successor Trustee to replace the successor Trustee appointed by the Company.

If a successor Trustee does not take office within 30 days after the retiring Trustee resigns or is removed, the retiring Trustee, the Company, or the Holders of at least 10% in Principal Amount of the then outstanding Notes may petition any court of competent jurisdiction, at the expense of the Company, for the appointment of a successor Trustee.

If the Trustee, after written request by any Holder who has been a Holder for at least six months, fails to comply with Section 8.10, such Holder may petition any court of competent jurisdiction for the removal of the Trustee and the appointment of a successor Trustee.

A successor Trustee shall deliver a written acceptance of its appointment to the retiring Trustee and to the Company. Thereupon, the resignation or removal of the retiring Trustee shall become effective, and the successor Trustee shall have all the rights, powers and duties of the Trustee under the Indenture. The successor Trustee shall deliver a notice of its succession to Holders. The retiring Trustee shall promptly transfer all property held by it as Trustee to the successor Trustee, provided all sums owing to the Trustee hereunder have been paid and subject to the Lien provided for in Section 8.07 hereof. Notwithstanding replacement of the Trustee pursuant to this Section 8.08, the Company's obligations under Section 8.07 hereof shall continue for the benefit of the retiring Trustee.

Section 8.09 Successor Trustee by Merger, etc.

If the Trustee consolidates, merges or converts into, or transfers all or substantially all of its corporate trust business to, another corporation, the successor corporation without any further act shall be the successor Trustee; provided, that such successor corporation shall otherwise be eligible and qualified under this ARTICLE 8.

Section 8.10 Eligibility; Disqualification.

There shall at all times be a Trustee hereunder that is a corporation organized and doing business under the laws of the United States of America or of any state thereof that is authorized under such laws to exercise corporate trustee power, that is subject to supervision or examination by federal or state authorities and that has a combined capital and surplus of at least \$100 million as set forth in its most recent published annual report of condition.

The Indenture shall always have a Trustee who satisfies the requirements of TIA § 310(a)(1), (2) and (5). The Trustee is subject to TIA § 310(b).

Section 8.11 Preferential Collection of Claims Against Company.

The Trustee is subject to TIA § 311 (a), excluding any creditor relationship listed in TIA § 311 (b). A Trustee who has resigned or been removed shall be subject to TIA § 311 (a) to the extent indicated therein.

**ARTICLE 9.
CONVERSION OF NOTES**

Section 9.01 Conversion Privilege.

Subject to and upon compliance with the provisions of this Article 9, each Holder of a Note shall have the right, at such Holder's option, to convert all or any portion (if the portion to be converted is \$1,000 Principal Amount or an integral multiple thereof) of such Note at any time prior to the close of business on the Business Day immediately preceding the Stated Maturity at an initial conversion rate of 196.08 shares of Common Stock (subject to adjustment as provided in this Article 9, the "Conversion Rate") per \$1,000 Principal Amount of Notes (subject to, and in accordance with, the settlement provisions of Section 9.02, the "Conversion Obligation").

Section 9.02 Conversion Procedure; Settlement Upon Conversion.

(a) Subject to this Section 9.02, Section 9.03(b) and Section 9.07(a), upon conversion of any Note, the Company shall satisfy its Conversion Obligation by delivering to the converting Holder, in respect of each \$1,000 Principal Amount of Notes being converted, a number of shares of Common Stock equal to the Conversion Rate, together with a cash payment, if applicable, in lieu of delivering any fractional share of Common Stock in accordance with subsection (j) of this Section 9.02, and a Qualifying Fundamental Change Payment, if applicable, on the second Business Day immediately following the relevant Conversion Date (or such longer period as the Applicable Procedures of the Depository may require, with respect to any conversions by Beneficial Owners of interests in a Global Note).

(b) Subject to Section 9.02(e), before any Holder of a Note shall be entitled to convert a Note as set forth above, such Holder shall (i) in the case of a Global Note, comply with the Applicable Procedures of the Depository and, if required, pay funds equal to interest payable on the next Interest Payment Date to which such Holder is not entitled as set forth in Section 9.02(h) and (ii) in the case of a Physical Note, the Holder thereof shall (1) complete, manually sign and deliver an irrevocable notice (or a facsimile, PDF or other electronic transmission thereof) to the Conversion Agent as set forth in the Form of Notice of Conversion (a “*Notice of Conversion*”) in the form set forth in Attachment 1 to the Form of Note attached hereto as Exhibit A, at the office of the Conversion Agent and state in writing therein the Principal Amount of Notes to be converted and the name or names (with addresses) in which such Holder wishes the certificate or certificates for the shares of Common Stock to be delivered upon settlement of the Conversion Obligation (and settlement of any Qualifying Fundamental Change Payment, if applicable) to be registered, (2) surrender such Notes, duly endorsed to the Company or in blank (and accompanied by appropriate endorsement and transfer documents), at the office of the Conversion Agent, (3) if required, furnish appropriate endorsements and transfer documents, (4) if required, pay funds equal to interest payable on the next Interest Payment Date to which such Holder is not entitled as set forth in Section 9.02(h) and (5) if required, pay all transfer or similar taxes, if any. The Conversion Agent shall notify the Company of any conversion pursuant to this Article 9 on the Conversion Date for such conversion. The exercise of such conversion rights shall be irrevocable. No Holder may surrender Notes for conversion if such Holder has also delivered (a) a Fundamental Change Repurchase Notice to the Company in respect of such Notes and has not validly withdrawn such Fundamental Change Repurchase Notice in accordance with Section 10.02, or (b) a Repurchase Notice to the Company in respect of such Notes and has not validly withdrawn such Repurchase Notice in accordance with Section 3.08.

If more than one Note shall be surrendered for conversion at one time by the same Holder, the Conversion Obligation and Qualifying Fundamental Change Payment, if applicable, with respect to such Notes shall be computed on the basis of the aggregate Principal Amount of the Notes (or specified portions thereof to the extent permitted thereby) so surrendered.

(c) A Note shall be deemed to have been converted immediately prior to the close of business on the date (the “*Conversion Date*”) that the Holder has complied with the requirements set forth in subsection (b) above. The Company shall issue or cause to be issued, and deliver (if applicable) to its transfer agent or to such Holder, or such Holder’s nominee or nominees, the full number of shares of Common Stock to which such Holder shall be entitled, in book-entry format through the Depository, in satisfaction of the Company’s Conversion Obligation together with any Qualifying Fundamental Change Payment, if applicable.

(d) In case any Note shall be surrendered for partial conversion, the Company shall deliver a Company Order, and the Company shall execute and the Trustee shall authenticate and deliver to or upon the written order of the Holder of the Note so surrendered a new Note or Notes in authorized denominations in an aggregate Principal Amount equal to the unconverted portion of the surrendered Note, without payment of any service charge by the converting Holder but, if required by the Company or Trustee, with payment of a sum sufficient to cover any documentary, stamp or similar issue or transfer tax or similar governmental charge required by law or that may be imposed in connection therewith as a result of the name of the Holder of the new Notes issued upon such conversion being different from the name of the Holder of the old Notes surrendered for such conversion.

(e) If a Holder submits a Note for conversion, the Company shall pay any documentary, stamp or similar issue or transfer tax due on the issuance of any shares of Common Stock upon conversion, unless the tax is due because the Holder requests such shares of Common Stock to be issued in a name other than such Holder's name, in which case such Holder shall pay that tax. The conversion of such a Holder's Note may be delayed if the Trustee, and the Conversion Agent does not, receives a sum sufficient to pay any tax that is due by such Holder in accordance with the immediately preceding sentence.

(f) Except as provided in Section 9.04, no adjustment shall be made for dividends on any shares of Common Stock issued upon the conversion of any Note as provided in this Article 9.

(g) Upon the conversion of an interest in a Global Note, the Trustee, or the Note Custodian (if other than the Trustee) at the direction of the Trustee, shall make a notation on such Global Note as to the reduction in the Principal Amount represented thereby. The Company shall notify the Trustee in writing of any conversion of Notes effected through any Conversion Agent other than the Trustee.

(h) Upon conversion, a Holder shall not receive any separate cash payment for accrued and unpaid interest, if any, except as set forth below. The Company's settlement of the full Conversion Obligation shall be deemed to satisfy in full its obligation to pay the Principal Amount of the Note and accrued and unpaid interest, if any, to, but not including, the relevant Conversion Date. As a result, accrued and unpaid interest, if any, to, but not including, the relevant Conversion Date shall be deemed to be paid in full rather than cancelled, extinguished or forfeited. Notwithstanding the foregoing, if Notes are converted after the close of business on a Regular Record Date, but prior to the open of business on the immediately following Interest Payment Date, Holders of such Notes as of the close of business on such Regular Record Date shall receive the full amount of interest payable on such Notes on the corresponding Interest Payment Date notwithstanding the conversion.

Notes surrendered for conversion during the period from the close of business on any Regular Record Date to the open of business on the immediately following Interest Payment Date shall be accompanied by funds equal to the amount of interest payable on the Notes so converted on the corresponding Interest Payment Date (regardless of whether the Holder was the holder of record on the corresponding Regular Record Date); *provided* that no such payment shall be required (1) for conversions following the Regular Record Date immediately preceding the Stated Maturity; (2) if the Company has specified a Fundamental Change Repurchase Date that is after a Regular Record Date and on or prior to the Business Day immediately following the corresponding Interest Payment Date, in respect of Notes converted; or (3) to the extent of any overdue interest, if any overdue interest exists at the time of conversion with respect to such Note. Therefore, for the avoidance of doubt, all Holders of record on the Regular Record Date immediately preceding the Stated Maturity and any Fundamental Change Repurchase Date described in clause (2) above shall receive the full interest payment due on the Stated Maturity or other applicable Interest Payment Date in cash regardless of whether their Notes have been converted or repurchased following such Regular Record Date.

(i) The Person in whose name the shares of Common Stock shall be issuable upon conversion shall become the holder of record of such shares as of the close of business on the relevant Conversion Date. Upon a conversion of Notes, such Person shall no longer be a Holder of such Notes surrendered for conversion; *provided* that (a) the converting Holder shall have the right to receive the Conversion Obligation due upon conversion and the Qualifying Fundamental Change Payment, if applicable, and (b) in the case of a conversion between a Regular Record Date and the corresponding Interest Payment Date, the Holder of record as of the close of business on such Regular Record Date shall have the right to receive the full amount of interest payable on such Interest Payment Date, in accordance with clause (h) above.

(j) The Company shall not issue any fractional share of Common Stock upon conversion of the Notes and shall instead pay cash in lieu of delivering any fractional share of Common Stock issuable upon conversion based on the Closing Sale Price of the Common Stock on the relevant Conversion Date.

(k) The Company shall not effect any conversion of a Note, and no Holder shall have the right to convert any portion of such Note, to the extent that after giving effect to such conversion, such Holder (together with such Holder's affiliates) would Beneficially Own in excess of 4.99% of the number of shares of Common Stock outstanding immediately after giving effect to such conversion (the "*Conversion Limitation*"). For purposes of the foregoing sentence, the number of shares of Common Stock beneficially owned by such Holder and its affiliates shall include the number of shares of Common Stock issuable upon conversion of a Note with respect to which the determination of such sentence is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (A) conversion of the remaining, nonconverted portion of any Note beneficially owned by such Holder or any of its affiliates and (B) exercise or conversion of the unexercised or nonconverted portion of any other securities of the Company subject to a limitation on conversion or exercise analogous to the limitation contained herein beneficially owned by such Holder or any of its affiliates. Except as set forth in the preceding sentence, for purposes of this Section, beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act. For purposes of this Section 9.02(k), in determining the number of outstanding shares of Common Stock, such Holder may rely on the number of outstanding shares of Common Stock as reflected in (x) the Company's most recent annual, quarterly or current report on Form 10-K, Form 10-Q or Form 8-K, respectively, as the case may be; (y) a more recent public announcement by the Company or (z) any other notice by the Company setting forth the number of shares of Common Stock outstanding. For any reason at any time, upon the written or oral request of a Holder, the Company shall within two Business Days confirm orally and in writing to such Holder the number of shares of Common Stock then outstanding. In any case, the number of outstanding shares of Common Stock shall be determined after giving effect to the conversion or exercise of securities of the Company, including any Note, by such Holder or its affiliates since the date as of which such number of outstanding shares of Common Stock was reported. By written notice to the Company, any Holder may increase or decrease the Conversion Limitation to any other percentage not in excess of 9.99% specified in such notice; provided that (i) any such increase will not be effective until the 61st day after such notice is delivered to the Company, and (ii) any such increase or decrease will apply only to the Holder sending such notice and not to any other Holder of Notes. Notwithstanding the foregoing, the Conversion Limitation shall not be applicable (i) on any of the ten Trading Days up to and including the Stated Maturity, or (ii) on any of the ten Trading Days up to and including the Effective Date of such Fundamental Change or (iii) during the period between the date that the Fundamental Change notice is sent and the Fundamental Change Repurchase Date.

Section 9.03 Payment in Connection with Conversion Upon a Qualifying Fundamental Change.

(a) If the Effective Date of a Qualifying Fundamental Change occurs prior to the Stated Maturity and a Holder elects to convert its Notes in connection with such Qualifying Fundamental Change, the Company shall, under the circumstances described below, make a payment to the Holder of such Notes equal to \$130 per \$1,000 Principal Amount of Converted Notes (the "*Qualifying Fundamental Change Payment*"), as described below. A conversion of Notes shall be deemed for these purposes to be "in connection with" such Qualifying Fundamental Change if the relevant Conversion Date occurs during the period from, and including, the Effective Date of the Qualifying Fundamental Change up to, and including, the Business Day immediately prior to the related Fundamental Change Repurchase Date (or, in the case of a Qualifying Fundamental Change that would have been a Fundamental Change but for the *proviso* in clause (b) of the definition thereof, the 35th Trading Day immediately following the Effective Date of such Qualifying Fundamental Change) (such period, the "*Qualifying Fundamental Change Period*").

(b) Upon surrender of Notes for conversion in connection with a Qualifying Fundamental Change, the Company shall satisfy the related Conversion Obligation by delivering shares of Common Stock in accordance with Section 9.02; *provided, however*, that if the consideration received by holders of the Common Stock in exchange for such Common Stock in any Qualifying Fundamental Change described in clause (b) of the definition of Fundamental Change is composed entirely of cash, for any conversion of Notes following the Effective Date of such Qualifying Fundamental Change, the Conversion Obligation shall be calculated based solely on the price paid (or deemed to be paid) per share of the Common Stock in the Qualifying Fundamental Change (the "Stock Price") for the transaction and shall be deemed to be an amount of cash per \$1,000 Principal Amount of converted Notes equal to the Conversion Rate, *multiplied by* such Stock Price. If the holders of Common Stock receive in exchange for their Common Stock only cash in a Qualifying Fundamental Change described in clause (b) of the definition of Fundamental Change, the Stock Price shall be the cash amount paid per share. Otherwise, the Stock Price shall be the average of the Closing Sale Prices of the Common Stock over the five consecutive Trading Day period ending on, and including, the Trading Day immediately preceding the relevant Effective Date. The Company shall make appropriate adjustments to the Stock Price, in its good faith determination, to account for any adjustment to the Conversion Rate that becomes effective, or any event requiring an adjustment to the Conversion Rate where the Ex-Dividend Date, Effective Date or expiration date of the event occurs during such five consecutive Trading Day period. The Company shall notify the Trustee, the Conversion Agent (if other than the Trustee) and Holders (a "*Qualifying Fundamental Change Company Notice*"), in writing, of the Effective Date of any Qualifying Fundamental Change no later than five (5) Business Days after such Effective Date, which notice shall contain the Company's election regarding the portions or amounts of any Qualifying Fundamental Change Payments to pay in Freely Tradable Common Stock pursuant to Section 9.03(c) below.

(c) The Company will pay the Qualifying Fundamental Change Payment in cash; provided, however, that so long as the Qualifying Fundamental Change Payment Price (as defined below) is not less than \$5.01 per share (as appropriately adjusted for any stock split, reverse stock split, stock dividend or other reclassification or combination of the Company's Common Stock occurring after the date of issuance of the Notes), the Company will have the option to pay any Qualifying Fundamental Change Payment in cash and/or by delivering Freely Tradeable Common Stock. For all time periods, the number of shares of Freely Tradeable Common Stock a converting Holder will receive, if any, will be the number of shares equal to the amount of the Qualifying Fundamental Change Payment to be paid in Freely Tradeable Common Stock to such Holder, divided by the product of (x) 95% and (y) the Stock Price as determined in Section 9.03(b) (such product, the "Qualifying Fundamental Change Payment Price").

(d) Nothing in this Section 9.03 shall prevent an adjustment to the Conversion Rate pursuant to Section 9.04 in respect of a Qualifying Fundamental Change.

Section 9.04 Adjustment of Conversion Rate.

The Conversion Rate shall be adjusted from time to time by the Company if any of the following events occurs, except that the Company shall not make any adjustments to the Conversion Rate if Holders participate (other than in the case of (x) a share split or share combination or (y) a tender or exchange offer), at the same time and upon the same terms as holders of the Common Stock and solely as a result of holding the Notes, in any of the transactions described in this Section 9.04, without having to convert their Notes as if they held a number of shares of Common Stock equal to the Conversion Rate, *multiplied* by the Principal Amount (expressed in thousands) of Notes held by such Holder.

(a) If the Company exclusively issues shares of the Common Stock as a dividend or distribution on shares of the Common Stock, or if the Company effects a share split or share combination, the Conversion Rate shall be adjusted based on the following formula:

$$CR_1 = CR_0 \times \frac{OS_1}{OS_0}$$

where,

CR_0 = the Conversion Rate in effect immediately prior to the close of business on the Record Date of such dividend or distribution, or immediately prior to the open of business on the Effective Date of such share split or share combination, as applicable;

CR_1 = the Conversion Rate in effect immediately after the close of business on such Record Date or immediately after the open of business on such Effective Date, as applicable;

OS_0 = the number of shares of the Common Stock outstanding immediately prior to the close of business on such Record Date or immediately prior to the open of business on such Effective Date, as applicable (before giving effect to any such dividend, distribution, split or combination); and

OS_1 = the number of shares of the Common Stock outstanding immediately after giving effect to such dividend, distribution, share split or share combination.

Any adjustment made under this Section 9.04(a) shall become effective immediately after the close of business on the Record Date for such dividend or distribution, or immediately after the open of business on the Effective Date for such share split or share combination, as applicable. If any dividend or distribution of the type described in this Section 9.04(a) is declared but not so paid or made, the Conversion Rate shall be immediately readjusted, effective as of the date the Board of Directors determines not to pay such dividend or distribution, to the Conversion Rate that would then be in effect if such dividend or distribution had not been declared.

(b) If the Company distributes to all or substantially all holders of the Common Stock any rights, options or warrants (other than pursuant to a stockholder rights plan) entitling them, for a period of not more than 45 calendar days after the announcement date of such distribution, to subscribe for or purchase shares of the Common Stock at a price per share that is less than the average of the Closing Sale Prices of the Common Stock for the 10 consecutive Trading Day period ending on, and including, the Trading Day immediately preceding the date of announcement of such distribution, the Conversion Rate shall be increased based on the following formula:

$$CR_1 = CR_0 \times \frac{OS_0 + X}{OS_0 + Y}$$

where,

CR₀ = the Conversion Rate in effect immediately prior to the close of business on the Record Date for such distribution;

CR₁ = the Conversion Rate in effect immediately after the close of business on such Record Date;

OS₀ = the number of shares of the Common Stock outstanding immediately prior to the close of business on such Record Date;

X = the total number of shares of the Common Stock distributable pursuant to such rights, options or warrants; and

Y = the number of shares of the Common Stock equal to the aggregate price payable to exercise such rights, options or warrants, *divided by* the average of the Closing Sale Prices of the Common Stock over the 10 consecutive Trading Day period ending on, and including, the Trading Day immediately preceding the date of announcement of the distribution of such rights, options or warrants.

Any increase made under this Section 9.04(b) shall be made successively whenever any such rights, options or warrants are distributed and shall become effective immediately after the close of business on the Record Date for such distribution. To the extent that such rights, options or warrants are not exercised prior to their expiration or shares of Common Stock are not delivered after the expiration of such rights, options or warrants, the Conversion Rate shall be decreased to the Conversion Rate that would then be in effect had the increase with respect to the distribution of such rights, options or warrants been made on the basis of delivery of only the number of shares of Common Stock actually delivered. If such rights, options or warrants are not so distributed or if such rights, options or warrants are not exercised prior to their expiration, the Conversion Rate shall be decreased to the Conversion Rate that would then be in effect if such Record Date for such distribution had not occurred.

For the purpose of this Section 9.04(b), in determining whether any rights, options or warrants entitle the holders to subscribe for or purchase shares of the Common Stock at less than such average of the Closing Sale Prices of the Common Stock for the 10 consecutive Trading Day period ending on, and including, the Trading Day immediately preceding the date of announcement of such distribution, and in determining the aggregate offering price of such shares of Common Stock, there shall be taken into account any consideration received by the Company for such rights, options or warrants and any amount payable on exercise or conversion thereof, the value of such consideration, if other than cash, to be determined by the Company in good faith and in a commercially reasonable manner.

(c) If the Company distributes shares of its Capital Stock, evidences of its Indebtedness, other assets or property of the Company or rights, options or warrants to acquire its Capital Stock or other securities, to all or substantially all holders of the Common Stock, excluding (i) dividends, distributions or issuances as to which an adjustment was effected or pursuant to Section 9.04(a) or Section 9.04(b) or will be so effected in accordance with the 1% Provision, (ii) except as otherwise provided below, rights issued pursuant to any stockholder rights plan of the Company then in effect, (iii) dividends or distributions paid exclusively in cash as to which the provisions set forth in Section 9.04(d) shall apply, (iv) dividends or distributions of Reference Property issued in exchange for the Common Stock pursuant to Section 9.07, and (v) Spin-Offs as to which the provisions set forth below in this Section 9.04(c) shall apply (any of such shares of Capital Stock, evidences of Indebtedness, other assets or property or rights, options or warrants to acquire Capital Stock or other securities, the “*Distributed Property*”), then the Conversion Rate shall be increased based on the following formula:

$$CR_1 = CR_0 \times \frac{SP_0}{SP_0 - FMV}$$

where,

CR_0 = the Conversion Rate in effect immediately prior to the close of business on the Record Date for such distribution;

CR_1 = the Conversion Rate in effect immediately after the close of business on such Record Date;

SP_0 = the average of the Closing Sale Prices of the Common Stock over the 10 consecutive Trading Day period ending on, and including, the Trading Day immediately preceding the Ex-Dividend Date for such distribution; and

FMV = the fair market value (as determined by the Company in good faith and in a commercially reasonable manner) of the Distributed Property distributed with respect to each outstanding share of the Common Stock on the Record Date for such distribution.

Any increase made under the portion of this Section 9.04(c) above shall become effective immediately after the close of business on the Record Date for such distribution. If such distribution is not so paid or made, the Conversion Rate shall be decreased to the Conversion Rate that would then be in effect if such distribution had not been declared. In the case of any distribution of rights, options or warrants, to the extent such rights options or warrants expire unexercised, the applicable Conversion Rate shall be immediately readjusted to the applicable Conversion Rate that would then be in effect had the increase made for the distribution of such rights, options or warrants been made on the basis of delivery of only the number of shares of Common Stock actually delivered upon exercise of such rights, options or warrants. Notwithstanding the foregoing, if “ FMV ” (as defined above) is equal to or greater than “ SP_0 ” (as defined above), in lieu of the foregoing increase, each Holder of a Note shall receive, in respect of each \$1,000 Principal Amount thereof, at the same time and upon the same terms as holders of the Common Stock receive the Distributed Property without having to convert its Notes, the amount and kind of Distributed Property such Holder would have received if such Holder owned a number of shares of Common Stock equal to the Conversion Rate in effect on the Record Date for the distribution. If the Company determines the “ FMV ” (as defined above) of any distribution for purposes of this Section 9.04(c) by reference to the actual or when-issued trading market for any securities, it shall in doing so consider the prices in such market over the same period used in computing “ SP_0 .”

With respect to an adjustment pursuant to this Section 9.04(c) where there has been a payment of a dividend or other distribution on the Common Stock of shares of Capital Stock of any class or series, or similar equity interest, of or relating to a Subsidiary or other business unit of the Company, that are, or, when issued, will be, listed or admitted for trading on a U.S. national securities exchange (a “*Spin-Off*”), the Conversion Rate shall be increased based on the following formula:

$$CR_1 = CR_0 \times \frac{FMV_0 + MP_0}{MP_0}$$

where,

CR₀ = the Conversion Rate in effect immediately prior to the end of the Valuation Period;

CR₁ = the Conversion Rate in effect immediately after the end of the Valuation Period;

FMV₀ = the average of the Closing Sale Prices of the Capital Stock or similar equity interest distributed to holders of the Common Stock applicable to one share of the Common Stock (determined by reference to the definition of Closing Sale Price as if references therein to Common Stock were to such Capital Stock or similar equity interest) over the first 10 consecutive Trading Day period after, and including, the Ex-Dividend Date of the Spin-Off (the “*Valuation Period*”); and

MP₀ = the average of the Closing Sale Prices of the Common Stock over the Valuation Period.

The increase to the Conversion Rate under the preceding paragraph shall occur at the close of business on the last Trading Day of the Valuation Period; *provided* that in respect of any conversion of Notes, if the relevant Conversion Date occurs during the Valuation Period, the references to “10” in the preceding paragraph shall be deemed to be replaced with such lesser number of Trading Days as have elapsed between the Ex-Dividend Date of such Spin-Off and such Conversion Date in determining the Conversion Rate. If any dividend or distribution that constitutes a Spin-Off is declared but not so paid or made, the Conversion Rate shall be immediately decreased, effective as of the date the Board of Directors determines not to pay or make such dividend or distribution, to the Conversion Rate that would then be in effect if such dividend or distribution had not been declared or announced.

For purposes of this Section 9.04(c) (and subject in all respects to Section 9.11), rights, options or warrants distributed by the Company to all holders of the Common Stock entitling them to subscribe for or purchase shares of the Company’s Capital Stock, including shares of Common Stock (either initially or under certain circumstances), which rights, options or warrants, until the occurrence of a specified event or events (“*Trigger Event*”): (i) are deemed to be transferred with such shares of the Common Stock; (ii) are not exercisable; and (iii) are also issued in respect of future issuances of the Common Stock, shall be deemed not to have been distributed for purposes of this Section 9.04(c) (and no adjustment to the Conversion Rate under this Section 9.04(c) will be required) until the occurrence of the earliest Trigger Event, whereupon such rights, options or warrants shall be deemed to have been distributed and an appropriate adjustment (if any is required) to the Conversion Rate shall be made under this Section 9.04(c). If any such right, option or warrant, including any such existing rights, options or warrants distributed prior to the date of the Indenture, are subject to events, upon the occurrence of which such rights, options or warrants become exercisable to purchase different securities, evidences of Indebtedness or other assets, then the date of the occurrence of any and each such event shall be deemed to be the date of distribution and Record Date with respect to new rights, options or warrants with such rights (in which case the existing rights, options or warrants shall be deemed to terminate and expire on such date without exercise by any of the holders thereof). In addition, in the event of any distribution (or deemed distribution) of rights, options or warrants, or any Trigger Event or other event (of the type described in the immediately preceding sentence) with respect thereto that was counted for purposes of calculating a distribution amount for which an adjustment to the Conversion Rate under this Section 9.04(c) was made, (1) in the case of any such rights, options or warrants that shall all have been redeemed or purchased without exercise by any holders thereof, upon such final redemption or purchase (x) the Conversion Rate shall be readjusted as if such rights, options or warrants had not been issued and (y) the Conversion Rate shall then again be readjusted to give effect to such distribution, deemed distribution or Trigger Event, as the case may be, as though it were a cash distribution, equal to the per share redemption or purchase price received by a holder or holders of Common Stock with respect to such rights, options or warrants (assuming such holder had retained such rights, options or warrants), made to all holders of Common Stock as of the date of such redemption or purchase, and (2) in the case of such rights, options or warrants that shall have expired or been terminated without exercise by any holders thereof, the Conversion Rate shall be readjusted as if such rights, options and warrants had not been issued.

For purposes of Section 9.04(a), Section 9.04(b) and this Section 9.04(c), if any dividend or distribution to which this Section 9.04(c) is applicable also includes one or both of:

- (A) a dividend or distribution of shares of Common Stock to which Section 9.04(a) is applicable (the “*Clause A Distribution*”); or
- (B) a dividend or distribution of rights, options or warrants to which Section 9.04(b) is applicable (the “*Clause B Distribution*”),

then, in either case, (1) such dividend or distribution, other than the Clause A Distribution and the Clause B Distribution, shall be deemed to be a dividend or distribution to which this Section 9.04(c) is applicable (the “*Clause C Distribution*”) and any Conversion Rate adjustment required by this Section 9.04(c) with respect to such Clause C Distribution shall then be made, and (2) the Clause A Distribution and Clause B Distribution shall be deemed to immediately follow the Clause C Distribution and any Conversion Rate adjustment required by Section 9.04(a) and Section 9.04(b) with respect thereto shall then be made, except that, if determined by the Company (I) the “Record Date” of the Clause A Distribution and the Clause B Distribution shall be deemed to be the Record Date of the Clause C Distribution and (II) any shares of Common Stock included in the Clause A Distribution or Clause B Distribution shall be deemed not to be “outstanding immediately prior to the close of business on such Record Date or immediately after the open of business on such Effective Date, as applicable” within the meaning of Section 9.04(a) or “outstanding immediately prior to the close of business on such Record Date” within the meaning of Section 9.04(b).

(d) If the Company pays or makes any cash dividend or distribution to all or substantially all holders of the shares of the Common Stock, the Conversion Rate shall be adjusted based on the following formula:

$$CR_1 = CR_0 \times \frac{SP_0}{SP_0 - C}$$

where,

- CR₀ = the Conversion Rate in effect immediately prior to the close of business on the Record Date for such dividend or distribution;
- CR₁ = the Conversion Rate in effect immediately after the close of business on such Record Date for such dividend or distribution;
- SP₀ = the Closing Sale Price of the Common Stock on the Trading Day immediately preceding the Ex-Dividend Date for such dividend or distribution; and
- C = the amount in cash per share of the Common Stock the Company distributes to all or substantially all holders of the Common Stock.

Any increase to the Conversion Rate made pursuant to this Section 9.04(d) shall become effective immediately after the close of business on the Record Date for such dividend or distribution. If such dividend or distribution is not so paid, the Conversion Rate shall be decreased, effective as of the date the Board of Directors determines not to make or pay such dividend or distribution, to be the Conversion Rate that would then be in effect if such dividend or distribution had not been declared. Notwithstanding the foregoing, if “C” (as defined above) is equal to or greater than “SP₀” (as defined above), in lieu of the foregoing increase, each Holder of a Note shall receive, for each \$1,000 Principal Amount of Notes, at the same time and upon the same terms as holders of shares of the Common Stock without having to convert its Notes, the amount of cash that such Holder would have received if such Holder owned a number of shares of Common Stock equal to the Conversion Rate on the Record Date for such cash dividend or distribution.

(e) If the Company or any of its Subsidiaries make a payment pursuant to a tender or exchange offer for the Common Stock that is subject to the then-applicable tender offer rules under the Exchange Act (other than any odd-lot tender offer), to the extent that the cash and value of any other consideration included in the payment per share of the Common Stock exceeds the average of the Closing Sale Prices of the Common Stock over the 10 consecutive Trading Day period commencing on, and including, the Trading Day next succeeding the last date on which tenders or exchanges may be made pursuant to such tender or exchange offer (the “*Expiration Date*”), the Conversion Rate shall be increased based on the following formula:

$$CR_1 = CR_0 \times \frac{AC + (SP_1 \times OS_1)}{OS_0 \times SP_1}$$

where,

- CR₀ = the Conversion Rate in effect immediately prior to the close of business on the 10th Trading Day immediately following, and including, the Trading Day next succeeding the Expiration Date;
- CR₁ = the Conversion Rate in effect immediately after the close of business on the 10th Trading Day immediately following, and including, the Trading Day next succeeding the Expiration Date;
- AC = the aggregate value of all cash and any other consideration (as determined by the Company in good faith and in a commercially reasonable manner) paid or payable for shares of Common Stock purchased in such tender or exchange offer;
- OS₀ = the number of shares of Common Stock outstanding immediately prior to the Expiration Date (prior to giving effect to the purchase of all shares of Common Stock accepted for purchase or exchange in such tender or exchange offer);
- OS₁ = the number of shares of Common Stock outstanding immediately after the Expiration Date (after giving effect to the purchase of all shares of Common Stock accepted for purchase or exchange in such tender or exchange offer); and
- SP₁ = the average of the Closing Sale Prices of the Common Stock over the 10 consecutive Trading Day period commencing on, and including, the Trading Day next succeeding the Expiration Date.

The increase to the Conversion Rate under this Section 9.04(e) shall occur at the close of business on the 10th Trading Day immediately following, and including, the Trading Day next succeeding the Expiration Date; *provided* that, in respect of any conversion of Notes, if the relevant Conversion Date occurs during the 10 Trading Days immediately following, and including, the Trading Day next succeeding the Expiration Date, references to “10” or “10th” in the preceding paragraph shall be deemed replaced with such lesser number of Trading Days as have elapsed between the Expiration Date and such Conversion Date in determining the Conversion Rate.

If the Company is obligated to purchase shares of Common Stock pursuant to any such tender or exchange offer described in this Section 9.04(e) but is permanently prevented by applicable law from effecting any such purchase or all such purchases are rescinded, the applicable Conversion Rate will be readjusted to be the Conversion Rate that would then be in effect if such tender or exchange offer had not been made or had been made only in respect of the purchases that have been effected.

(f) There shall be no adjustment pursuant to any of clauses (a), (b), (c), (d), and (e) if such adjustment would result in the shares of common stock being issued or being deemed to have been issued below \$5.01 (as appropriately adjusted for any stock split, reverse stock split, stock dividend or other reclassification or combination of the Company’s Common Stock occurring after the date of issuance of the Notes) for purpose of NASDAQ Rule 5635(d) or any successor to such rule.

(g) Except as stated herein, the Company shall not adjust the Conversion Rate for the issuance of shares of Common Stock or any securities convertible into or exchangeable for shares of Common Stock or the right to purchase shares of Common Stock or such convertible or exchangeable securities.

(h) In addition to those adjustments required by clauses (a), (b), (c), (d), and (e) of this Section 9.04, and to the extent permitted by applicable law and subject to the applicable rules of any exchange on which any securities of the Company are then listed, the Company from time to time may increase the Conversion Rate by any amount for a period of at least 20 Business Days if the Company determines that such increase would be in the Company's best interest. In addition, to the extent permitted by applicable law and subject to the applicable rules of any exchange on which any of the Company's securities are then listed, the Company may (but is not required to) increase the Conversion Rate to avoid or diminish any income tax to holders of Common Stock or rights to purchase shares of Common Stock in connection with a dividend or distribution of shares of Common Stock (or rights to acquire shares of Common Stock) or similar event. Whenever the Conversion Rate is increased pursuant to either of the preceding two sentences, the Company shall deliver to the Holder of each Note a notice of the increase at least 15 days prior to the date the increased Conversion Rate takes effect, and such notice shall state the increased Conversion Rate and the period during which it will be in effect.

(i) Notwithstanding anything to the contrary in this Article 9, the Conversion Rate shall not be adjusted:

(i) upon the issuance or deemed issuance of shares of Common Stock at a price below the Conversion Price or otherwise, other than for any adjustment described in Section 9.04(a), Section 9.04(b), or Section 9.04(c);

(ii) upon the issuance of any shares of Common Stock pursuant to any present or future plan providing for the reinvestment of dividends or interest payable on the Company's securities and the investment of additional optional amounts in shares of Common Stock under any plan;

(iii) upon the issuance of any shares of capital stock, rights, warrants or options to subscribe for or purchase Common Stock or Convertible Securities (as hereinafter defined) ("Options") issued to directors, officers, employees or consultants of the Company or its Subsidiaries in connection with their service as directors of the Company or its Subsidiaries, their employment by the Company or its Subsidiaries or their retention as consultants by the Company or its Subsidiaries pursuant to an employee benefit plan approved by the Board of Directors of the Company or the compensation committee of the Board of Directors of the Company;

(iv) upon the issuance of any shares of Common Stock issued upon the conversion or exercise of Options or any stock or securities (other than Options) directly or indirectly convertible into or exercisable or exchangeable for shares of Common Stock ("Convertible Securities") that were issued and outstanding immediately preceding the execution and delivery of the Underwriting Agreements (the "Effective Time"), provided such securities are not amended after the Effective Time to increase the number of shares of Common Stock issuable thereunder, lower the exercise or conversion price thereof or extend the term thereof;

(v) for a third-party tender offer by any party other than a tender offer by one or more of the Company's Subsidiaries as described in Section 9.04(e);

(vi) upon the repurchase of any shares of the Common Stock pursuant to an open market share repurchase program or other buy-back transaction, including structured or derivative transactions such as accelerated share repurchase transactions or similar forward derivatives, or other buy-back transaction, that is not a tender offer or exchange offer of the kind described in Section 9.04(e);

(vii) solely for a change in the par value of the Common Stock; or

(viii) upon the issuance of securities issued pursuant to the Underwriting Agreements and shares of Common Stock issued in respect of such securities.

(j) All calculations and other determinations under this Article 9 shall be made by the Company and all calculations of the Conversion Rate shall be made to the nearest one-ten thousandth (1/10,000th) of a share.

(k) If an adjustment to the Conversion Rate otherwise required by the provisions described in Section 9.04 would result in a change of less than 1% to the Conversion Rate, then, notwithstanding the foregoing, the Company may, at its election, defer and carry forward such adjustment, except that all such deferred adjustments must be given effect immediately upon the earliest to occur of the following: (i) when all such deferred adjustments would result in an aggregate change of at least 1% to the Conversion Rate; (ii) the Conversion Date for any Notes; and (iii) on the Effective Date of any Qualifying Fundamental Change, in each case, unless the adjustment has already been made (the “1% Provision”).

(l) Whenever the Conversion Rate is adjusted as herein provided, the Company shall promptly file with the Trustee (and the Conversion Agent if not the Trustee) an Officer’s Certificate setting forth the Conversion Rate after such adjustment and setting forth a brief statement of the facts requiring such adjustment. Unless and until a Responsible Officer of the Trustee (and the Conversion Agent if not the Trustee) shall have received such Officer’s Certificate, the Trustee (and the Conversion Agent if not the Trustee) shall not be deemed to have knowledge of any adjustment of the Conversion Rate and may assume without inquiry that the last Conversion Rate of which it has knowledge is still in effect. Promptly after delivery of such certificate, the Company shall prepare a notice of such adjustment of the Conversion Rate setting forth the adjusted Conversion Rate and the date on which each adjustment becomes effective and shall deliver such notice of such adjustment of the Conversion Rate to each Holder. Failure to deliver such notice shall not affect the legality or validity of any such adjustment and for the avoidance of doubt, neither the Trustee nor the Conversion Agent shall have any liability or responsibility for the Conversion Rate (or any adjustments thereof), the calculation thereof or application thereof.

(m) For purposes of this Section 9.04, the number of shares of Common Stock at any time outstanding shall not include shares of Common Stock held in the treasury of the Company so long as the Company does not pay any dividend or make any distribution on shares of Common Stock held in the treasury of the Company, but shall include shares of Common Stock issuable in respect of scrip certificates issued in lieu of fractions of shares of Common Stock.

Section 9.05 Adjustments of Prices.

Whenever any provision of the Indenture requires the Company to calculate the Closing Sale Prices or the Daily VWAPs over a span of multiple days (including, without limitation, the period, if any, for determining the Stock Price for purposes of a Qualifying Fundamental Change), the Company shall make appropriate adjustments in good faith and in a commercially reasonable manner (to the extent no corresponding adjustment is otherwise made pursuant to the provisions described under Section 9.04) to each to account for any adjustment to the Conversion Rate that becomes effective, or any event requiring an adjustment to the Conversion Rate where the Ex-Dividend Date, Effective Date or Expiration Date, as the case may be, of the event occurs, at any time during the period when the Closing Sale Prices or the Daily VWAPs, are to be calculated.

For the avoidance of doubt, the adjustments made pursuant to this Section 9.05 shall be made, solely to the extent the Company determines in good faith and in a commercially reasonable manner that any such adjustment is appropriate, without duplication of any adjustment made pursuant to the provision set forth under Section 9.04.

Section 9.06 Share Reservations.

The Company shall reserve and keep available at all times, free from preemptive rights, out of its authorized but unissued shares, the maximum number of shares of Common Stock issuable upon conversion of the Notes (including the Interest Make-Whole Payment and the Qualifying Fundamental Change Payment, assuming the Company elects to make such payments solely by delivery of shares of Common Stock) (the “Maximum Share Reserve”) to provide for issuance upon conversion of the Notes from time to time as such Notes are presented for conversion.

Section 9.07 Effect of Recapitalizations, Reclassifications and Changes of the Common Stock.

- (a) In the case of:
- (i) any recapitalization, reclassification or change of the Common Stock (other than a change to par value, or from par value to no par value, or changes resulting from a share split or share combination),
 - (ii) any consolidation, merger or combination involving the Company,
 - (iii) any sale, lease or other transfer to a third party of all or substantially all of the consolidated assets of the Company and the Company's Subsidiaries, taken as a whole; or
 - (iv) any statutory share exchange,

in each case, as a result of which the Common Stock would be converted into, or exchanged for, stock, other securities or other property or assets (including cash or any combination thereof) (any such event, a "*Share Exchange Event*"), then, at and after the effective time of such Share Exchange Event, the right to convert each \$1,000 Principal Amount of Notes shall be changed into a right to convert such Principal Amount of Notes into the kind and amount of shares of stock, other securities or other property or assets (including cash or any combination thereof) that a holder of a number of shares of the Common Stock equal to the Conversion Rate immediately prior to such Share Exchange Event would have owned or been entitled to receive (the "*Reference Property*", with each "*unit of Reference Property*" meaning the kind and amount of Reference Property that a holder of one share of Common Stock would have been entitled to receive) upon such Share Exchange Event; *provided, however*, that at and after the effective time of the Share Exchange Event, the number of shares of Common Stock otherwise deliverable upon conversion of the Notes in accordance with Section 9.02 shall instead be deliverable in the amount and type of Reference Property that a holder of that number of shares of Common Stock would have been entitled to receive in such Share Exchange Event.

If the Share Exchange Event causes the Common Stock to be converted into, or exchanged for, the right to receive more than a single type of consideration (determined based in part upon any form of stockholder election), then (i) the Reference Property into which the Notes will be convertible shall be deemed to be (x) the weighted average of the types and amounts of consideration received by the holders of Common Stock that affirmatively make such an election or (y) if no holders of Common Stock affirmatively make such an election, the types and amounts of consideration actually received by the holders of Common Stock, and (ii) the unit of Reference Property for purposes of the immediately preceding paragraph shall refer to the consideration referred to in clause (i) attributable to one share of Common Stock. The Company shall notify Holders, the Trustee and the Conversion Agent (if other than the Trustee) in writing of such weighted average as soon as reasonably practicable after such determination is made.

If the Reference Property in respect of any Share Exchange Event includes, in whole or in part, shares of Common Equity, the supplemental indenture providing that the Notes will be convertible into Reference Property will also provide for anti-dilution and other adjustments that are as nearly equivalent as possible to the adjustments described under Section 9.04 with respect to the portion of the Reference Property consisting of such Common Equity. If the Reference Property in respect of any Share Exchange Event includes shares of stock, securities or other property or assets (other than cash and/or Cash Equivalents) of a company other than the Company or the successor or purchasing corporation, as the case may be, in such Share Exchange Event, then such other company, if an Affiliate of the Company or the successor or acquiring company, shall also execute such supplemental indenture, and such supplemental indenture shall contain such additional provisions to protect the interests of the Holders, including the right of Holders to require the Company to repurchase their Notes upon a Fundamental Change pursuant to Section 10.01, as the Company in good faith reasonably considers necessary by reason of the foregoing.

(b) Promptly following execution by the Company of a supplemental indenture pursuant to subsection (a) of this Section 9.07, the Company shall file with the Trustee an Officer's Certificate briefly stating the reasons therefor, the kind or amount of cash, securities or property or asset that will comprise a unit of Reference Property after any such Share Exchange Event, any adjustment to be made with respect thereto and that all conditions precedent have been complied with, and shall promptly deliver notice thereof to all Holders. The Company shall cause notice of the execution of such supplemental indenture to be delivered to each Holder, within twenty days after execution thereof. Failure to deliver such notice shall not affect the legality or validity of such supplemental indenture.

(c) The Company shall not become a party to any Share Exchange Event unless its terms are consistent with this Section 9.07. None of the foregoing provisions shall affect the right of a Holder to convert its Notes into cash, shares of Common Stock or a combination of cash and shares of Common Stock, as applicable, as set forth in Section 9.01 and Section 9.02 prior to the Effective Date of such Share Exchange Event.

(d) The above provisions of this Section 9.07 shall similarly apply to successive Share Exchange Events.

Section 9.08 Certain Covenants

(a) The Company covenants that all shares of Common Stock issuable pursuant to an Interest Make-Whole Payment and/or pursuant to a Qualifying Fundamental Change Payment will be Freely Tradeable.

(b) The Company covenants that all shares of Common Stock issued upon conversion of Notes will be fully paid and non-assessable by the Company and free from all taxes, liens and charges with respect to the issue thereof.

(c) The Company covenants that, if any shares of Common Stock to be provided for the purpose of conversion of Notes hereunder require registration with or approval of any governmental authority under any federal or state law before such shares of Common Stock may be validly issued upon conversion, the Company will, to the extent then permitted by the rules and interpretations of the Commission, secure such registration or approval, as the case may be.

(d) The Company further covenants that if at any time the Common Stock shall be listed on any national securities exchange or automated quotation system the Company will list and keep listed, so long as the Common Stock shall be so listed on such exchange or automated quotation system, any Common Stock issuable upon conversion of the Notes.

Section 9.09 Responsibility of Trustee.

The Trustee and any other Conversion Agent shall not at any time be under any duty or responsibility to any Holder to determine the Conversion Rate (or any adjustment thereto) or whether any facts exist that may require any adjustment (including any increase) of the Conversion Rate, or with respect to the nature or extent or calculation of any such adjustment when made, or with respect to the method employed, or herein or in any supplemental indenture provided to be employed, in making the same. The Trustee and any other Conversion Agent shall not be accountable with respect to the validity or value (or the kind or amount) of any shares of Common Stock, or of any securities, property or cash that may at any time be issued or delivered upon the conversion of any Note; and the Trustee and any other Conversion Agent make no representations with respect thereto. Neither the Trustee nor any Conversion Agent shall be responsible for any failure of the Company to issue, transfer or deliver any shares of Common Stock or stock certificates or other securities or property or cash upon the surrender of any Note for the purpose of conversion or to comply with any of the duties, responsibilities or covenants of the Company contained in this Article. Without limiting the generality of the foregoing, neither the Trustee nor any Conversion Agent shall be under any responsibility to determine the correctness of any provisions contained in any supplemental indenture entered into pursuant to Section 9.07 relating either to the kind or amount of shares of stock or securities or property (including cash) receivable by Holders upon the conversion of their Notes after any event referred to in such Section 9.07 or to any adjustment to be made with respect thereto, may accept (without any independent investigation) as conclusive evidence of the correctness of any such provisions, and shall be protected in relying upon, the Officer's Certificate (which the Company shall be obligated to file with the Trustee prior to the execution of any such supplemental indenture) with respect thereto.

Section 9.10 Notice to Holders Prior to Certain Actions.

In case of any:

- (a) action by the Company or one of its Subsidiaries that would require an adjustment in the Conversion Rate pursuant to Section 9.04 or Section 9.11;
- (b) Share Exchange Event; or
- (c) voluntary or involuntary dissolution, liquidation or winding-up of the Company;

then, in each case (unless notice of such event is otherwise required pursuant to another provision of the Indenture, in which case the timing and delivery requirements of such provision shall supersede this Section 9.10), the Company shall cause to be filed with the Trustee and the Conversion Agent (if other than the Trustee) and to be delivered to each Holder, as promptly as possible but in any event at least 3 Business Days after the occurrence of such event. Failure to give such notice, or any defect therein, shall not affect the legality or validity of such action by the Company or one of its Subsidiaries, Share Exchange Event, dissolution, liquidation or winding-up.

Section 9.11 Stockholder Rights Plans.

If the Company has a stockholder rights plan in effect upon conversion of the Notes, each share of Common Stock, if any, issued upon such conversion shall be entitled to receive the appropriate number of rights, if any, and the certificates representing the Common Stock issued upon such conversion shall bear such legends, if any, in each case as may be provided by the terms of any such stockholder rights plan, as the same may be amended from time to time. However, if, prior to any conversion of Notes, the rights have separated from the shares of Common Stock in accordance with the provisions of the applicable stockholder rights plan, the Conversion Rate shall be adjusted at the time of separation as if the Company distributed to all or substantially all holders of the Common Stock Distributed Property as provided in Section 9.04(c), subject to readjustment in the event of the expiration, termination or redemption of such rights.

**ARTICLE 10.
REPURCHASE OF NOTES AT OPTION OF HOLDERS**

Section 10.01 Repurchase at Option of Holder Upon Fundamental Change.

(a) If a Fundamental Change occurs at any time prior to the Stated Maturity, each Holder shall have the right, at such Holder's option, to require the Company to repurchase for cash all of such Holder's Notes, or any portion thereof that is equal to \$1,000 or an integral multiple of \$1,000, on the date (the "*Fundamental Change Repurchase Date*") specified by the Company that is not less than 20 Business Days or more than 35 Business Days following the date of the Fundamental Change Company Notice at a repurchase price equal to 100% of the Principal Amount thereof, *plus* accrued and unpaid interest thereon to, but excluding, the Fundamental Change Repurchase Date (the "*Fundamental Change Repurchase Price*"), unless the Fundamental Change Repurchase Date falls after a Regular Record Date but on or prior to the Interest Payment Date to which such Regular Record Date relates, in which case the Company shall instead pay the full amount of accrued and unpaid interest (to, but not including, such Interest Payment Date) to Holders of record as of such Regular Record Date, and the Fundamental Change Repurchase Price shall be equal to 100% of the Principal Amount of Notes to be repurchased pursuant to this ARTICLE 10.

(b) Repurchases of Notes under this Section 10.01 shall be made, at the option of the Holder thereof, upon:

(i) delivery to the Trustee by a Holder of a duly completed notice (the "*Fundamental Change Repurchase Notice*") in the form set forth in Attachment 3 to the Form of Note attached hereto as Exhibit A, if the Notes are Physical Notes, or in compliance with the Applicable Procedures of the Depository, if the Notes are Global Notes, in each case at any time prior to the close of business on second Business Day immediately preceding the Fundamental Change Repurchase Date; and

(ii) delivery of the Notes, if the Notes are Physical Notes, to the paying agent at any time after delivery of the Fundamental Change Repurchase Notice (together with all necessary endorsements for transfer) at the Corporate Trust Office of the Paying Agent, or if the Notes are Global Notes, in compliance with the Applicable Procedures of the Depository, in each case such delivery being a condition to receipt by the Holder of the Fundamental Change Repurchase Price therefor.

The Fundamental Change Repurchase Notice in respect of any Notes to be repurchased that are Physical Notes shall state:

- (i) the certificate numbers of the Notes to be delivered for repurchase;
- (ii) the portion of the Principal Amount of Notes to be repurchased, which must be \$1,000 or an integral multiple thereof; and
- (iii) that the Notes are to be repurchased by the Company pursuant to the applicable provisions of the Notes and the Indenture;

provided, however, that if the Notes are Global Notes, Holders must surrender their Notes in accordance with the Applicable Procedures of the Depository.

Notwithstanding anything herein to the contrary, any Holder delivering to the Trustee (or, in the case of the Global Notes, otherwise in accordance with the Applicable Procedures of the Depository) the Fundamental Change Repurchase Notice contemplated by this Section 10.01 shall have the right to withdraw, in whole or in part, such Fundamental Change Repurchase Notice at any time prior to the close of business on the second Business Day immediately preceding the Fundamental Change Repurchase Date by delivery of a written notice of withdrawal to the Trustee in accordance with Section 10.02.

The Trustee shall promptly notify the Company of the receipt by it of any Fundamental Change Repurchase Notice or written notice of withdrawal thereof.

No Fundamental Change Repurchase Notice with respect to any Notes may be surrendered by a Holder thereof if such Holder has also surrendered a Repurchase Notice and has not validly withdrawn such Repurchase Notice in accordance with Section 10.02.

(c) On or before the 20th Business Day after the occurrence of the Effective Date of a Fundamental Change, the Company shall provide to all Holders of Notes, the Trustee, the Conversion Agent (if other than the Trustee) and the paying agent (if other than the Trustee) a notice (the “*Fundamental Change Company Notice*”) of the occurrence of the Effective Date of the Fundamental Change and of the repurchase right at the option of the Holders arising as a result thereof. In the case of Physical Notes, such notice shall be by first class mail or, in the case of Global Notes, such notice shall be delivered in accordance with the Applicable Procedures of the Depository. Each Fundamental Change Company Notice shall specify:

- (i) the events causing the Fundamental Change;
- (ii) the Effective Date of the Fundamental Change;
- (iii) the last date on which a Holder may exercise the repurchase right pursuant to this ARTICLE 10;
- (iv) the Fundamental Change Repurchase Price;

- (v) the Fundamental Change Repurchase Date;
- (vi) the name and address of the paying agent and the Conversion Agent, if applicable;
- (vii) if applicable, the Conversion Rate and any adjustments to the Conversion Rate;
- (viii) that the Notes with respect to which a Fundamental Change Repurchase Notice has been delivered by a Holder may be converted only if the Holder withdraws the Fundamental Change Repurchase Notice in accordance with the terms of the Indenture; and
- (ix) the procedures that Holders must follow to require the Company to repurchase their Notes.

No failure of the Company to give the foregoing notices and no defect therein shall limit the Holders' repurchase rights or affect the validity of the proceedings for the repurchase of the Notes pursuant to this Section 10.01. Notwithstanding anything to the contrary above, the Company will not be required to repurchase or make an offer to repurchase the Notes upon the occurrence of the Effective Date of a Fundamental Change if a third party makes such an offer in the same manner, at the same time and otherwise is in compliance with the requirements for an offer made by the Company as set forth in the Indenture, and such third party purchases all Notes properly surrendered and not validly withdrawn under its offer in the same manner, at the same time and otherwise is in compliance with the requirements for an offer made by the Company as set forth in the Indenture.

At the Company's written request, the Trustee shall give such notice in the Company's name and at the Company's expense; *provided, however,* that, in all cases, the text of such Fundamental Change Company Notice shall be prepared by the Company.

(d) Notwithstanding the foregoing, no Notes may be repurchased by the Company on any date at the option of the Holders upon a Fundamental Change if the Principal Amount of the Notes has been accelerated, and such acceleration has not been rescinded, on or prior to such date (except in the case of an acceleration resulting from a Default by the Company in the payment of the Fundamental Change Repurchase Price with respect to such Notes). The Paying Agent will promptly return to the respective Holders thereof any Physical Notes held by it during the acceleration of the Notes (except in the case of an acceleration resulting from a Default by the Company in the payment of the Fundamental Change Repurchase Price with respect to such Notes), or, with respect to any Global Notes, in compliance with the Applicable Procedures of the Depository any election by Holders with respect to such Notes shall be deemed to have been cancelled, and, upon such return or cancellation, as the case may be, the Fundamental Change Repurchase Notice with respect thereto shall be deemed to have been withdrawn.

Section 10.02 Withdrawal of Fundamental Change Repurchase Notice.

A Fundamental Change Repurchase Notice may be withdrawn (in whole or in part), with respect to any Physical Notes, by means of a written notice of withdrawal delivered to the Corporate Trust Office of the Paying Agent in accordance with this Section 10.02 at any time prior to the close of business on the second Business Day immediately preceding the Fundamental Change Repurchase Date specifying:

- (i) the Principal Amount of the Notes with respect to which such notice of withdrawal is being submitted, which must be \$1,000 or an integral multiple thereof,
- (ii) the certificate number of the Note in respect of which such notice of withdrawal is being submitted, and
- (iii) the Principal Amount, if any, of such Note that remains subject to the original Fundamental Change Repurchase Notice, which portion must be in Principal Amounts of \$1,000 or an integral multiple of \$1,000;

provided, however, that if the Notes are Global Notes, Holders must withdraw the relevant Fundamental Change Repurchase Notice in accordance with the Applicable Procedures of the Depository.

Section 10.03 Deposit of Fundamental Change Repurchase Price.

(a) The Company will deposit with the Trustee (or other paying agent appointed by the Company, or if the Company is acting as its own paying agent, set aside, segregate and hold in trust) on or prior to 11:00 a.m., New York City time, on the Business Day prior to the Fundamental Change Repurchase Date an amount of money sufficient to repurchase all of the Notes to be repurchased at the appropriate Fundamental Change Repurchase Price. Subject to receipt of funds and/or Notes by the Trustee (or other paying agent appointed by the Company), payment for Notes surrendered for repurchase (and not withdrawn prior to the close of business on the second Business Day immediately preceding the Fundamental Change Repurchase Date) will be made on the later of (i) with respect to Global Notes, the Fundamental Change Repurchase Date (*provided* that the Holder has satisfied the conditions in Section 10.01) pursuant to the Applicable Procedures of the Depository, and (ii) with respect to Physical Notes, the time of book-entry transfer or the delivery of such Note to the Trustee (or other paying agent appointed by the Company) by the Holder thereof in the manner required by Section 10.01 by mailing checks for the amount payable to the Holders of such Notes entitled thereto as they shall appear in the Note Register. The Trustee shall, promptly after such payment and upon written demand by the Company, return to the Company any funds in excess of the Fundamental Change Repurchase Price.

(b) If by 11:00 a.m. New York City time, on the Business Day prior to the Fundamental Change Repurchase Date, the Trustee (or other paying agent appointed by the Company) holds money sufficient to make payment on all the Notes or portions thereof that are to be repurchased on such Fundamental Change Repurchase Date, then, on the Fundamental Change Repurchase Date, with respect to the Notes that have been properly surrendered for repurchase and have not been validly withdrawn, (i) such Notes will cease to be outstanding, (ii) interest will cease to accrue on such Notes (whether or not book-entry transfer of the Notes has been made or the Notes have been delivered to the Trustee or paying agent) and (iii) all other rights of the Holders of such Notes will terminate (other than the right to receive the Fundamental Change Repurchase Price and, if the Fundamental Change Repurchase Date falls after a Regular Record Date but on or prior to the Interest Payment Date to which such Regular Record Date relates, accrued and unpaid interest payable to the Holders as of such Regular Record Date).

(c) Upon surrender of a Note that is to be repurchased in part pursuant to Section 10.01, the Company shall execute and the Trustee shall authenticate and deliver to the Holder a new Note in an authorized denomination equal in Principal Amount to the unredeemed portion of the Note surrendered.

Section 10.04 Covenant to Comply with Applicable Laws Upon Repurchase of Notes.

In connection with any repurchase offer pursuant to a Fundamental Change Repurchase Notice, the Company will, if required:

- (a) comply with tender offer rules under the Exchange Act that may then be applicable;
- (b) file a Schedule TO or any other required schedule under the Exchange Act; and
- (c) otherwise comply in all material respects with all federal and state securities laws in connection with any offer by the Company to repurchase the Notes;

in each case, so as to permit the rights and obligations under this ARTICLE 10 to be exercised in the time and in the manner specified in this ARTICLE 10.

To the extent that the provisions of any securities law or regulations conflict with the provisions of the Indenture relating to the Company's obligation to repurchase the Notes upon the occurrence of a Fundamental Change, the Company will comply with the applicable securities laws and regulations and will not be deemed to have breached the Company's obligations under such provisions of the Indenture by virtue of such conflict.

ARTICLE 11.
COVENANT DEFEASANCE

Section 4.3 through Section 4.9 of the Base Indenture are hereby replaced in full, solely with respect to the Notes, with the following:

Section 11.01 Option to Effect Covenant Defeasance.

The Company may, at the option of its Board of Directors evidenced by a resolution set forth in an Officers' Certificate, at any time, elect to have Section 11.02 hereof be applied to all outstanding Notes upon compliance with the conditions set forth below in this ARTICLE 11.

Section 11.02 Covenant Defeasance.

Upon the Company's exercise under Section 11.01 hereof of the option applicable to this Section 11.02, the Company shall, subject to the satisfaction of the conditions set forth in Section 11.03 hereof, be released from its obligations under the covenants contained in Section 5.07, Section 5.08, Section 5.09, Section 5.10, Section 5.11, Section 5.12, Section 5.13, Section 5.16, Section 5.17, Section 5.19 and Section 6.01 and ARTICLE 10 hereof with respect to the outstanding Notes on and after the date the conditions set forth in Section 11.03 are satisfied (hereinafter, "*Covenant Defeasance*"), and the Notes shall thereafter be deemed not "outstanding" for the purposes of any direction, waiver, consent or declaration or act of Holders (and the consequences of any thereof) in connection with such covenants, but shall continue to be deemed "outstanding" for all other purposes hereunder (it being understood that such Notes shall not be deemed outstanding for accounting purposes). For this purpose, Covenant Defeasance means that, with respect to the outstanding Notes, 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, 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 and such omission to comply shall not constitute a Default or an Event of Default under Section 7.01 hereof, but, except as specified above, the remainder of the Indenture and such Notes shall be unaffected thereby. In addition, upon the Company's exercise under Section 11.01 hereof of the option applicable to this Section 11.02 hereof, subject to the satisfaction of the conditions set forth in Section 11.03 hereof, Section 7.01(c) through Section 7.01(i) shall not constitute an Event of Default.

Section 11.03 Conditions to Covenant Defeasance.

The following shall be the conditions to the application of Section 11.02 hereof to the outstanding Notes:

(a) the Company must irrevocably deposit with the Trustee, in trust, for the benefit of the Holders, cash in United States dollars, non-callable Government Securities, or a combination thereof, in such amounts as will be sufficient, in the opinion of a nationally recognized investment bank, appraisal firm or firm of independent public accountants, to pay the principal of, premium, if any, and interest on the outstanding Notes, including the maximum amount potentially payable as of the date of such deposit as any Interest Make-Whole Payment or any Qualifying Fundamental Change Payment, on the stated dates for payment thereof;

(b) the Company shall have delivered to the Trustee an Opinion of Counsel in the United States reasonably acceptable to the Trustee confirming that the Holders of the outstanding Notes will not recognize income, gain or loss for federal income tax purposes as a result of such Covenant Defeasance and will be subject to federal income tax on the same amounts, in the same manner and at the same times as would have been the case if such Covenant Defeasance had not occurred;

(c) no Default or Event of Default shall have occurred and be continuing on the date of such deposit (other than a Default or Event of Default resulting from the incurrence of Indebtedness all or a portion of the proceeds of which will be used to defease the Notes pursuant to this ARTICLE 11 concurrently with such incurrence);

(d) such Covenant Defeasance shall not result in a breach or violation of, or constitute a default under, any material agreement or instrument (other than the Indenture) to which the Company is a party or by which the Company is bound;

(e) the Company shall have delivered to the Trustee an Opinion of Counsel (which may be subject to customary exceptions) to the effect that on the 91st day following the deposit, the trust funds will not be subject to the effect of any applicable bankruptcy, insolvency, reorganization or similar laws affecting creditors' rights generally;

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

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

Section 11.04 Deposited Money and Government Securities to be Held in Trust; Other Miscellaneous Provisions.

Subject to Section 11.05 hereof, all money and non-callable Government Securities (including the proceeds thereof) deposited with the Trustee (or other qualifying trustee, collectively for purposes of this Section 11.04, the "*Trustee*") pursuant to Section 11.03 hereof in respect of the outstanding Notes shall be held in trust and applied by the Trustee, in accordance with the provisions of such Notes and the Indenture, to the payment, either directly or through any Paying Agent (including the Company acting as Paying Agent) as the Trustee may determine, to the Holders of such Notes of all sums due and to become due thereon in respect of principal, premium, if any, and interest, but such money need not be segregated from other funds except to the extent required by law.

The Company shall pay and indemnify the Trustee against any tax, fee or other charge imposed on or assessed against the cash or non-callable Government Securities deposited pursuant to Section 11.03 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 Notes.

Anything in this ARTICLE 11 to the contrary notwithstanding, the Trustee shall deliver or pay to the Company from time to time upon the request of the Company any money or non-callable Government Securities held by it as provided in Section 11.03 hereof which, in the opinion of a nationally recognized firm of independent public accountants expressed in a written certification thereof delivered to the Trustee (which may be the opinion delivered under Section 11.03(a) hereof), are in excess of the amount thereof that would then be required to be deposited to effect an equivalent Legal Defeasance or Covenant Defeasance.

Section 11.05 Repayment to Company.

Any money deposited with the Trustee or any Paying Agent, or then held by the Company, in trust for the payment of the principal of, premium, if any, or interest on any Note and remaining unclaimed for two years after such principal, and premium, if any, or interest has become due and payable shall be paid to the Company on its request or (if then held by the Company) shall be discharged from such trust; and the Holder of such Note shall thereafter look only to the Company for payment thereof, 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.

ARTICLE 12.
AMENDMENT, SUPPLEMENT AND WAIVER

Article VIII of the Base Indenture is hereby replaced in full, solely with respect to the Notes, with the following:

Section 12.01 Without Consent of Holders of Notes.

Notwithstanding Section 12.02 of this First Supplemental Indenture, the Company and the Trustee may amend or supplement the Indenture or the Notes, without the consent of any Holder of a Note:

(a) to cure any ambiguity, defect or inconsistency; provided, however, that such cure does not, in the good faith opinion of the Board of Directors, adversely affect the interests of the Holders in any material respect;

(b) to provide for uncertificated Notes in addition to or in place of certificated Notes or to alter the provisions of ARTICLE 2 hereof (including the related definitions) in a manner that does not materially adversely affect any Holder;

(c) to provide for the assumption of the Company's obligations to the Holders of the Notes under the Indenture and the Notes by a successor to the Company pursuant to ARTICLE 6 of this First Supplemental Indenture;

(d) to make any change that would provide any additional rights or benefits to the Holders of the Notes or that does not adversely affect the legal rights hereunder or under, the Notes of any Holder of the Note; or

(e) to comply with requirements of the SEC in order to effect or maintain the qualification of the Indenture under the TIA.

In determining whether the Holders of the requisite Principal Amount of outstanding Notes are present at a meeting of Holders of Notes for quorum purposes or have consented to or voted in favor of any request, demand, authorization, direction, notice, consent, waiver, amendment or modification hereunder, Notes held for the account of the Company, or for any Person directly or indirectly controlling or controlled by or under direct or indirect common control with the Company, shall be disregarded and deemed not to be outstanding; provided, however, that no Holder shall be deemed to be directly or indirectly controlling or controlled by or under direct or indirect common control with the Company solely by reason of ownership of such Notes. A change in a defined term used in this Section shall be deemed to be a change to this Section.

Upon the request of the Company accompanied by a resolution of its Board of Directors authorizing the execution of any such amended or supplemental Indenture, and upon receipt by the Trustee of the documents described in Section 12.06 hereof, the Trustee shall join with the Company in the execution of any amended or supplemental Indenture authorized or permitted by the terms of the Indenture and to make any further appropriate agreements and stipulations that may be therein contained, but the Trustee shall not be obligated to enter into such amended or supplemental Indenture that affects its own rights, duties or immunities under the Indenture or otherwise.

Section 12.02 With Consent of Holders of Notes.

Except as provided below in this Section 12.02, the Company and the Trustee may amend or supplement the Indenture (including, without limitation, Section 5.10 and ARTICLE 10 of this First Supplemental Indenture) and the Notes with the consent of the Majority Holders voting as a single class (including consents obtained in connection with a tender offer or exchange offer for, or purchase of, the Notes), and, subject to Section 7.04 and Section 7.07 hereof, any existing Default or Event of Default (other than a Default or Event of Default in the payment of the Principal of, premium, if any, Interest or any other amounts due on the Notes, except a payment default resulting from an acceleration that has been rescinded pursuant to Section 7.02) or compliance with any provision of the Indenture and the Notes may be waived with the consent of the Majority Holders voting as a single class (including consents obtained in connection with a tender offer or exchange offer for, or purchase of, the Notes).

After an amendment, supplement or waiver under this Section becomes effective, the Company shall deliver to the Holders of Notes affected thereby a notice briefly describing the amendment, supplement or waiver. Any failure of the Company to send such notice, or any defect therein, shall not, however, in any way impair or affect the validity of any such amended or supplemental Indenture, Notes or waiver. Notwithstanding anything in the Indenture to the contrary, without the consent of each Holder affected, an amendment or waiver under this Section 12.02 may not (with respect to any Notes held by a non-consenting Holder):

- (a) reduce the Principal Amount of Notes whose Holders must consent to an amendment, supplement or waiver;
- (b) reduce the Principal of, Redemption Price of, Interest, premium, or any other amounts due hereunder or change the fixed maturity of any Note or alter or waive any of the provisions with respect to the redemption of the Notes except as provided above with respect to Section 5.10 and ARTICLE 10 hereof;
- (c) reduce the rate of or change the time for payment of Interest on any Note;
- (d) waive a Default or Event of Default in the payment of Principal of or premium, if any, Interest or any other amounts due on the Notes (except a rescission of acceleration of the Notes by the Majority Holders and a waiver of the payment default that resulted from such acceleration pursuant to Section 7.02);
- (e) make any Note payable in money or currency other than that stated in the Notes;
- (f) make any change in the provisions of the Indenture relating to waivers of past Defaults or the rights of Holders of Notes to receive payments of Principal or Interest or premium, if any, or any other amounts due on the Notes;
- (g) make any change in Section 7.04 or Section 7.07 hereof or in the amendment and waiver provisions of Section 12.01 or this Section 12.02;
- (h) impair the right to institute suit for the enforcement of any payment on or with respect to, or conversion of, any Note;
- (i) modify the Company's obligation to purchase Notes at the option of Holders or the Company's right to redeem the Notes, in a manner adverse to the Holders;
- (j) make any change that adversely affects the repurchase option of Holders upon a Fundamental Change;
- (k) reduce the percentage in aggregate Principal Amount of Notes outstanding necessary to modify or amend the Indenture or to waive any past default;
- (l) modify any provision of the Indenture or the Notes requiring notice to the Trustee in any manner adverse to Holders;
- (m) reduce the quorum or voting requirements under the Indenture;
- (n) modify in any manner the calculation of the Interest Make-Whole Payment or Qualifying Fundamental Change Payment; or
- (o) change the ranking of the Notes in a manner adverse to the Holders; or

(p) adversely affect the conversion rights of the Holders of the Notes set forth in ARTICLE 10 hereof.

Upon the request of the Company accompanied by a resolution of its Board of Directors authorizing the execution of any such amended or supplemental Indenture, and upon the filing with the Trustee of evidence satisfactory to the Trustee of the consent of the Holders holding the applicable percentage of Notes as aforesaid, and upon receipt by the Trustee, as applicable, of the documents described in Section 12.06 hereof, the Trustee shall join with the Company in the execution of such amended or supplemental Indenture, or the Notes unless such amended or supplemental Indenture directly affects the Trustee's own rights, duties or immunities under the Indenture or otherwise, in which case the Trustee may in its discretion, but shall not be obligated to, enter into such amended or supplemental Indenture.

It shall not be necessary for the consent of the Holders of Notes under this Section 12.02 to approve the particular form of any proposed amendment or waiver, but it shall be sufficient if such consent approves the substance thereof.

Section 12.03 Compliance with Trust Indenture Act.

Every amendment or supplement to the Indenture or the Notes shall be set forth in an amended or supplemental Indenture that complies with the TIA as then in effect.

Section 12.04 Revocation and Effect of Consents.

Until an amendment, supplement or waiver becomes effective, a consent to it by a Holder of a Note is a continuing consent by the Holder of a Note and every subsequent Holder of a Note or portion of a Note that evidences the same debt as the consenting Holder's Note, even if notation of the consent is not made on any Note. However, any such Holder of a Note or subsequent Holder of a Note may revoke the consent as to its Note if the Trustee or the relevant agent receives written notice of revocation before the date the waiver, supplement or amendment becomes effective. An amendment, supplement or waiver becomes effective in accordance with its terms and thereafter binds every Holder.

Section 12.05 Notation on or Exchange of Notes.

The Trustee may place an appropriate notation about an amendment, supplement or waiver on any Note thereafter authenticated. The Company in exchange for all Notes may issue and the Trustee shall, upon receipt of an Authentication Order, authenticate new Notes that reflect the amendment, supplement or waiver.

Failure to make the appropriate notation or issue a new Note shall not affect the validity and effect of such amendment, supplement or waiver.

Section 12.06 Trustee to Sign Amendments, etc.

The Trustee shall sign any amended or supplemental Indenture or Note authorized pursuant to this ARTICLE 12 if the amendment or supplement does not adversely affect the rights, duties, liabilities or immunities of the Trustee. The Company may not sign an amendment or supplemental Indenture until the Board of Directors approves it. In executing any amended or supplemental indenture, the Trustee shall be entitled to receive and (with respect to the Trustee, subject to Section 8.01 hereof) shall be fully protected in relying upon, in addition to the documents required by Section 17.06 and Section 17.07, an Officer's Certificate and an Opinion of Counsel stating that the execution of such amended or supplemental Indenture or Note, as applicable, is authorized or permitted by the Indenture and that such amended or supplemental Indenture or Note, as applicable, is the legal, valid and binding obligation of the Company enforceable against it in accordance with its terms, subject to customary exceptions, and complies with the provisions of the Indenture or the Note, as applicable.

ARTICLE 13.
[INTENTIONALLY OMITTED]

ARTICLE 14.
[INTENTIONALLY OMITTED]

ARTICLE 15.
SATISFACTION AND DISCHARGE

Section 4.1 through Section 4.2 of the Base Indenture are hereby replaced in full, solely with respect to the Notes, with the following:

Section 15.01 Satisfaction and Discharge.

The Indenture will be discharged and will cease to be of further effect (except as to any surviving rights of registration of transfer or exchange of Notes herein expressly provided for) as to all Notes issued hereunder, when:

(i) either:

(1) all Notes that have been authenticated (except lost, stolen or destroyed Notes that have been replaced or paid and Notes for whose payment money has theretofore been deposited in trust and thereafter repaid to the Company) have been delivered to the Trustee for cancellation; or

(2) all Notes that have not been delivered to the Trustee for cancellation have become due and payable and the Company has irrevocably deposited or caused to be deposited with the Trustee as trust funds in trust solely for the benefit of the Holders, cash in U.S. dollars, non-callable Government Securities, or a combination thereof, and/or (in the case of conversion) shares of Common Stock in such amounts as will be sufficient without consideration of any reinvestment of interest, to pay and discharge the entire Indebtedness on the Notes not delivered to the Trustee for cancellation for Principal, premium, if any, and accrued Interest to the Stated Maturity;

(ii) the Company has paid or caused to be paid all other sums payable by it under the Transaction Documents;

(iii) the Company has delivered irrevocable instructions to the Trustee under the Indenture to apply the deposited money toward the payment of the Notes at maturity; and

(iv) the Company has delivered an Officers' Certificate and an Opinion of Counsel to the Trustee stating that all conditions precedent to satisfaction and discharge have been satisfied.

Notwithstanding the satisfaction and discharge of the Indenture, the obligations of the Company to the Trustee under Section 8.07 hereof and, if money shall have been deposited with the Trustee pursuant to subclause (b) of clause (1) of this Section, the provisions of Section 15.02 and Section 11.05 shall survive.

Section 15.02 Application of Trust Money.

Subject to the provisions of Section 11.05, all money deposited with the Trustee pursuant to Section 15.01 shall be held in trust and applied by it, in accordance with the provisions of the Notes and the Indenture, 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 (and premium, if any) and Interest 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.

If the Trustee or Paying Agent is unable to apply any money or Government Securities in accordance with Section 15.01 by reason of any legal proceeding or by reason of any order or judgment of any court or governmental authority enjoining, restraining or otherwise prohibiting such application, the Company's obligations under the Indenture and the Notes shall be revived and reinstated as though no deposit had occurred pursuant to Section 15.01; provided that if the Company has made any payment of Principal of, premium, if any, or Interest on any Notes because of the reinstatement of its obligations, the Company shall be subrogated to the rights of the Holders of such Notes to receive such payment from the money or Government Securities held by the Trustee or Paying Agent.

ARTICLE 16.
MATURITY DATE, INTEREST, AND INTEREST RATE

Section 16.01 Maturity.

(a) The Company promises to pay an amount in cash representing the outstanding Principal Amount of the Notes plus accrued and unpaid Interest and any other amounts due on the Stated Maturity.

Section 16.02 Interest and Interest Rate. The following provision replaces Section 3.7 of the Base Indenture with respect to the Notes.

(a) The Notes shall accrue interest at the Interest Rate per annum. Interest on the Notes shall be payable quarterly in arrears on each Interest Payment Date to Holders of record on the Regular Record Date immediately preceding such Interest Payment Date. Interest will be computed on the basis of a 360-day year comprised of twelve 30-day months and, for partial months, on the basis of the number of days actually elapsed in a 30-day month. Interest on the Notes shall accrue from the most recent date to which Interest has been paid, or if no Interest has been paid, from the Issue Date, until the Principal Amount or Redemption Price, if applicable, is paid or duly made available for payment.

(b) If prior to any Interest Payment Date, any Special Interest has accrued pursuant to Section 7.03 hereof, and not theretofore been paid in full, any such Special Interest shall be due and payable on such Interest Payment Date, and shall be included in Interest payable on such Interest Payment Date and shall be paid in the manner provided for herein for the payment of Interest (unless otherwise specified in the applicable Transaction Document).

(c) Interest shall be payable on each Interest Payment Date, to each Holder on the applicable Interest Payment Date in cash ("*Cash Interest*").

(d) Cash Interest on any Note that is payable, and is punctually paid or duly provided for, on any Interest Payment Date shall be paid to the Holder of such Note on the Regular Record Date for such Interest at the office or agency of the Company maintained for such purpose. Each installment of Cash Interest on any Physical Note shall be made by check mailed to the address of the Holder specified in the Securities Register; provided, however, that, in respect of any Holder of Physical Notes with an aggregate Principal Amount in excess of \$2,000,000, at the request of such Holder in writing to the Company, Cash Interest on such Holder's Notes shall be paid by wire transfer in immediately available funds to such Holder's account within the United States in accordance with the written wire transfer instruction supplied by such Holder from time to time to the Trustee and Paying Agent (if different from the Trustee) at least ten days prior to the applicable Interest Payment Date. In the case of a permanent Global Note, Cash Interest payable on any Interest Payment Date will be paid to the Depository pursuant to the Applicable Procedures.

**ARTICLE 17.
MISCELLANEOUS**

Article I of the Base Indenture is hereby supplemented, with respect to the Notes, to add or, if indicated, replace the following covenants :

Section 17.01 [Intentionally Omitted].

Section 17.02 Notices. The following provision replaces Section 1.5 and Section 1.6 of the Base Indenture with respect to the Notes:

Any notice or communication by the Company or the Trustee to the others is duly given if in writing and delivered in Person or mailed by first class mail (registered or certified, return receipt requested), telecopier or overnight air courier guaranteeing next day delivery, to the others' address:

If to the Company:

Akoustis Technologies, Inc.
9805 Northcross Center Court
Suite A
Huntersville, NC 28078
Tel: (704)-997-5735
Email: dwright@akoustis.com
Attention: General Counsel

With a copy (which shall not constitute notice) to:

K&L Gates LLP
214 North Tryon Street
47th Floor
Charlotte, NC 28202
Tel: (704) 331-7406
Email: sean.jones@klgates.com
Attention: Sean Jones, Esq.

If to the Trustee:

The Bank of New York Mellon Trust Company, N.A.
10161 Centurion Parkway N.
Jacksonville, Florida 32256
Email: Kandy.Williams@bnymellon.com
Fax: (904) 645-1921
Attention: Corporate Trust Administration

The Company or the Trustee, by notice to the other, may designate additional or different addresses for subsequent notices or communications.

All notices and communications (other than those sent to Holders) shall be deemed to have been duly given: at the time delivered by hand, if personally delivered; five Business Days after being deposited in the mail, postage prepaid, if mailed; when receipt acknowledged, if telecopied; and the next Business Day after timely delivery to the courier, if sent by overnight air courier guaranteeing next day delivery.

Any notice or communication to a Holder with respect to Global Notes, delivered in accordance with the Applicable Procedures of the Depository and, with respect to Physical Notes, shall be mailed by first class mail, certified or registered, return receipt requested, or by overnight air courier guaranteeing next day delivery to its address shown on the register kept by the Registrar.

If a notice or communication is mailed in the manner provided above within the time prescribed, it is duly given, whether or not the addressee receives it.

If the Company delivers a notice or communication to Holders, it shall send a copy to the Trustee and each Agent at the same time.

The Trustee agrees to accept and act upon instructions or directions pursuant to the Indenture sent by unsecured e-mail, pdf, facsimile transmission or other similar unsecured electronic methods; provided, however, that the Trustee shall have received an incumbency certificate listing persons designated to give such instructions or directions and containing specimen signatures of such designated persons, which such incumbency certificate shall be amended and replaced whenever a person is to be added or deleted from the listing. If the Company elects to give the Trustee e-mail or facsimile instructions (or instructions by a similar electronic method) and the Trustee in its discretion elects to act upon such instructions, the Trustee's understanding of such instructions shall be deemed controlling. The Trustee shall not be liable for any losses, costs or expenses arising directly or indirectly from the Trustee's reliance upon and compliance with such instructions notwithstanding such instructions conflict or are inconsistent with a subsequent written instruction. The Company agrees to assume all risks arising out of the use of such electronic methods to submit instructions and directions to the Trustee, including without limitation the risk of the Trustee acting on unauthorized instructions, and the risk of interception and misuse by third parties.

Section 17.03 Communication by Holders of Notes with Other Holders of Notes.

Holders may communicate pursuant to TIA § 312(b) with other Holders with respect to their rights under the Indenture or the Notes. The Company, the Trustee, the Registrar and anyone else shall have the protection of TIA § 312(c).

Section 17.04 Legal Holidays. The following provision replaces Section 1.13 of the Base Indenture with respect to the Notes:

In any case where any payment date described in the Indenture is not a Business Day, then any action to be taken on such date need not be taken on such date, but may be taken on the next succeeding Business Day with the same force and effect as if taken on such date, and no interest shall accrue in respect of the delay.

Section 17.05 Calculations.

Except as otherwise provided herein, the Company shall be responsible for making all calculations called for under the Indenture and the Notes. Neither the Trustee, acting in any capacity under the Indenture, nor the Conversion Agent shall have any liability or responsibility for any such calculations or information underlying such calculations, or for monitoring the price of the Common Stock. The Company shall make all calculations in good faith and, absent manifest error, the Company's calculations shall be final and binding on Holders of Notes. The Company shall provide a schedule of its calculations to each of the Trustee and the Conversion Agent, and each of the Trustee and Conversion Agent is entitled to rely conclusively upon the accuracy of the Company's calculations without independent verification. The Trustee shall forward the Company's calculations to any Holder of Notes upon the written request of that Holder at the sole cost and expense of the Company.

Section 17.06 Certificate and Opinion as to Conditions Precedent. The following provision replaces Section 1.2 of the Base Indenture with respect to the Notes:

Upon any request or application by the Company to the Trustee to take any action under the Indenture or the Notes, the Company shall furnish to the Trustee:

(a) an Officers' Certificate in form and substance reasonably satisfactory to the Trustee (which shall include the statements set forth in Section 17.07 hereof) stating that, in the opinion of the signers, all conditions precedent and covenants, if any, provided for in the Indenture and the Notes relating to the proposed action have been satisfied; and

(b) an Opinion of Counsel in form and substance reasonably satisfactory to the Trustee (which shall include the statements set forth in Section 17.07 hereof) stating that, in the opinion of such counsel, all such conditions precedent and covenants provided for in the Indenture and the Notes relating to the proposed action have been satisfied.

Section 17.07 Statements Required in Certificate or Opinion.

Each certificate or opinion with respect to compliance with a condition or covenant provided for in the Indenture (other than a certificate provided pursuant to TIA § 314(a)(4)) shall comply with the provisions of TIA § 314(e) and shall include:

- (a) a statement that the Person making such certificate or opinion has read such covenant or condition;
- (b) a brief statement as to the nature and scope of the examination or investigation upon which the statements or opinions contained in such certificate or opinion are based;
- (c) a statement that, in the opinion of such Person, he or she has made such examination or investigation as is necessary to enable him to express an informed opinion as to whether or not such covenant or condition has been satisfied; and
- (d) a statement as to whether or not, in the opinion of such Person, such condition or covenant has been satisfied.

Section 17.08 Rules by Trustee and Agents.

The Trustee may make reasonable rules for action by or at a meeting of Holders. The Registrar or Paying Agent may make reasonable rules and set reasonable requirements for its functions.

Section 17.09 [Intentionally Omitted].

Section 17.10 [Intentionally Omitted].

Section 17.11 [Intentionally Omitted].

Section 17.12 [Intentionally Omitted].

Section 17.13 [Intentionally Omitted].

Section 17.14 Successors.

All agreements of the Company in the Indenture and the Notes shall bind its successors. All agreements of the Trustee in the Indenture shall bind its successors.

Section 17.15 [Intentionally Omitted].

Section 17.16 Counterpart Originals.

The parties may sign any number of copies of this First Supplemental Indenture. Each signed copy shall be an original, but all of them together represent the same agreement.

Section 17.17 Table of Contents, Headings, etc.

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

Section 17.18 Force Majeure.

In no event shall the Trustee, acting in any capacity under the Indenture, be responsible or liable for any failure or delay in the performance of its obligations hereunder arising out of or caused by, directly or indirectly, forces beyond its control, including, without limitation, strikes, work stoppages, accidents, acts of war or terrorism, civil or military disturbances, nuclear or natural catastrophes or acts of God, and interruptions, loss or malfunctions of utilities, communications or computer (software and hardware) services; it being understood that the Trustee shall use reasonable efforts which are consistent with accepted practices in the banking industry to resume performance as soon as practicable under the circumstances.

Section 17.19 Foreign Account Tax Compliance Act (FATCA).

In order to comply with applicable tax laws, rules and regulations (inclusive of directives, guidelines and interpretations promulgated by competent authorities) in effect from time to time ("*Applicable Law*"), the Company agrees (i) to use commercially reasonable efforts to provide to the Trustee, upon request, such information as it has in its possession about Holders and other applicable parties and/or transactions (including any modification to the terms of such transactions), so that the Trustee can determine whether it has tax related obligations under Applicable Law and (ii) that the Trustee shall be entitled to make any withholding or deduction from payments under the Indenture to the extent necessary to comply with Applicable Law, for which the Trustee shall not have any liability. The terms of this section shall survive the termination of the Indenture.

[Signatures on following page]

Dated as of October 23, 2018

AKOUSTIS TECHNOLOGIES, INC.

By: /s/ John T. Kurtzweil

Name: John T. Kurtzweil

Title: Chief Financial Officer

**THE BANK OF NEW YORK MELLON TRUST
COMPANY, N.A., as Trustee**

By: /s/ R. Tarnas

Name: R. Tarnas

Title: Vice President

[Signature Page to First Supplemental Indenture]

THIS NOTE IS A GLOBAL NOTE WITHIN THE MEANING OF THE INDENTURE HEREINAFTER REFERRED TO AND IS REGISTERED IN THE NAME OF A DEPOSITARY OR A NOMINEE THEREOF. THIS NOTE MAY NOT BE EXCHANGED IN WHOLE OR IN PART FOR A SECURITY REGISTERED, AND NO TRANSFER OF THIS SECURITY IN WHOLE OR IN PART MAY BE REGISTERED, IN THE NAME OF ANY PERSON OTHER THAN SUCH DEPOSITARY OR A NOMINEE THEREOF, EXCEPT IN THE LIMITED CIRCUMSTANCES DESCRIBED IN THE INDENTURE.

UNLESS THIS CERTIFICATE IS PRESENTED BY AN AUTHORIZED REPRESENTATIVE OF THE DEPOSITARY TRUST COMPANY, A NEW YORK CORPORATION (“DTC”), TO THE COMPANY OR ITS AGENT FOR REGISTRATION OF TRANSFER, EXCHANGE OR PAYMENT, AND ANY CERTIFICATE ISSUED IS REGISTERED IN THE NAME OF CEDE & CO. OR IN SUCH OTHER NAME AS IS REQUESTED BY AN AUTHORIZED REPRESENTATIVE OF DTC (AND ANY PAYMENT HEREUNDER IS MADE TO CEDE & CO. OR TO SUCH OTHER ENTITY AS IS REQUESTED BY AN AUTHORIZED REPRESENTATIVE OF DTC), ANY TRANSFER, PLEDGE, OR OTHER USE HEREOF FOR VALUE OR OTHERWISE BY OR TO ANY PERSON IS WRONGFUL INASMUCH AS THE REGISTERED OWNER HEREOF, CEDE & CO., HAS AN INTEREST HEREIN.

ANY TRANSFER OF ALL OR PART OF A NOTE MAY BE EFFECTED ONLY BY REGISTRATION OF SUCH TRANSFER ON THE REGISTER KEPT BY THE SECURITY REGISTRAR.

AKOUSTIS TECHNOLOGIES, INC.
6.5% Convertible Senior Note due 2023

No. [●] Initially \$[●]

CUSIP No. 00973N AC6

Akoustis Technologies, Inc., a corporation duly organized and validly existing under the laws of the State of Delaware (the “**Company**,” which term includes any successor corporation or other entity under the Indenture referred to on the reverse hereof), for value received hereby promises to pay to CEDE & CO., or registered assigns, the principal sum as set forth in the “Schedule of Exchanges of Notes” attached hereto, which amount, taken together with the principal amounts of all other outstanding Notes, shall not, unless permitted by the Indenture, exceed \$10,000,000 in aggregate at any time in accordance with the rules and the Applicable Procedures of the Depository, on November 30, 2023, and interest thereon as set forth below.

This Note shall bear interest at the rate of 6.5% per year from October 23, 2018 or from the most recent date to which interest had been paid or duly provided for to, but excluding, the next scheduled Interest Payment Date until November 30, 2023. Interest is payable quarterly in arrears on February 28, May 31, August 31 and November 30, commencing on February 28, 2019, to Holders of record at the close of business on the preceding February 15, May 15, August 15 or November 15 (whether or not such day is a Business Day), respectively. Special Interest will be payable as set forth in the within-mentioned Indenture, and any reference to interest on, or in respect of, any Note therein shall be deemed to include Special Interest if, in such context, Special Interest is, was or would be payable pursuant to the within-mentioned Indenture, and any express mention of the payment of Special Interest in any provision therein shall not be construed as excluding Special Interest in those provisions thereof where such express mention is not made.

The Company shall pay the Principal of and Interest on this Note, if and so long as such Note is a Global Note, in immediately available funds to the Depository or its nominee, as the case may be, as the registered Holder of such Note. The Company shall pay the Principal of and Interest on this Note, if and so long as such Note is a Physical Note by check mailed to the address of the Holder of this Note specified in the Securities Register, or, upon written application by a Holder of an aggregate Principal Amount of greater than U.S. \$2 million to the Registrar setting forth wire instructions not later than ten (10) days prior to the relevant payment date, such Holder may receive payment by wire transfer in immediately available funds, in such lawful money of the United States of America as at the time of payment shall be legal tender for the payment of public and private debts. The Company has initially designated the Trustee as its Paying Agent, Conversion Agent and Registrar in respect of the Notes and its agency in the Borough of Manhattan, The City of New York, as a place where Notes may be presented for payment or for registration of transfer and exchange. The Company may change any Paying Agent, Conversion Agent or Registrar without notice to any Holder. The Company or any of its Subsidiaries may act as Paying Agent or Registrar.

Reference is made to the further provisions of this Note set forth on the reverse hereof, including, without limitation, provisions giving the Holder of this Note the right to convert this Note into shares of Common Stock of the Company and the right of the Holder of this Note to require the Company to repurchase this Note and upon certain events, in each case, on the terms and subject to the limitations set forth in the Indenture. Such further provisions shall for all purposes have the same effect as though fully set forth at this place. Capitalized terms used in this Note and not defined in this Note shall have the respective meanings set forth in the Indenture.

This Note, and any claim, controversy or dispute arising under or related to this Note, shall be construed in accordance with and governed by the laws of the State of New York.

In the case of any conflict between this Note and the Indenture, the provisions of the Indenture shall control and govern.

This Note shall not be valid or become obligatory for any purpose until the certificate of authentication hereon shall have been signed manually or by facsimile by the Trustee or a duly authorized authenticating agent under the Indenture.

The Company will furnish to any Holder upon written request and without charge a copy of the Indenture. Requests may be made to:

Akoustis Technologies, Inc.
9805 Northcross Center Court
Suite A
Huntersville, NC 28078
Attention: President

[Remainder of page intentionally left blank]

IN WITNESS WHEREOF, the Company has caused this Note to be duly executed.

AKOUSTIS TECHNOLOGIES, INC.

By:
Name:
Title:

By:
Name:
Title:

[Signature Page – Akoustis Technologies, Inc. – 6.5% Convertible Senior Note due 2023]

Dated:

TRUSTEE'S CERTIFICATE OF AUTHENTICATION

THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A.
as Trustee, certifies that this is one of the Notes described
in the within-named Indenture.

By: _____
Authorized Signatory

[Signature Page – Akoustis Technologies, Inc. – 6.5% Convertible Senior Note due 2023]

AKOUSTIS TECHNOLOGIES, INC.
6.5% Convertible Senior Note due 2023

This Note is one of a duly authorized issue of Notes of the Company, designated as its 6.5% Convertible Senior Notes due 2023 (the “**Notes**”), limited to the aggregate principal amount of \$10,000,000, all issued or to be issued under and pursuant to an Indenture dated as of October 23, 2018 (the “**Base Indenture**” as it may be amended or supplemented from time to time), by and among the Company and The Bank of New York Mellon Trust Company, N.A., as trustee (the “**Trustee**”), as supplemented by the First Supplemental Indenture dated as of October 23, 2018, between the Company and the Trustee (the “**First Supplemental Indenture**”, and together with the Base Indenture, the “**Indenture**”) to which Indenture and all indentures supplemental thereto reference is hereby made for a description of the rights, limitations of rights, obligations, duties and immunities thereunder of the Trustee, the Company and the Holders of the Notes.

The indebtedness evidenced by the Notes constitute a senior general unsecured obligation of the Company ranking equally in right of payment with all existing and future senior unsecured indebtedness of the Company and ranking senior in right of payment to any future indebtedness of the Company that is expressly made subordinate to the Notes by the terms of such indebtedness. The Company has the right to incur capital lease obligations and purchase money indebtedness for the purpose of financing the purchase price or cost of equipment used in its and its subsidiaries’ production lines and up to an additional \$1 million of such indebtedness for other purposes. The Notes rank junior to any such indebtedness to the extent of the assets acquired with the proceeds thereof.

The interest rate to be borne by this Note shall be subject to increase as required to pay Special Interest pursuant to, and as set forth in, the Indenture.

The Notes may not be redeemed at the option of the Company at any time prior to November 30, 2019.

At any time and from time to time on or after November 30, 2019 the Company may, pursuant to Article 3 of the Indenture, redeem all or a portion of the Notes at a redemption price equal to 100% of the Principal Amount plus accrued and unpaid Interest on such Principal if any, as follows:

- (i) on or after November 30, 2019, if the Closing Sale Price of the Common Stock is greater than 175% of the then effective Conversion Price for each of 20 of any 30 consecutive Trading Days immediately preceding the applicable Optional Redemption Notice;
- (ii) on or after November 30, 2020, if the Closing Sale Price of the Common Stock is greater than 150% of the then effective Conversion Price for each of 20 of any 30 consecutive Trading Days immediately preceding the applicable Optional Redemption Notice;
- (iii) on or after November 30, 2021, if the Closing Sale Price of the Common Stock is greater than 125% of the then effective Conversion Price for each of 20 of any 30 consecutive Trading Days immediately preceding the applicable Optional Redemption Notice;

If the Company elects to exercise the Optional Redemption Right, the Company will make an Interest Make-Whole Payment to the Holder of such redeemed Note in cash in an amount equal to the sum of the remaining scheduled payments of Interest that would have been made on the Notes to be converted had such Notes remained outstanding from the Optional Redemption Date through and including the Stated Maturity, provided, that the Company shall have the option to make any Interest Make-Whole Payment in Freely Tradeable Common Stock, as determined by the Company pursuant to, and to the extent permitted by, the Indenture.

On November 30, 2021, the Holder may, pursuant to Section 3.08 of the Indenture, elect to require the Company to redeem all (but not less than all) of the Notes at a purchase price in cash equal to 100% of the Principal Amount to be repurchased, plus accrued and unpaid Interest to, and including, the Holder Optional Redemption Date.

In case certain Events of Default shall have occurred and be continuing, the Principal of, and Interest on, all Notes may be declared, by either the Trustee or Holders of at least 25% in aggregate Principal amount of Notes then outstanding, and upon said declaration shall become, due and payable, in the manner, with the effect and subject to the conditions and certain exceptions set forth in the Indenture.

Subject to the terms and conditions of the Indenture, the Company will make all payments and deliveries in respect of the Fundamental Change Repurchase Price on the Fundamental Change Repurchase Date and the Principal amount on the Stated Maturity, as the case may be, to the Holder who surrenders a Note to a Paying Agent to collect such payments in respect of the Note. The Company shall pay cash amounts in money of the United States that at the time of payment is legal tender for payment of public and private debts.

The Indenture contains provisions permitting the Company and the Trustee in certain circumstances, without the consent of the Holders of the Notes, and in certain other circumstances, with the consent of the Majority Holders, evidenced as in the Indenture provided, to modify the terms of the Indenture and the Notes as described therein. It is also provided in the Indenture that, subject to certain exceptions, the Majority Holders may on behalf of the Holders of all of the Notes waive any past Default or Event of Default under the Indenture and its consequences.

Each Holder shall have the right to receive payment or delivery, of (x) the Principal (including the Fundamental Change Repurchase Price, if applicable) of, (y) accrued and unpaid Interest, if any, on, and (z) the consideration due upon conversion of, this Note at the place, at the respective times, at the rate and in the lawful money and/or Freely Tradeable Common Stock, as the case may be, as determined by the Company pursuant to, and to the extent permitted by, the Indenture.

The Notes are issuable in registered form without coupons in denominations of \$1,000 principal amount and integral multiples thereof. At the office or agency of the Company designated by the Company for such purpose under the Indenture, and in the manner and subject to the limitations provided in the Indenture, Notes may be exchanged for a like aggregate Principal Amount of Notes of other authorized denominations, without payment of any service charge but, if required by the Company or Trustee, with payment of a sum sufficient to cover any transfer or similar tax that may be imposed in connection therewith as a result of the name of the Holder of the new Notes issued upon such exchange of Notes being different from the name of the Holder of the old Notes surrendered for such exchange. The Trustee and the Registrar may require a Holder, among other things, to furnish appropriate endorsements and transfer documents.

Subject to the provisions of the Indenture, the Holder hereof has the right, at its option, prior to the close of business on the Business Day immediately preceding the Maturity Date, to convert any Notes or portion thereof that is \$1,000 or an integral multiple thereof, into shares of Common Stock at the Conversion Rate specified in the Indenture, as adjusted from time to time as provided in the Indenture.

Upon the occurrence of a Fundamental Change, the Holder has the right, at such Holder's option, to require the Company to repurchase for cash all of such Holder's Notes or any portion thereof (in Principal Amounts of \$1,000 or integral multiples thereof) on the Fundamental Change Repurchase Date at a price equal to the Fundamental Change Repurchase Price. If any Holder elects to convert its Note in connection with a Qualifying Fundamental Change, the Company will make a Qualifying Fundamental Change Payment as provided in the Indenture.

If money for the payment of Principal or Interest, if any, remains unclaimed for two years, the Trustee or Paying Agent shall pay the money back to the Company at its written request, subject to applicable unclaimed property laws. After that, Holders entitled to money must look to the Company for payment as general creditors unless applicable abandoned property law designates another person.

Pursuant to a recommendation promulgated by the Committee on Uniform Security Identification Procedures, the Company has caused CUSIP numbers to be printed on the Notes and the Trustee may use CUSIP numbers in notices of redemption or repurchase as a convenience to Holders. No representation is made as to the accuracy of such numbers either as printed on the Notes or as contained in any notice of redemption and reliance may be placed only on the other identification numbers placed thereon.

ABBREVIATIONS

The following abbreviations, when used in the inscription of the face of this Note, shall be construed as though they were written out in full according to applicable laws or regulations:

TEN COM = as tenants in common

UNIF GIFT MIN ACT = Uniform Gifts to Minors Act

CUST = Note Custodian

TEN ENT = as tenants by the entireties

JT TEN = joint tenants with right of survivorship and not as tenants in common

Additional abbreviations may also be used though not in the above list.

AKOUSTIS TECHNOLOGIES, INC.
6.5% Convertible Senior Note due 2023

SCHEDULE OF EXCHANGES OF NOTES

The initial Principal Amount of this Global Note is [_____] (\$[●]). The following increases or decreases in this Global Note have been made:

Date of exchange	Amount of decrease in principal amount of this Global Note	Amount of increase in principal amount of this Global Note	Principal amount of this Global Note following such decrease or increase	Signature of authorized signatory of Trustee or Note Custodian

AKOUSTIS TECHNOLOGIES, INC.
6.5% Convertible Senior Note due 2023

ATTACHMENT 1

FORM OF NOTICE OF CONVERSION

To: Akoustis Technologies, Inc.
9805 Northcross Center Court
Suite A
Huntersville, NC 28078

The Bank of New York Mellon Trust Company, N.A., as Conversion Agent
10161 Centurion Parkway N.
Jacksonville, Florida 32256
Attention: Corporate Trust Administration

The undersigned registered owner of this Note hereby exercises the option to convert this Note, or the portion hereof (that is \$1,000 in principal amount or an integral multiple thereof) below designated, into shares of Common Stock in accordance with the terms of the Indenture referred to in this Note, and directs that the shares of Common Stock issuable and deliverable upon such conversion, together with any cash for any fractional share of Common Stock and cash payable for a Qualifying Fundamental Change Payment, if applicable, and any Notes representing any unconverted Principal amount hereof, be issued and delivered to the registered Holder hereof unless a different name has been indicated below. If any shares of Common Stock or any portion of this Note not converted are to be issued in the name of a Person other than the undersigned, the undersigned will pay all documentary, stamp or similar issue or transfer taxes, if any in accordance with Section 9.02(d) and Section 9.02(e) of the Indenture. Any amount required to be paid to the undersigned on account of Interest accompanies this Note. Capitalized terms used herein but not defined shall have the meanings ascribed to such terms in the Indenture.

Dated:

Signature(s)

Signature Guarantee

Signature(s) must be guaranteed by an eligible Guarantor Institution (banks, stock brokers, savings and loan associations and credit unions) with membership in an approved signature guarantee medallion program pursuant to Securities and Exchange Commission Rule 17Ad-15 if shares of Common Stock are to be issued, or Notes are to be delivered, other than to and in the name of the registered holder.

Fill in for registration of shares if to be issued, and Notes if to be delivered, other than to and in the name of the registered holder:

(Name)

(Street Address)

(City, State and Zip Code)

Please print name and address

Principal amount to be converted (if less than all): \$,000

NOTICE: The above signature(s) of the Holder(s) hereof must correspond with the name as written upon the face of the Note in every particular without alteration or enlargement or any change whatever.

Social Security or Other Taxpayer Identification Number

**AKOUSTIS TECHNOLOGIES, INC.
6.5% Convertible Senior Note due 2023**

ATTACHMENT 2

FORM OF REPURCHASE NOTICE

To: Akoustis Technologies, Inc.
9805 Northcross Center Court
Suite A
Huntersville, NC 28078

The Bank of New York Mellon Trust Company, N.A., as Paying Agent
10161 Centurion Parkway N.
Jacksonville, Florida 32256
Attention: Corporate Trust Administration

The undersigned registered owner of this Note hereby acknowledges receipt of a Holder Optional Redemption Notice from Akoustis Technologies, Inc. (the “**Company**”) specifying the Holder Optional Redemption Date and requests and instructs the Company to pay to the registered holder hereof in accordance with Section 3.08 of the Indenture referred to in this Note (1) the entire Principal amount of this Note, and (2) if such Holder Optional Redemption Date does not fall during the period after a Regular Record Date and on or prior to the corresponding Interest Payment Date, accrued and unpaid Interest, if any, thereon to, and including, such Holder Optional Redemption Date. Capitalized terms used herein but not defined shall have the meanings ascribed to such terms in the Indenture.

In the case of Physical Notes, the certificate numbers of the Notes to be repurchased are as set forth below:

Dated:

Signature(s)

Social Security or Other Taxpayer Identification Number

NOTICE: The above signature(s) of the Holder(s) hereof must correspond with the name as written upon the face of the Note in every particular without alteration or enlargement or any change whatever.

AKOUSTIS TECHNOLOGIES, INC.
6.5% Convertible Senior Note due 2023

ATTACHMENT 3

FORM OF FUNDAMENTAL CHANGE REPURCHASE NOTICE

To: Akoustis Technologies, Inc.
9805 Northcross Center Court
Suite A
Huntersville, NC 28078

The Bank of New York Mellon Trust Company, N.A., as Paying Agent
10161 Centurion Parkway N.
Jacksonville, Florida 32256
Attention: Corporate Trust Administration

The undersigned registered owner of this Note hereby acknowledges receipt of a notice from Akoustis Technologies, Inc. (the “**Company**”) as to the occurrence of a Fundamental Change with respect to the Company and specifying the Fundamental Change Repurchase Date and requests and instructs the Company to pay to the registered holder hereof in accordance with Section 10.01 of the Indenture referred to in this Note (1) the entire Principal amount of this Note, or the portion thereof (that is \$1,000 principal amount or an integral multiple thereof) below designated, and (2) if such Fundamental Change Repurchase Date does not fall during the period after a Regular Record Date and on or prior to the corresponding Interest Payment Date, accrued and unpaid Interest, if any, thereon to, but excluding, such Fundamental Change Repurchase Date. Capitalized terms used herein but not defined shall have the meanings ascribed to such terms in the Indenture.

In the case of Physical Notes, the certificate numbers of the Notes to be repurchased are as set forth below:

Dated:

Signature(s)

Social Security or Other Taxpayer Identification Number

Principal amount to be repurchased (if less than all): \$,000

NOTICE: The above signature(s) of the Holder(s) hereof must correspond with the name as written upon the face of the Note in every particular without alteration or enlargement or any change whatever.

AKOUSTIS TECHNOLOGIES, INC.
6.5% Convertible Senior Note due 2023

ATTACHMENT 4

FORM OF ASSIGNMENT AND TRANSFER

For value received, hereby sell(s), assign(s) and transfer(s) unto (Please insert social security or Taxpayer Identification Number of assignee) the within Note, and hereby irrevocably constitutes and appoints as attorney to transfer the said Note on the books of the Company, with full power of substitution in the premises.

Dated:

Signature(s)

Signature Guarantee

Signature(s) must be guaranteed by an eligible Guarantor Institution (banks, stock brokers, savings and loan associations and credit unions) with membership in an approved signature guarantee medallion program pursuant to Securities and Exchange Commission Rule 17Ad-15 if Notes are to be delivered, other than to and in the name of the registered holder.

NOTICE: The signature on the assignment must correspond with the name as written upon the face of the Note in every particular without alteration or enlargement or any change whatever.

AKOUSTIS TECHNOLOGIES, INC.

and

**THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A.
as Trustee**

FIRST SUPPLEMENTAL INDENTURE

dated as of October 18, 2018

to

INDENTURE

dated as of May 14, 2018

6.5% CONVERTIBLE SENIOR SECURED NOTES DUE 2023

THIS FIRST SUPPLEMENTAL INDENTURE dated as of October 18, 2018 (this “*Supplemental Indenture*”), is between AKOUSTIS TECHNOLOGIES, INC., a Delaware corporation (hereinafter called the “*Company*”), the guarantors listed on the signature page hereto (the “*Guarantors*”) and THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A., as trustee (the “*Trustee*”) under the Indenture, dated as of May 14, 2018 (the “*Indenture*”), among the Company, the Guarantors from time to time party thereto and THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A., as Trustee and as collateral agent. Capitalized terms used in this Supplemental Indenture and not otherwise defined herein shall have the meanings assigned to such terms in the Indenture.

RECITALS

WHEREAS, pursuant to the Indenture, the Company issued its 6.5% Convertible Senior Secured Notes due 2023 (the “*Notes*”) of which \$15,000,000 in aggregate principal amount are currently outstanding under the Indenture;

WHEREAS, Section 12.02 of the Indenture provides that the Company and the Trustee, with consent of the Majority Holders, may amend, supplement or waive compliance with any provision of the Indenture, subject to the limitations set forth therein;

WHEREAS, the Company desires to issue and sell convertible notes in the aggregate principal amount of \$10,000,000 (the “*2018 Additional Notes*”) pursuant to that certain Indenture to be dated on or about October 23, 2018, by and between the Company and The Bank of New York Mellon Trust Company, N.A., as trustee, as supplemented by that certain Supplemental Indenture to be dated on or about October 23, 2018, by and between the Company and The Bank of New York Mellon Trust Company, N.A., as trustee;

WHEREAS, the Company desires to amend the Indenture, as set forth in Article I of this Supplemental Indenture, to permit issuance of the 2018 Additional Notes and certain other amendments as further described herein (collectively, the “*Proposed Amendments*”);

WHEREAS, the Company has solicited the consents of, among others, Holders constituting not less than the Majority Holders voting as a single class to the Proposed Amendments and to the execution of this Supplemental Indenture;

WHEREAS the Company has now obtained such consents from Holders constituting not less than the Majority Holders voting as a single class, and as such, this Supplemental Indenture, the Proposed Amendments and the Trustee’s entry into this Supplemental Indenture are authorized pursuant to Section 12.02 of the Indenture;

WHEREAS, the Company has requested that the Trustee execute and deliver this Supplemental Indenture; and

WHEREAS, pursuant to Section 12.02 of the Indenture, the execution and delivery of this Supplemental Indenture has been duly authorized by the parties hereto and all other acts necessary to make this Supplemental Indenture a valid and binding supplement to the Indenture, effectively amending the Indenture as set forth herein, have been duly taken by the Company and the Guarantors.

NOW, THEREFORE, in consideration of the premises and the covenants and agreements contained herein, and for other good and valuable consideration, the receipt of which is hereby acknowledged, and for the equal and proportionate benefit of the Holders of the Notes, each party hereto hereby agrees as follows:

ARTICLE I
AMENDMENTS TO INDENTURE

Section 1.01 Amendments to the Indenture. Pursuant to Section 12.02 of the Indenture, the Company and the Trustee (in the case of the Trustee, acting in reliance upon the instructions and directions of Holders constituting not less than the Majority Holders obtained by the Company), hereby agree to amend or supplement certain provisions of the Indenture as follows:

(a) Amendment to Section 5.07. Section 5.07 of the Indenture is amended by amending and restating clause (iii) to read as follows:

“(iii) make any payment on or with respect to, or purchase, redeem, defease or otherwise acquire or retire for value any Indebtedness of the Company or any of its Subsidiaries that is contractually subordinated to the Notes or any Note Guarantee (excluding any intercompany Indebtedness between or among the Company and any of its Subsidiaries), except regularly scheduled payments of interest and a payment of principal at the maturity date; or”

(b) Amendment to Section 5.08. Section 5.08 of the Indenture is amended by (i) deleting the “and” at the end of subsection (x) thereof, (ii) deleting the period at the end of subsection (xi) thereof and substituting “; and” therefor and (iii) adding the following new subsection (xii) immediately thereafter:

“(xii) the 2018 Additional Notes and the 2018 Additional Notes Indenture and any amendments, restatements, modifications, renewals, supplements, refundings, replacements or refinancings of the foregoing, provided, that the amendments, restatements, modifications, renewals, supplements, refundings, replacements or refinancings are not materially more restrictive with respect to such dividend and other payment restriction than those contained therein on the date of their initial effectiveness.”

(c) Amendment to Section 5.09. Section 5.09 of the Indenture is amended by (i) deleting the period at the end of subsection (xii) thereof and substituting “; and” therefor and (ii) adding the following new subsection (xiii) immediately thereafter:

“(xiii) the incurrence by the Company of unsecured Indebtedness arising from the Company’s 6.5% Convertible Notes, in the aggregate principal amount of \$10,000,000 (and any notes issued in substitution or replacement thereof in accordance with the 2018 Additional Notes Indenture, the “*2018 Additional Notes*”), governed by that certain Indenture to be dated on or about October 23, 2018, by and between the Company and The Bank of New York Mellon Trust Company, N.A., as trustee, as supplemented by that certain Supplemental Indenture dated on or about October 23, 2018, by and between the Company and The Bank of New York Mellon Trust Company, N.A., as trustee, each as amended, restated, supplemented or otherwise modified from time to time (collectively, the “*2018 Additional Notes Indenture*”), and the incurrence of Permitted Refinancing Indebtedness in respect thereof.”

(d) Amendment to Section 13.02. Section 13.02 of the Indenture is amended by deleting clause (a) thereof in its entirety and substituting the following therefor:

“(a) The Company shall furnish to the Collateral Agent and the Trustee contemporaneously with the execution and delivery of this Indenture and promptly after the execution and delivery of any Collateral Documents an Opinion of Counsel (i) stating that in the opinion of such counsel such Collateral Documents are effective to create a Lien in the collateral described therein to the extent that the Company or Guarantor, as applicable, has rights in or the power to transfer such collateral and creation of a Lien in such collateral is governed by Article 9 of the UCC; and (ii) stating that in the opinion of such counsel, all action has been taken with respect to the filing of any financing statements as is necessary to perfect the Lien in that portion of the collateral (x) in which the Company or Guarantor, as applicable, has rights or the power to transfer, (y) the creation and perfection of a Lien which is governed by Article 9 of the UCC and (z) in which a Lien can be perfected by filing a financing statement under the UCC.”

**ARTICLE II
MISCELLANEOUS**

Section 2.01 Capitalized Terms. Any capitalized term used herein and not otherwise defined herein shall have the meaning assigned to such term in the Indenture.

Section 2.02 Conditions Precedent. The Company represents and warrants that each of the conditions precedent to the amendment and supplement of the Indenture (including such conditions pursuant to Sections 12.02, 12.06, 17.06 and 17.07 of the Indenture) have been satisfied in all respects. Pursuant to Section 12.02 of the Indenture, Holders constituting not less than the Majority Holders voting as a single class have consented to the Proposed Amendments and authorized and directed the Trustee to execute this Supplemental Indenture and to take all steps necessary to give effect to, and permit, the Proposed Amendments.

Section 2.03 Corresponding Amendments. With effect on and from the date hereof, each Global Note shall be deemed supplemented, modified and amended in such manner as necessary to make the terms of such Global Note consistent with the terms of the Indenture, as amended by this Supplemental Indenture. To the extent of any conflict between the terms of the Notes and the terms of the Indenture, as amended by this Supplemental Indenture, the terms of the Indenture, as amended by this Supplemental Indenture, shall govern and be controlling.

Section 2.04 Instruments To Be Read Together; Entire Agreement. This Supplemental Indenture is executed as and shall constitute an indenture supplemental to and in implementation of the Indenture, and said Indenture and this Supplemental Indenture shall henceforth be read together. This Supplemental Indenture constitutes the entire agreement of the parties hereto with respect to the amendments to the Indenture set forth herein.

Section 2.05 Ratification of Indenture. The Indenture, as amended by this Supplemental Indenture, is in all respects ratified and confirmed and all the terms, conditions and provisions thereof shall remain in full force and effect. Upon and after the execution of this Supplemental Indenture, each reference in the Indenture, as amended by this Supplemental Indenture, to "this Indenture," "hereunder," "hereof" or words of like import referring to the Indenture shall mean and be a reference to the Indenture, as amended by this Supplemental Indenture. This Supplemental Indenture shall form a part of the Indenture for all purposes, and every Holder shall be bound hereby.

Section 2.06 Headings. The headings of the Articles and Sections of this Supplemental Indenture have been inserted for convenience of reference only, and are not to be considered a part hereof and shall in no way modify or restrict any of the terms and provisions hereof.

Section 2.07 Responsibility of Trustee. The recitals and statements contained herein shall be taken as the statements of the Company, and the Trustee makes no representation with respect to any such matters and assumes no responsibility for their correctness. The Trustee makes no representations as to the validity, adequacy or sufficiency of this Supplemental Indenture. The Trustee accepts the amendments of the Indenture effected by this Supplemental Indenture and agrees to execute the trust created by the Indenture as hereby amended, but on the terms and conditions set forth in the Indenture, including the terms and provisions defining and limiting its liabilities and responsibilities in the performance of the trust created by the Indenture as hereby amended. For the avoidance of doubt, the Trustee, by executing this Supplemental Indenture in accordance with the terms of the Indenture, does not agree to undertake additional actions nor does it consent to any transaction beyond what is expressly set forth in this Supplemental Indenture, and the Trustee reserves all rights and remedies under the Indenture.

Section 2.08 Successors and Assigns. All covenants and agreements in this Supplemental Indenture by the Company shall bind its successors and assigns. All agreements of the Trustee in this Supplemental Indenture shall bind its successors.

Section 2.09 Severability. In case any provision in this Supplemental Indenture or in the Notes 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 2.10 Benefits of Supplemental Indenture. Nothing in this Supplemental Indenture, express or implied, shall give to any Person (other than the parties hereto and their successors hereunder and the Holders) any benefit or any legal or equitable right, remedy or claim under this Supplemental Indenture.

Section 2.11 Governing Law. THE INTERNAL LAW OF THE STATE OF NEW YORK SHALL GOVERN AND BE USED TO CONSTRUE THIS SUPPLEMENTAL INDENTURE WITHOUT REGARD TO PRINCIPLES OF CONFLICTS OF LAW THAT WOULD APPLY ANY OTHER LAW.

Section 2.12 Counterparts. The parties may sign any number of copies of this Supplemental Indenture. Each signed copy shall be an original, but all of them together represent the same agreement.

[Signature pages follow]

IN WITNESS WHEREOF, the parties hereto have caused this Supplemental Indenture to be duly executed, all as of the date first written above.

COMPANY:

AKOUSTIS TECHNOLOGIES, INC.

By: /s/ John T. Kurtzweil

Name: John T. Kurtzweil

Title: Chief Financial Officer

GUARANTOR:

AKOUSTIS, INC.

By: /s/ John T. Kurtzweil

Name: John T. Kurtzweil

Title: Chief Financial Officer

TRUSTEE:

THE BANK OF NEW YORK MELLON TRUST COMPANY, N.A.,
as Trustee

By: /s/ R. Tarnas

Name: R. Tarnas

Title: Vice President



October 23, 2018

Akoustis Technologies, Inc.
9805 Northcross Center Court, Suite A
Huntersville, NC 28078

Ladies and Gentlemen:

We have acted as special counsel to Akoustis Technologies, Inc., a Delaware corporation (the "Company"), in connection with the issuance and sale by the Company of up to 8,337,500 shares (the "Shares") of the Company's common stock, \$0.001 par value per share, pursuant to the Underwriting Agreement dated October 19, 2018 (the "Underwriting Agreement") by and among the Company and Oppenheimer & Co. Inc., as representative of the several underwriters named therein. In accordance with the Securities Act of 1933, as amended (the "Securities Act"), and the rules and regulations promulgated thereunder, the Company has prepared and filed with the Securities and Exchange Commission (the "SEC"), on October 1, 2018, a Registration Statement on Form S-3 (Registration No. 333-227637) (the "Registration Statement"), including a preliminary prospectus supplement dated October 18, 2018 (the "Preliminary Prospectus Supplement") and a final prospectus supplement dated October 19, 2018 (the "Final Prospectus Supplement").

You have requested our opinion as to the matters set forth below in connection with the issuance of the Shares. For purposes of rendering that opinion, we have examined (i) the Registration Statement, (ii) the prospectus dated October 5, 2018, insofar as it pertains to the offering of the Shares, as supplemented by the Final Prospectus Supplement, (iii) the Underwriting Agreement, (iv) the Company's Certificate of Incorporation, (v) its Bylaws, (vi) the stock ledger and (vii) the corporate action of the Company's Board of Directors which provides for the issuance of the Shares, and we also have made such investigation of law as we have deemed appropriate. We have examined and relied upon certificates of public officials and such other documents and instruments as we have deemed necessary or advisable for the purpose of rendering our opinion. For the purposes of this opinion letter, we have made assumptions that are customary in opinion letters of this kind, including the assumptions that each document submitted to us is accurate and complete, that each such document that is an original is authentic, that each such document that is a copy conforms to an authentic original, and that all signatures on each such document are genuine. We have further assumed the legal capacity of natural persons. We have not verified any of those assumptions.

K&L GATES LLP
HEARST TOWER 47TH FLOOR 214 NORTH TRYON STREET CHARLOTTE NC 28202
T +1 704 331 7400 F +1 704 331 7598 klgates.com

Akoustis Technologies, Inc.
October 23, 2018
Page 2

Our opinion set forth below is limited to the Delaware General Corporation Law (the “DGCL”) and reported judicial decisions interpreting the DGCL.

Based upon and subject to the foregoing, it is our opinion that the Shares are duly authorized for issuance by the Company and, when issued and paid for as described in the Final Prospectus Supplement and the Underwriting Agreement, will be validly issued, fully paid, and non-assessable.

We hereby consent to the filing of this opinion letter with the SEC as Exhibit 5 to the Company’s Current Report on Form 8-K dated October 23, 2018 and its incorporation by reference in the Registration Statement. We also consent to the reference to our Firm in the Preliminary Prospectus Supplement and the Final Prospectus Supplement under the caption “Legal Matters.” In giving this consent, we do not thereby admit that we are experts with respect to any part of the Registration Statement, Preliminary Prospectus Supplement or Final Prospectus Supplement within the meaning of the term “expert” as used in Section 11 of the Securities Act or the rules and regulations promulgated thereunder by the SEC, nor do we admit that we are within the category of persons whose consent is required under Section of the Securities Act or the rules and regulations of the SEC promulgated thereunder.

Very truly yours,

/s/ K&L Gates LLP



October 23, 2018

Akoustis Technologies, Inc.
9805 Northcross Center Court, Suite A
Huntersville, NC 28078

Ladies and Gentlemen:

We have acted as special counsel to Akoustis Technologies, Inc., a Delaware corporation (the "Company"), in connection with the issuance and sale by the Company of an aggregate of \$10,000,000 principal amount of the Company's 6.5% Convertible Senior Notes due 2023 (the "Notes") initially convertible into an aggregate of 1,960,784 shares of the Company's common stock, \$0.001 par value per share (the "Common Stock"), and any additional shares of Common Stock deliverable upon redemption of the Notes as an interest make-whole payment or upon conversion in connection with a qualifying fundamental change, the "Underlying Securities"), pursuant to the Underwriting Agreement dated October 19, 2018 (the "Underwriting Agreement") by and between the Company and Oppenheimer & Co. Inc. In accordance with the Securities Act of 1933, as amended (the "Securities Act"), and the rules and regulations promulgated thereunder, the Company has prepared and filed with the Securities and Exchange Commission (the "SEC"), on October 1, 2018, a Registration Statement on Form S-3 (Registration No. 333-227637) (the "Registration Statement"), including a preliminary prospectus supplement dated October 18, 2018 (the "Preliminary Prospectus Supplement") and a final prospectus supplement dated October 19, 2018 (the "Final Prospectus Supplement").

You have requested our opinion as to the matters set forth below in connection with the issuance of the Notes. For purposes of rendering that opinion, we have examined (i) the Registration Statement, (ii) the prospectus dated October 5, 2018, insofar as it pertains to the offering of the Notes, as supplemented by the Final Prospectus Supplement, (iii) the Underwriting Agreement, (iv) an indenture, dated October 23, 2018, by and between the Company and The Bank of New York Mellon Trust Company, N.A., as trustee (the "Trustee"), as supplemented by the first supplemental indenture, dated October 23, 2018, by and between the Company and the Trustee, establishing the terms of the Notes (as so supplemented, the "Indenture"), (v) the form of Note included in the Indenture, (vi) the Company's Certificate of Incorporation, (vii) the Company's Bylaws, (viii) the Company's stock ledger and (ix) the corporate action of the Company's Board of Directors which provides for the issuance of the Notes. We also have made such investigation of law as we have deemed appropriate. We have examined and relied upon certificates of public officials and such other documents and instruments as we have deemed necessary or advisable for the purpose of rendering our opinion. For the purposes of this opinion letter, we have made assumptions that are customary in opinion letters of this kind, including the assumptions that each document submitted to us is accurate and complete, that each such document that is an original is authentic, that each such document that is a copy conforms to an authentic original, and that all signatures on each such document are genuine. We have further assumed the legal capacity of natural persons. We have not verified any of those assumptions. We express no opinion to the extent that future issuances of securities of the Company and/or adjustments to outstanding securities of the Company cause the Notes to be convertible into more shares of Common Stock than the number that then remain authorized but unissued.

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Our opinion set forth below is limited to the Delaware General Corporation Law and the laws of the State of New York.

Based upon and subject to the foregoing, it is our opinion that:

1. The Notes have been duly authorized for issuance by the Company and, upon the execution, authentication and issuance of the Notes (in the form examined by us) against payment therefor in accordance with the terms of the Underwriting Agreement and otherwise in accordance with the Indenture, the Notes will be valid and binding obligations of the Company, enforceable against the Company in accordance with their terms.
2. The issuance of the Underlying Securities has been duly authorized, and, when issued, delivered and paid for in accordance with the Indenture and the Notes, the Underlying Securities will be validly issued, fully paid and nonassessable.

The opinions expressed in numbered opinion paragraph 1 above are subject to and limited by (i) the effect of bankruptcy, insolvency, fraudulent conveyance, reorganization, receivership, moratorium or other similar laws relating to or affecting the rights and remedies of creditors or secured parties generally, (ii) the application of general principles of equity (regardless of whether considered in a proceeding in equity or at law), including, without limitation, the possible unavailability of specific performance, injunctive relief or another equitable remedy, and (iii) concepts of materiality, reasonableness, good faith and fair dealing.

We express no opinion with respect to any provision of the Notes that purports to: (a) waive equitable rights, remedies, or defenses; (b) authorize a party to act in its sole discretion or provide that determination by a party is conclusive; (c) require notices, waivers, amendments, modifications or supplements to be made only in writing; (d) effect waivers of statutory or equitable rights or the effect of applicable laws; (e) waive or modify any party's diligence obligations; (f) impose liquidated damages; (g) relieve any party of the consequences of its own unlawful, willful or negligent acts or omissions; (h) grant indemnity or a right of contribution; (i) create rights of setoff or subrogation; (j) impose an increased interest rate, interest on interest, late charge, or any additional obligation or burden upon the occurrence of a default of any obligation thereunder; (k) limit or preclude the liability of any party for consequential, special, punitive or indirect damages; (l) permit the declaration of a default for an immaterial breach of provisions thereof; (m) waive the right to trial by jury; (n) designate the jurisdiction, forum, venue or choice of law for resolution of any cause of action or dispute or the method of service of process; (o) require enforcement of one or more provisions thereof notwithstanding that one or more other provisions thereof may be unenforceable; (p) provide that enumerated remedies are not exclusive or that a party has the right to pursue multiple remedies without regard to other remedies elected or that all remedies are cumulative; (q) establish evidentiary standards by which they are to be construed; (r) permit the exercise, under certain circumstances, of rights without notice or without providing opportunity to cure failures to perform; (s) bind persons that are not party thereto; or (t) grant a power of attorney or proxy.

We hereby consent to the filing of this opinion letter with the SEC as Exhibit 5 to the Company's Current Report on Form 8-K dated October 23, 2018 and its incorporation by reference in the Registration Statement. We also consent to the reference to our Firm in the Preliminary Prospectus Supplement and the Final Prospectus Supplement under the caption "Legal Matters." In giving this consent, we do not thereby admit that we are experts with respect to any part of the Registration Statement, Preliminary Prospectus Supplement or Final Prospectus Supplement within the meaning of the term "expert" as used in Section 11 of the Securities Act or the rules and regulations promulgated thereunder by the SEC, nor do we admit that we are within the category of persons whose consent is required under Section of the Securities Act or the rules and regulations of the SEC promulgated thereunder.

Very truly yours,

/s/ K&L Gates LLP

Akoustis Announces Proposed Offerings of Common Stock and Convertible Senior Notes

Charlotte, N.C., October 18, 2018 (GLOBE NEWSWIRE) - Akoustis Technologies, Inc. (NASDAQ: AKTS) (“Akoustis” or the “Company”), a manufacturer of patented bulk acoustic wave (“BAW”) high-band RF filters for mobile and other wireless applications, announced today that it intends to offer and sell shares of its common stock and \$10 million aggregate principal amount of its 6.5% Convertible Senior Notes due 2023 in concurrent underwritten offerings. Neither offering is contingent on the completion of the other offering.

Akoustis also expects to grant the underwriters a 30-day option to purchase additional shares of common stock offered in the common stock offering solely to cover over-allotments. Each offering is subject to market and other conditions, and there can be no assurance as to whether or when such offering may be completed, or as to the actual size or terms of such offering.

Akoustis intends to use the net proceeds from the proposed offerings to fund operations and the growth of its business, including for capital expenditures, working capital, research and development, the commercialization of its technology and other general corporate purposes.

Oppenheimer & Co. Inc. is acting as sole book-running manager for the common stock offering and sole underwriter for the notes offering.

A shelf registration statement relating to the shares of common stock and the notes to be issued in the proposed offerings was filed with the Securities and Exchange Commission (the “SEC”) and is effective. A preliminary prospectus supplement and accompanying prospectus describing the terms of each of the proposed offerings will be filed with the SEC. The securities may be offered only by means of a prospectus, including a prospectus supplement, forming a part of the effective registration statement. Copies of the preliminary prospectus supplements and the accompanying prospectuses relating to the securities being offered may also be obtained from Oppenheimer & Co. Inc. Attention: Syndicate Prospectus Department, 85 Broad Street, 26th Floor, New York, NY 10004, or by telephone at (212) 667-8055, or by email at EquityProspectus@opco.com. Electronic copies of the preliminary prospectus supplements and accompanying prospectuses will also be available on the SEC’s website at <http://www.sec.gov>.

This press release does not constitute an offer to sell, or the solicitation of an offer to buy, these securities, nor will there be any sale of these securities in any state or other jurisdiction in which such offer, solicitation or sale is not permitted.

About Akoustis Technologies, Inc.

Akoustis® (<http://www.akoustis.com>) is a high-tech BAW RF filter solutions company that is pioneering next-generation materials science and microelectromechanical systems (“MEMS”) wafer manufacturing to address the market requirements for improved RF filters - targeting higher bandwidth, higher operating frequencies and higher output power compared to incumbent polycrystalline BAW technology deployed today. The Company utilizes its proprietary XBAW manufacturing process to produce BAW RF filters for mobile and other wireless markets, which facilitate signal acquisition and accelerate band performance between the antenna and digital back end. Superior performance is driven by the significant advances of high-purity, single-crystal and associated piezoelectric materials and the resonator-filter process technology which drives electro-mechanical coupling and translates to wide filter bandwidth.

Akoustis plans to service the fast growing multi-billion-dollar RF filter market using its integrated design and manufacturing (“IDM”) business model. The Company owns and operates a 120,000 sq. ft. ISO-9001:2015 certified commercial wafer-manufacturing facility located in Canandaigua, NY, which includes a class 100 / class 1000 cleanroom facility - tooled for 150-mm diameter wafers - for the design, development, fabrication and packaging of RF filters, MEMS and other semiconductor devices. Akoustis Technologies, Inc. is headquartered in the Piedmont technology corridor near Charlotte, North Carolina.

Forward-Looking Statements

This document includes “forward-looking statements” within the meaning of Section 27A of the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, that are intended to be covered by the “safe harbor” created by those sections. These forward-looking statements include, but are not limited to, statements regarding the proposed offerings of common stock and notes and the intended use of the net proceeds of these offerings. Forward-looking statements include all statements that are not historical facts and typically are identified by use of terms such as “may,” “will,” “should,” “could,” “expect,” “plan,” “anticipate,” “believe,” “estimate,” “predict,” “intend,” “forecast,” “seek,” “potential,” “continue” and similar words, although some forward-looking statements are expressed differently. Forward-looking statements are neither historical facts nor assurances of future performance. Instead, these forward-looking statements are based on management’s current beliefs, expectations and assumptions and are subject to risks and uncertainties. Factors that could cause actual results to differ materially from those currently anticipated include, without limitation, risks relating to whether Akoustis will consummate the proposed common stock offering or the notes offering; market and other general economic conditions; whether Akoustis will be able to satisfy the conditions required to close any sale of common stock or notes in the proposed offerings; the fact that Akoustis’ management will have broad discretion in the use of the proceeds from any sale of the common stock and the notes in the proposed offerings; the results of our research and development activities, including uncertainties relating to semiconductor process manufacturing; the development of our XBAW™ technology and products presently under development and the anticipated timing of such development; our ability to protect our intellectual property rights that are valuable to our business, including patent and other intellectual property rights; our ability to successfully manufacture, market and sell products based on our technologies; the ability to achieve qualification of our products for commercial manufacturing in a timely manner and the size and growth of the potential markets for any products so qualified; the rate and degree of market acceptance of any of our products; our ability to raise funding to support operations and the continued development and qualification of our products and the technologies underlying them; and our ability to service our outstanding indebtedness. These and other risks and uncertainties are described in more detail in the Risk Factors and Management’s Discussion and Analysis of Financial Condition and Results of Operations sections of the Company’s most recent Annual Report on Form 10-K and the Risk Factors sections of the preliminary prospectus supplements describing the terms of the proposed offerings that will be filed with the SEC. Considering these risks, uncertainties and assumptions, the forward-looking statements regarding future events and circumstances discussed in this document may not occur, and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements. You should not rely upon forward-looking statements as predictions of future events. The forward-looking statements included in this document speak only as of the date hereof and, except as required by law, Akoustis undertakes no obligation to update publicly or privately any forward-looking statements, whether written or oral, for any reason after the date of this document to conform these statements to new information, actual results or to changes in Akoustis’ expectations.

Contact:

COMPANY:

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The Del Mar Consulting Group, Inc.
Robert B. Prag, President
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Akoustis Announces Pricing of Offerings of Common Stock and Convertible Senior Notes

Charlotte, N.C., October 19, 2018 (GLOBE NEWSWIRE) - Akoustis Technologies, Inc. (NASDAQ: AKTS) (“Akoustis” or the “Company”), a manufacturer of patented bulk acoustic wave (“BAW”) high-band RF filters for mobile and other wireless applications, today announced that it has priced its underwritten offerings of 7,250,000 shares of its common stock at a public offering price of \$4.25 per share and \$10 million aggregate principal amount of its 6.5% Convertible Senior Notes due 2023. Neither offering is contingent on the completion of the other offering.

Akoustis has granted the underwriters in the common stock offering a 30-day option to purchase up to 1,087,500 additional shares of common stock solely to cover over-allotments. Akoustis expects to close the offerings, subject to market and other conditions, on or about October 23, 2018.

Akoustis expects the gross proceeds from these offerings to be approximately \$40.8 million (or approximately \$45.4 million if the underwriters exercise their over-allotment option with respect to the common stock offering in full), before deducting the underwriting discount and other estimated offering expenses.

Akoustis intends to use the net proceeds from the proposed offerings to fund operations and the growth of its business, including for capital expenditures, working capital, research and development, the commercialization of its technology and other general corporate purposes.

Oppenheimer & Co. Inc. is acting as sole book-running manager for the common stock offering and sole underwriter for the notes offering. National Securities Corporation, Aegis Capital Corporation, Lake Street Capital Markets and Loop Capital are acting as co-managers in connection with the common stock offering.

The notes will be unsecured and will rank *pari passu* with Akoustis’ outstanding unsubordinated liabilities. The notes will be convertible into common stock at the option of the holder at any time prior to maturity at an initial rate of 196.08 shares of the Company’s common stock per \$1,000 principal amount of notes, which is equal to an initial conversion price of \$5.10. The notes will mature on November 30, 2023 unless earlier converted, redeemed or repurchased. Interest on the notes will accrue at the rate of 6.5% per year and be payable on each February 28, May 31, August 31 and November 30, beginning February 28, 2019. The notes will include provisions relating to a put right of the holders, a redemption right of the Company and payments to be made in the event of conversion in connection with certain “qualifying fundamental change,” in each case upon the terms and subject to the provisions of the indenture under which the notes will be issued.

A shelf registration statement relating to the shares of common stock and the notes to be issued in the proposed offerings was filed with the Securities and Exchange Commission (the "SEC") and is effective. A preliminary prospectus supplement and accompanying prospectus describing the terms of each of the proposed offerings have been filed with the SEC and a final prospectus supplement with respect to each offering will be filed with the SEC. Copies of the final prospectus supplements and the accompanying prospectuses relating to the securities being offered may be obtained, when available, from Oppenheimer & Co. Inc. Attention: Syndicate Prospectus Department, 85 Broad Street, 26th Floor, New York, NY 10004, or by telephone at (212) 667-8563, or by email at EquityProspectus@opco.com. Electronic copies of the final prospectus supplements and accompanying prospectuses will also be available on the SEC's website at <http://www.sec.gov>.

This press release does not constitute an offer to sell, or the solicitation of an offer to buy these securities, nor will there be any sale of these securities in any state or other jurisdiction in which such offer, solicitation or sale is not permitted.

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