

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): May 23, 2024

Bionano Genomics, Inc.

(Exact Name of Registrant as Specified in its Charter)

Delaware
(State or Other Jurisdiction of Incorporation)

001-38613
(Commission File Number)

26-1756290
(IRS Employer Identification No.)

9540 Towne Centre Drive, Suite 100
San Diego, California
(Address of Principal Executive Offices)

92121
(Zip Code)

Registrant's telephone number, including area code: (858) 888-7600

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:

- 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))

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, \$0.0001 par value per share	BNGO	The Nasdaq Stock Market LLC

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 (§240.12b-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.

Securities Purchase Agreement

On May 24, 2024, Bionano Genomics, Inc. (the “Company”) entered into a securities purchase agreement (the “Purchase Agreement”) with certain accredited investors (the “Investors”) and JGB Collateral LLC, as collateral agent for the Investors (the “Collateral Agent”), for the sale by the Company in a private placement (the “Offering”) of (i) 2,250,000 shares of the Company’s common stock, par value \$0.0001 per share (the “Shares”), and (ii) Senior Secured Convertible Debentures in the aggregate principal amount of \$20,000,000 (the “Debentures” and together with the Shares, the “Securities”), for an aggregate purchase price of \$18,000,000.

The closing of the Offering occurred on May 24, 2024, following the satisfaction of certain customary closing conditions. In connection with the closing of the Offering, the Company received net proceeds of approximately \$17.9 million, of which the Company used approximately \$17.6 million to fully redeem that certain Senior Secured Convertible Note due 2025 made by the Company in favor of High Trail Special Situations LLC in the original principal amount of \$45,000,000 (as amended, the “High Trail Note”). The Company intends to use remainder of the proceeds from the Offering for general corporate purposes.

The Securities issued in the Offering were not registered under the Securities Act of 1933, as amended (the “Securities Act”), and until so registered the securities may not be offered or sold absent registration or availability of an applicable exemption from registration.

The Purchase Agreement contained customary representations, warranties and covenants by the Company, customary indemnification obligations of the Company, including for liabilities under the Securities Act, other obligations of the parties and termination provisions. The representations, warranties and covenants contained in the Purchase Agreement were made only for purposes of the Purchase Agreement and as of specific dates, were solely for the benefit of the parties to such agreements and were subject to limitations agreed upon by the contracting parties.

In addition, pursuant to the Purchase Agreement, the Company granted the Investors the right to participate up to 100% in any debt offering by the Company or any of its subsidiaries that occurs during the period commencing on the closing date and ending on the earlier of (i) the maturity date under the Debentures, and (ii) the date on which all amounts payable by the Company under the Debentures have been paid in full.

In addition, so long as the Debentures remain outstanding, the Purchase Agreement provides that the Company and each of its subsidiaries may not effect or enter into any “Variable Rate Transaction.” “Variable Rate Transaction” is generally defined to mean a transaction involving the issuance of convertible securities with a conversion price, exercise price or exchange rate or other price that is based on trading prices of the Company’s common stock or varies based on changes in the trading price of the Company’s common stock or is subject to being reset at a future date upon the occurrence of specified or contingent events (not including customary structural adjustments). Sales of our common stock pursuant to the Company’s Sales Agreement with Cowen and Company, LLC will not be considered Variable Rate Transactions.

The foregoing description of the material terms of the Purchase Agreement is not complete and is qualified in its entirety by reference to the full text of the Purchase Agreement, a copy of which is filed as Exhibit 10.1 to this Current Report on Form 8-K and is incorporated herein by reference.

Debentures

The Debentures have an aggregate face value of \$20,000,000 and were issued with an original issue discount of \$2,000,000. The Debentures have maturity date of May 24, 2026 and an interest rate of 11% per annum payable monthly on the last business day of each calendar month.

The Company may, subject to certain “Equity Conditions,” redeem the Debentures at any time by paying an amount equal to the entire outstanding principal amount of the Debenture, plus all accrued and unpaid interest, plus the applicable “Company Redemption Premium,” plus any other amounts due and payable under the Debenture. The “Company Redemption Premium” is an amount equal to 112% of the principal amount of the Debenture if the redemption is prior to the first anniversary of the original issue date, or 106% of the principal amount of the Debenture if the redemption is on or after the first anniversary of the original issue date. The “Equity Conditions” include, among other things, that a resale registration statement has been filed with, and been declared effective by, the SEC, the Company’s common stock is listed on a trading market, there is no existing event of default under the Debenture, etc. No partial redemptions by the Company are permitted.

Beginning on July 24, 2024, the holder of a Debenture may require the Company to redeem a portion of its Debenture of up to \$1,000,000.00 per calendar month by providing written notice to the Company.

At the election of the holder, each Debenture is convertible, in whole or in part, at any time and from time to time at a conversion price of \$2.00 per share of common stock (the “Conversion Price”) to be issued upon such conversion (each a “Conversion Share”). The Conversion Price is subject to adjustment for stock dividends, stock splits, and certain other corporate events. Notwithstanding the foregoing, the Company will not effect any conversion under the Debentures to the extent that such conversion would cause the holder’s beneficial ownership of the Company’s common stock to exceed 4.99% (or 9.99% at the election of the holder) of the Company’s issued and outstanding common stock.

Under the Debentures, the Company must at all times maintain a cash balance equal to the lesser of (a) \$11.0 million and (b) the then outstanding principal balance of the Debentures, in a blocked account. In addition, for as long as any portion of the Debentures remain outstanding, the Company is generally restricted from: incurring indebtedness; granting or suffering liens on any of its property or assets; amending its organizational documents; repurchasing any of its securities; paying dividends; selling, disposing, licensing or leasing its assets other than in the ordinary course; and other customary restrictive covenants.

The Debentures also set forth certain customary events of default after which the Debentures may be declared immediately due and payable, including certain types of bankruptcy or insolvency events of default involving the Company and its subsidiaries.

The Debentures are secured by substantially all of the assets of the Company and its domestic subsidiaries (BioDiscovery, LLC, Lineagen, Inc. and Purigen Biosystems, Inc.), which security interest is set forth in a Security Agreement, dated as of May 24, 2024, by and among the Company, its domestic subsidiaries, and the Collateral Agent (the “Security Agreement”).

In addition, the Company’s domestic subsidiaries entered into a Subsidiary Guaranty, dated as of May 24, 2024, in favor of the Investors pursuant to which the Company’s domestic subsidiaries agreed to jointly and severally, unconditionally and irrevocably guarantee to the Investors and their successors and assigns, the prompt complete payment and performance when due of the obligations of the Company under the Debentures (the “Guaranty”).

The foregoing description of the material terms of the Debentures, the Security Agreement, and the Guaranty are not complete and are qualified in their entirety by reference to the full text of such agreements, copies of which is filed as Exhibits 4.1, 10.2 and 10.3 to this Current Report on Form 8-K and is incorporated herein by reference.

Placement Agent Agreement

Canaccord Genuity LLC (the “Placement Agent”) acted as the exclusive placement agent for the Offering, which was conducted on a “reasonable best efforts” basis. On May 24, 2024, the Company entered into a placement agent agreement (the “Placement Agent Agreement”) with the Placement Agents pursuant to which the Company agreed to pay the Placement Agents a cash fee equal to 6.0% of the of the aggregate face value of the Debentures issued by the Company in connection with the Offering. In addition, the Company agreed to reimburse the Placement Agent for any out-of-pocket expenses incurred by the Placement Agent in connection with the Offering not to exceed \$75,000. The Placement Agent Agreement contains customary representations, warranties and agreements by the Company and indemnification obligations.

The foregoing description of the material terms of the Private Placement Agreement is not complete and is qualified in its entirety by reference to the full text of the Private Placement Agreement, a copy of which is filed as Exhibit 10.4 to this Current Report on Form 8-K and is incorporated herein by reference.

Registration Rights Agreement

In connection with the offering, the Company entered into a registration rights agreement, dated as of May 24, 2024, with the Investors (the “Registration Rights Agreement”). Pursuant to the Registration Rights Agreement, the Company is required to file an initial registration statement with the Securities and Exchange Commission (the “SEC”) covering the resale of the Shares and the Conversion Shares within 15 calendar days of the closing date and to use its best efforts to have the registration statement declared effective within 45 days following the closing date (or 60 days in the event of a partial or full review by the SEC).

The foregoing description of the material terms of the Registration Rights Agreement is not complete and is qualified in its entirety by reference to the full text of the Registration Rights Agreement, a copy of which is filed as Exhibit 10.5 to this Current Report on Form 8-K and is incorporated herein by reference.

High Trail Note Redemption

In connection with the redemption of the High Trail Note referenced above, the Company entered into a letter agreement with High Trail Special Situations LLC dated May 23, 2024 (the “HT Agreement”). Pursuant to the HT Agreement, the company agreed to redeem the entire outstanding principal amount of \$15,337,000 under High Trail Note at a redemption price of 115% for a total redemption payment of \$17,637,550 (the “Redemption Payment”). Upon High Trail’s receipt of the Redemption Payment on May 24, 2024, the High Trail Note was cancelled. In addition, pursuant to the HT Agreement, the Company agreed to pay High Trail a retirement fee of \$2,187,500 and to reimburse High Trail Special Situations LLC for all of its reasonable and documented out-of-pocket expenses incurred with the release and termination of security interests relating to the High Trail Note.

The foregoing description of the material terms of the HT Agreement is not complete and is qualified in its entirety by reference to the full text of the HT Agreement, a copy of which is filed as Exhibit 10.6 to this Current Report on Form 8-K and is incorporated herein by reference.

Item 1.02 Termination of a Material Definitive Agreement.

The information required by this Item 1.02 relating to the High Trail Note is set forth under Item 1.01 of this Current Report on Form 8-K and is incorporated herein 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 required by this Item 2.03 relating to the Debentures is set forth under Item 1.01 of this Current Report on Form 8-K and is incorporated herein by reference.

Item 3.02 Unregistered Sales of Equity Securities.

The information required by this Item 3.02 relating to the Shares and Debentures is set forth under Item 1.01 of this Current Report on Form 8-K and is incorporated herein by reference. The Shares and Debenture were issued in reliance upon Rule 506 of Regulation D promulgated under the Securities Act, as a transaction not requiring registration under the Securities Act and was made without general solicitation or advertising. Pursuant to the Purchase Agreement, the Investors each represented that it is an accredited investor and that it is acquiring the securities for investment purposes only and not with a view to any resale, distribution or other disposition of such securities in violation of the Securities Act.

Item 7.01 Regulation FD Disclosure.

On May 28, 2024, the Company issued a press release announcing the completion of the Offering. A copy of the press release is attached hereto as Exhibit 99.2.

The information in this Item 7.01 and the related exhibit are being furnished and shall not be deemed “filed” for purposes of Section 18 of the Exchange Act, or incorporated by reference in any filing under the Securities Act or the Exchange Act whether made before or after the date of this report, except as shall be expressly set forth by specific reference in such a filing.

Item 8.01 Other Events

Based on the Company’s current business plans, it believes such net proceeds from the Offering discussed above in Item 1.01 of this Current Report and restructuring of redemption terms under the Debenture, together with its existing cash, cash equivalents and short-term investments and after taking into account inaccessible “restricted cash” under the terms of the transaction described above, will be sufficient to fund the Company’s operating expenses and capital expenditure requirements into at least the fourth quarter of 2024. The Company’s available cash, cash-equivalents and short-term investments following consummation of the transaction described above will not be sufficient to achieve cash-flow break even. As noted in the Company’s Quarterly Report on Form 10-Q for the quarter ended March 31, 2024 filed with the SEC on May 8, 2024, based on recurring losses from operations incurred since inception, the expectation of continued operating losses and the need to raise additional capital to finance the Company’s future operations, the Company had determined that there is substantial doubt about its ability to continue as a going concern within 12 months of such Quarterly Report. The Company will continue to seek to raise additional capital, but without additional financing the Company may not be able to continue as a going concern. If the Company is unable to continue as a going concern, the Company may have to reorganize or liquidate its business and may receive less than the value at which those assets are carried on the Company’s consolidated financial statements, and investors may lose all or a part of their investment. The Board has established a strategy committee to work with the Company and outside advisors in evaluating the Company’s options and considering alternatives that it believes will maximize stakeholder value, including any of the following or a combination thereof: debt financing, equity investments, combinations with other companies, or the sale of all or part of the company. There can be no assurances that any transactions will be completed and if the Company is not able to raise sufficient additional capital to fund the Company’s future operation, the Company may potentially seek relief available under applicable insolvency laws. The Company does not intend to make further announcements regarding this process unless and until the Board approves a specific transaction or otherwise determines that further disclosure is appropriate.

Forward-Looking Statements

This Current Report on Form 8-K contains forward-looking statements, including, but not limited to, statements related to the Company’s review and consideration of strategic alternatives, expectations regarding the Company’s cash runway, the timeframe for such review and potential reorganization or liquidation alternatives for the Company. Words such as “expects,” “anticipates,” “aims,” “projects,” “intends,” “plans,” “believes,” “estimates,” “seeks,” “assumes,” “may,” “should,” “could,” “would,” “foresees,” “forecasts,” “predicts,” “targets,” “commitments,” variations of such words and similar expressions are intended to identify such forward-looking statements. These forward-looking statements are based upon the Company’s current plans, assumptions, beliefs, and expectations. Forward-looking statements are subject to the occurrence of many events outside of the Company’s control. Actual results and the timing of events may differ materially from those contemplated by such forward-looking statements due to numerous factors that involve substantial known and unknown risks and uncertainties. Forward-looking statements include statements regarding our intentions, beliefs, projections, outlook, analyses or current expectations, statements regarding the anticipated cash runway including and excluding the amounts held as restricted cash, statements regarding the anticipated charges, and expected net proceeds and the Company’s ability to continue as a going concern. These risks and uncertainties include, among other things, the Company’s ability to identify and evaluate possible financial and strategic alternatives and their implications for the Company; the risk that the review process will not result in the Company pursuing any additional transactions or that any transaction, if pursued, will be completed on attractive terms or at all; the ability of the Company to obtain sufficient financing to continue as a going concern; and other risks and uncertainties included in the periodic reports on Forms 10-K, 10-Q and 8-K and in other filings the Company makes with the SEC from time to time, which are available at www.sec.gov. Forward-looking statements should be considered in light of these risks and uncertainties. Investors and others are cautioned not to place undue reliance on forward-looking statements. All forward-looking statements contained herein speak only as of the date hereof. The Company assumes no obligation and does not intend to update these forward-looking statements, except as required by law.

(d) Exhibits

Exhibit No.	Description
4.1*	Form of Senior Secured Convertible Debenture Due May 24, 2026
10.1*	Securities Purchase Agreement, dated May 24, 2024, by and among the Company and the Buyers named therein
10.2*	Security Agreement, dated as of May 24, 2024, by and among the Company, BioDiscovery, LLC, Lineagen, Inc., Purigen Biosystems, Inc., and JGB Collateral LLC
10.3	Subsidiary Guaranty, dated as of May 24, 2024, by BioDiscovery LLC, Lineagen, Inc., Purigen Biosystems, Inc. in favor the Investors
10.4	Placement Agency Agreement, dated May 24, 2024, by and between the Company and Canaccord Genuity LLC
10.5	Registration Rights Agreement, dated May 24, 2024, by and between the Company and the Investors
10.6	Letter Agreement Re: Agreement to Redeem Senior Secured Convertible Notes due 2025, dated May 23, 2024, by and between the Company and High Trail Special Situations LLC
99.1	Press Release dated May 28, 2024
104	Inline XBRL for the cover page of this Current Report on Form 8-K

* Certain schedules to this agreement have been omitted pursuant to Item 601(a)(5) of Regulation S-K. The Company agrees to furnish a copy of all omitted schedules to the SEC upon its request. Portions of this exhibit have been omitted pursuant to Item 601(b)(2)(ii) of Regulation S-K. The Company agrees to furnish supplementally an unredacted copy of the Exhibits to the SEC upon its request.

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.

Date: May 28, 2024

Bionano Genomics, Inc.

By: /s/ R. Erik Holmlin, Ph.D.
R. Erik Holmlin, Ph.D.
President and Chief Executive Officer
(Principal Executive Officer)

NEITHER THIS SECURITY NOR THE SECURITIES INTO WHICH THIS SECURITY IS CONVERTIBLE HAVE BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION OR THE SECURITIES COMMISSION OF ANY STATE IN RELIANCE UPON AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), AND, ACCORDINGLY, MAY NOT BE OFFERED OR SOLD EXCEPT PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT OR PURSUANT TO AN AVAILABLE EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS. THIS SECURITY AND THE SECURITIES ISSUABLE UPON CONVERSION OF THIS SECURITY MAY BE PLEDGED IN CONNECTION WITH A BONA FIDE MARGIN ACCOUNT OR OTHER LOAN SECURED BY SUCH SECURITIES.

THIS DEBENTURE HAS BEEN ISSUED WITH ORIGINAL ISSUE DISCOUNT ("OID"). PURSUANT TO TREASURY REGULATION §1.1275-3(b)(1), [●], A REPRESENTATIVE OF THE COMPANY HEREOF WILL, BEGINNING TEN DAYS AFTER THE ISSUANCE DATE OF THIS DEBENTURE, PROMPTLY MAKE AVAILABLE TO THE HOLDER UPON REQUEST THE INFORMATION DESCRIBED IN TREASURY REGULATION §1.1275-3(b)(1)(i). [●] MAY BE REACHED AT TELEPHONE NUMBER [●].

Original Issue Date: [____], 2024

\$20,000,000

SENIOR SECURED CONVERTIBLE DEBENTURE DUE [____], 2026

THIS SENIOR SECURED CONVERTIBLE DEBENTURE is one of a series of duly authorized and validly issued Senior Secured Convertible Debentures of Bionano Genomics, Inc., a Delaware corporation (the "Company"), having its principal place of business at 9540 Towne Centre Drive, Suite 100, San Diego, California 92121, designated as its Senior Secured Convertible Debenture due [____], 2026 (this debenture, the "Debenture" and, collectively with the other debentures of such series, the "Debentures").

FOR VALUE RECEIVED, the Company promises to pay to [JGB Entity] or its registered assigns (the "Holder"), or shall have paid pursuant to the terms hereunder, the principal sum of \$20,000,000 on [____], 2026 (the "Maturity Date") or such earlier date as this Debenture is required or permitted to be repaid as provided hereunder, and to pay interest to the Holder on the aggregate unconverted and then outstanding principal amount of this Debenture in accordance with the provisions hereof. This Debenture is subject to the following additional provisions:

Section 1. Definitions. For the purposes hereof, in addition to the terms defined elsewhere in this Debenture, (a) capitalized terms not otherwise defined herein shall have the meanings set forth in the Purchase Agreement and (b) the following terms shall have the following meanings:

“Account Control Agreement” means any control agreement entered into among the depository institution at which the Company maintains a deposit account, the Company, and the Collateral Agent pursuant to which the Collateral Agent, obtains control (within the meaning of the Code) over such deposit account, in form and substance reasonably satisfactory to the Collateral Agent.

“Alternate Consideration” shall have the meaning set forth in Section 5(e).

“Bankruptcy Event” means any of the following events: (a) the Company or any Subsidiary commences a case or other proceeding under any bankruptcy, reorganization, arrangement, adjustment of debt, relief of debtors, dissolution, insolvency or liquidation or similar law of any jurisdiction relating to the Company or any Subsidiary thereof, (b) there is commenced against the Company or any Subsidiary thereof any such case or proceeding that is not stayed or dismissed within 60 days after commencement, (c) the Company or any Subsidiary thereof is adjudicated insolvent or bankrupt or any order of relief or other order approving any such case or proceeding is entered, (d) the Company or any Subsidiary thereof suffers any appointment of any custodian or the like for it or any material part of its property that is not discharged or stayed within 60 calendar days after such appointment, (e) the Company or any Subsidiary thereof makes a general assignment for the benefit of creditors, (f) the Company or any Subsidiary thereof calls a meeting of its creditors with a view to arranging a composition, adjustment or restructuring of its debts, (g) the Company or any Subsidiary thereof admits in writing that it is generally unable to pay its debts as they become due, (h) the Company or any Subsidiary thereof, by any act or failure to act, expressly indicates its consent to, approval of or acquiescence in any of the foregoing or takes any corporate or other action for the purpose of effecting any of the foregoing.

“Beneficial Ownership Limitation” shall have the meaning set forth in Section 4(d).

“Buy-In” shall have the meaning set forth in Section 4(c)(v).

“Change of Control Transaction” means the occurrence after the date hereof of any of (a) an acquisition by an individual or legal entity or “group” (as described in Rule 13d-5(b)(1) promulgated under the Exchange Act) of effective control (whether through legal or beneficial ownership of capital stock of the Company, by contract or otherwise) of in excess of 50% of the voting securities of the Company (other than by means of conversion or exercise of the Debentures and the Securities issued together with the Debentures), (b) any Person or two or more Persons acting in concert shall have acquired by contract or otherwise, or shall have entered into a contract or arrangement that, upon consummation thereof, will result in its or their acquisition of the power to exercise, directly or indirectly, control over the management or policies of the Company or control over the equity interests of such Person entitled to vote for members of the Board of Directors of the Company on a fully-diluted basis (and taking into account all such voting power that such Person or group has the right to acquire pursuant to any option right) representing 50% or more of the combined voting power of such equity interests, (c) the Company (and all of its Subsidiaries, taken as a whole) sells or transfers all or substantially all of its assets to another Person or (d) a replacement at one time of more than one-half of the members of the Board of Directors which is not approved by a majority of those individuals who are members of the Board of Directors on the Original Issue Date (or by those individuals who are serving as members of the Board of Directors on any date whose nomination to the Board of Directors was approved by a majority of the members of the Board of Directors who are members on the Original Issue Date).

“Company Redemption Amount” shall have the meaning set forth in Section 2(c).

“Company Redemption Date” shall have the meaning set forth in Section 2(c).

“Company Redemption Notice” shall have the meaning set forth in Section 2(c).

“Company Redemption Notice Date” shall have the meaning set forth in Section 2(c).

“Company Redemption Period” shall have the meaning set forth in Section 2(c).

“Company Redemption Premium” means (i) if this Debenture is redeemed pursuant to Section 2(c) prior to the first anniversary of the Original Issue Date, an amount equal to 112% of the principal amount of this Debenture so redeemed and (ii) if this Debenture is redeemed pursuant to Section 2(c) on or after the first anniversary of the Original Issue Date, an amount equal to 106% of the principal amount of this Debenture so redeemed.

“Conversion Date” shall have the meaning set forth in Section 4(a).

“Conversion Price” shall have the meaning set forth in Section 4(b).

“Conversion Schedule” means the Conversion Schedule in the form of Schedule 1 attached hereto.

“Conversion Shares” means, collectively, the shares of Common Stock issuable upon conversion of this Debenture in accordance with the terms hereof.

“Debenture Register” shall have the meaning set forth in Section 2(e).

“Disqualified Stock” shall mean, with respect to any person, any Equity Interests of such person that, by its terms (or by the terms of any security or other Equity Interests into which it is convertible or for which it is exchangeable) or upon the happening of any event or condition (a) matures or is mandatorily redeemable, pursuant to a sinking fund obligation or otherwise (except as a result of a change of control or asset sale so long as any rights of the holders thereof upon the occurrence of a change of control or asset sale event shall be subject to the prior repayment in full of the Debentures), (b) is redeemable at the option of the holder thereof, in whole or in part, (c) provides for the scheduled payments of dividends in cash, or (d) is or becomes convertible into or exchangeable for Indebtedness or any other Equity Interests that would constitute Disqualified Stock, in each case, prior to the date that is ninety-one (91) days after the Maturity Date. Notwithstanding the foregoing: (i) any Equity Interests issued to any employee or to any plan for the benefit of employees of the Borrower or the Subsidiaries or by any such plan to such employees shall not constitute Disqualified Stock solely because they may be required to be repurchased by the Borrower in order to satisfy applicable statutory or regulatory obligations or as a result of such employee’s termination, death or disability and (ii) any class of Equity Interests of such Person that by its terms provides that obligations thereunder will be satisfied by delivery of Common Stock shall not be deemed to be Disqualified Stock.

“Effectiveness Period” shall have the meaning set forth in the Registration Rights Agreement.

“Equity Conditions” means, during the period in question, (a) a registration statement registering the resale of all shares of Common Stock issued, issuable or required to be issued pursuant to this Debenture has been filed by the Company and has been declared effective by the Commission or is automatically effective and is available for use by the Holder, (b) the shares of Common Stock are listed and/or trading on a Trading Market (and the Company reasonably believes that the listing and/or trading in the Common Stock on the Trading Market will continue for the foreseeable future) and all shares of Common Stock issued, issuable or required to be issued pursuant to this Debenture are listed or quoted (or approved for such listing or quotation, subject to notice of issuance) for trading on such Trading Market and the issuance of such shares of Common Stock pursuant to the Debenture would not violate the rules and regulations of any such Trading Market, (c) the number of shares of Common Stock that may be issued out of the Company’s authorized and unissued shares of Common Stock is sufficient for the issuance or delivery of all of the shares then issuable or deliverable pursuant to the Transaction Documents, including, without limitation all outstanding Debentures, (d) there is no existing Event of Default and no existing event which, with the expiration of a cure period or the giving of notice, would constitute an Event of Default, (e) the Holder is not in possession of any information provided by or on behalf of the Company that constitutes, or may constitute, material non-public information, (f) the shares of Common Stock are eligible for electronic transfer through the facilities of DTC (and not subject to “chill”) and (g) the Holder, in its sole determination, is able to engage in transactions in Common Stock on the principal Trading Market for the Common Stock through reputable broker-dealers or otherwise on terms that are economical and commercially reasonable to the Holder (it being understood, without limiting the foregoing, that if brokerage commissions and/or holders’ other out-of-pocket costs would generally exceed, as determined by the holders in good faith, the difference between the market price for the Common Stock and the Conversion Price, such a situation would not be economical or commercially reasonable).

“Event of Default” shall have the meaning set forth in Section 8(a).

“Excluded Account” shall have the meaning set forth in the Security Agreement.

“Exempt Issuance” means the issuance of (a) shares of Common Stock or options to employees, officers or directors of the Company pursuant to any stock or option plan duly adopted for such purpose, by a majority of the non-employee members of the Board of Directors or a majority of the members of a committee of non-employee directors established for such purpose for services rendered to the Company, (b) securities upon the exercise or exchange of or conversion of any Securities issued hereunder and any securities upon exercise of securities exercisable or exchangeable for or convertible into shares of Common Stock issued and outstanding on the date of this Debenture, provided that such securities have not been amended since the date of this Debenture to increase the number of such securities or to decrease the exercise price, exchange price or conversion price of such securities (other than in connection with stock splits or combinations) or to extend the term of such securities, (c) securities issued pursuant to acquisitions or strategic transactions approved by a majority of the disinterested directors of the Company, provided that such securities are issued as “restricted securities” (as defined in Rule 144) and provided that any such issuance shall only be to a Person (or to the equityholders of a Person) which is, itself or through its subsidiaries, an operating company or an owner of an asset in a business synergistic with the business of the Company and shall provide to the Company additional benefits in addition to the investment of funds, but shall not include a transaction in which the Company is issuing securities primarily for the purpose of raising capital or to an entity whose primary business is investing in securities, and (d) shares of Common Stock issued and sold pursuant to an “at the market” offering program at prevailing market prices for the Common Stock.

“Fundamental Transaction” shall have the meaning set forth in Section 5(e).

“Holder Redemption Amount” shall have the meaning set forth in Section 2(d).

“Holder Redemption Notice” shall have the meaning set forth in Section 2(d).

“Indebtedness” of a Person shall include (a) all obligations for borrowed money or the deferred purchase price of property or services including without limitation, merchant cash advances (excluding trade credit and trade accounts payable incurred in the ordinary course of business), (b) all obligations evidenced by bonds, debentures, notes, or other similar instruments and all reimbursement or other obligations in respect of letters of credit, surety bonds, bankers acceptances, currency swap agreements, interest rate hedging agreements, interest rate swaps or other financial products, (c) all capital lease obligations (as determined in accordance with GAAP), (d) all obligations or liabilities secured by a Lien on any asset of such Person, irrespective of whether such obligation or liability is assumed by such Person, (e) any obligation arising with respect to any other transaction that is the functional equivalent of borrowing but which does not constitute a liability on the balance sheets of such Person (excluding trade credit and trade accounts payable incurred in the ordinary course of business), (f) Disqualified Stock, and (g) any obligation guaranteeing or intended to guarantee (whether directly or indirectly guaranteed, endorsed, co-made, discounted or sold with recourse) any of the foregoing obligations of any other Person.

“Interest Payment Date” shall have the meaning set forth in Section 2(a).

“Investments” means, as to any Person, any direct or indirect acquisition or investment by such Person, whether by means of (a) the purchase or other acquisition (including by merger) of Equity Interests of another Person, (b) a loan, advance or capital contribution to, guarantee or assumption of debt of, or purchase or other acquisition of any other debt or interest in, another Person, or (c) the purchase or other acquisition (in one transaction or a series of transactions) of assets of another Person that constitutes a business unit or all or a substantial part of the business of, such Person.

“Late Fees” shall have the meaning set forth in Section 2(e).

“Mandatory Default Amount” means the sum of (a) 115% of the outstanding principal amount of this Debenture, plus 100% of accrued and unpaid interest hereon, and (b) all other amounts, costs, expenses and liquidated damages due in respect of this Debenture.

“Monthly Allowance” shall have the meaning set forth in Section 2(d).

“New York Courts” shall have the meaning set forth in Section 10(d).

“Notice of Conversion” shall have the meaning set forth in Section 4(a).

“Original Issue Date” means the date of the first issuance of the Debentures, regardless of any transfers of any Debenture and regardless of the number of instruments which may be issued to evidence such Debentures.

“Permitted Indebtedness” means (a) the Indebtedness evidenced by the Debentures, (b) the Indebtedness existing on the Original Issue Date and set forth on Schedule 3.1(s), attached to the Purchase Agreement, (c) capital lease obligations and purchase money indebtedness of up to \$1,000,000, in the aggregate at anytime outstanding, incurred in connection with the acquisition of capital assets and lease obligations with respect to recently acquired or leased assets, (d) Indebtedness in respect of payment processing services, netting services, overdrafts and related liabilities arising from treasury, depository and cash management services incurred in the ordinary course of business and not exceeding \$100,000 in the aggregate at anytime outstanding, (e) Indebtedness incurred in the ordinary course of business in respect of letters of credit, performance bonds, bid bonds, customs and appeal bonds, performance and completion guarantees and similar obligations related thereto, (f) Indebtedness owed to any Person providing worker’s compensation, health, disability or other employee benefits or property, casualty or liability insurance to the Company or any Subsidiary incurred in connection with such Person providing such benefits or insurance pursuant to customary reimbursement or indemnification obligations to such Person; (g) Indebtedness of any Subsidiary of the Company owing to the Company and Indebtedness of the Company owing to any Subsidiary of the Company; (h) Indebtedness in respect of the financing of insurance premiums in the ordinary course of business (i) guarantees (or liabilities as a surety, endorser, accommodation endorser or otherwise) in respect of performance, surety, statutory, appeal or similar obligations incurred in the ordinary course of business but excluding guaranties with respect to any obligations for borrowed money; (j) Indebtedness in respect of business credit card programs in an aggregate amount not to exceed \$400,000 at any time outstanding; (k) performance based royalty or milestone obligations, in each case, characterized as such and arising expressly out of purchase and sale contracts, development arrangements or licensing arrangements not otherwise prohibited hereunder; (l) Indebtedness that (1) is expressly subordinate to the Debentures pursuant to a written subordination agreement with the Purchasers that is acceptable to each Purchaser in its sole and absolute discretion and (2) matures at a date later than the 91st day following the Maturity Date and (m) guarantees of Indebtedness described in clauses (a) through (l). Notwithstanding anything contained herein to the contrary in no event shall the aggregate amount of all Permitted Indebtedness exceed \$2,000,000 at any time outstanding.

“Permitted Lien” means the individual and collective reference to the following: (a) Liens in favor of Holder or the Collateral Agent; (b) Liens for taxes, assessments and other governmental charges or levies not yet due or Liens for taxes, assessments and other governmental charges or levies being contested in good faith and by appropriate proceedings for which adequate reserves (in the good faith judgment of the management of the Company) have been established in accordance with GAAP, (c) Liens imposed by law which were incurred in the ordinary course of the Company’s business, such as carriers’, warehousemen’s and mechanics’ Liens, statutory landlords’ Liens, and other similar Liens arising in the ordinary course of the Company’s business, and which (x) do not individually or in the aggregate materially detract from the value of such property or assets or materially impair the use thereof in the operation of the business of the Company and its consolidated Subsidiaries or (y) are being contested in good faith by appropriate proceedings, which proceedings have the effect of preventing for the foreseeable future the forfeiture or sale of the property or asset subject to such Lien, (d) Liens incurred in connection with Permitted Indebtedness under clauses (a), (e), (j) or (k) thereunder, (e) Liens incurred in connection with Permitted Indebtedness under clause (c) thereunder, provided that such Liens are not secured by assets of the Company or its Subsidiaries other than the assets so acquired or leased, (f) the following deposits, to the extent made in the ordinary course of business: deposits under workers’ compensation, unemployment insurance, social security and other similar laws, or to secure the performance of bids, tenders or contracts (other than for the repayment of borrowed money) or to secure indemnity, performance or other similar bonds for the performance of bids, tenders or contracts (other than for the repayment of borrowed money) or to secure statutory obligations (other than Liens arising under ERISA or environmental Liens) or surety or appeal bonds, or to secure indemnity, performance or other similar bonds, in each case, incurred in the ordinary course of business; (g) leasehold interests in leases or subleases and licenses granted in the ordinary course of the Company’s business and not interfering in any material respect with the business of the licensor; (h) Liens in favor of customs and revenue authorities arising as a matter of law to secure payment of custom duties that are promptly paid on or before the date they become due; (i) Liens on insurance proceeds securing the payment of financed insurance premiums that are promptly paid on or before the date they become due (provided that such Liens extend only to such insurance proceeds and not to any other property or assets); (j) easements, zoning restrictions, rights-of-way and similar encumbrances on real property imposed by law or arising in the ordinary course of business so long as they do not materially impair the value or marketability of the related property; (k) licenses of Intellectual Property entered into in the ordinary course of business; (l) any other Liens, solely to the extent not securing Indebtedness for borrowed money, in an amount not to exceed collectively \$1,000,000 at any time in the aggregate; (m) Liens existing on the date hereof and set forth on Schedule A hereto and (n) Liens incurred in connection with the extension, renewal or refinancing of the Indebtedness secured by Liens of the type described in clauses (b) through (o) above (other than any Indebtedness repaid with the proceeds of this Debenture); provided, that any extension, renewal or replacement Lien shall be limited to the property encumbered by the existing Lien and the principal amount of the Indebtedness being extended, renewed or refinanced (as may have been reduced by any payment thereon) does not increase. Notwithstanding anything contained herein to the contrary in no event shall the aggregate amount of all Permitted Liens exceed \$1,500,000 at any time outstanding.

“Purchase Agreement” means the Securities Purchase Agreement, dated as of [____], 2024 among the Company and the original Holders, as amended, modified or supplemented from time to time in accordance with its terms.

“Securities Act” means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

“Share Delivery Date” shall have the meaning set forth in Section 4(c)(ii).

“Successor Entity” shall have the meaning set forth in Section 5(e).

“Trading Day” means a day on which the principal Trading Market is open for trading.

“Trading Market” means any of the following markets or exchanges on which the Common Stock is listed or quoted for trading on the date in question: the NYSE American, the Nasdaq Capital Market, the Nasdaq Global Market, the Nasdaq Global Select Market, the New York Stock Exchange (or any successors to any of the foregoing).

Section 2. Interest.

a) Payment of Interest in Cash. The Company shall pay interest to the Holder on the aggregate unconverted and then outstanding principal amount of this Debenture at the rate of 11% per annum, payable monthly on the last Business Day of each calendar month, beginning on the first such date after the Original Issue Date, and on the Maturity Date (each such date, an “Interest Payment Date”) (if any Interest Payment Date is not a Business Day, then the applicable payment shall be due on the next succeeding Business Day), in cash.

b) Interest Calculations. Interest shall be calculated on the basis of a 360-day year and the actual number of days elapsed, and shall accrue daily commencing on the Original Issue Date until payment in full of the outstanding principal, together with all accrued and unpaid interest, liquidated damages and other amounts which may become due hereunder, has been made. Interest shall cease to accrue with respect to any principal amount converted, provided that, the Company actually delivers the Conversion Shares within the time period required by Section 4(c)(ii). Interest hereunder will be paid to the Person in whose name this Debenture is registered on the records of the Company regarding registration and transfers of this Debenture (the “Debenture Register”).

c) Redemption at the Option of the Company. Subject to the provisions of this Section 2(c), at any time on or after the Original Issue Date of this Debenture, the Company may, provided that the Equity Conditions are satisfied, deliver a notice to the Holder (a “Company Redemption Notice” and the date such notice is deemed delivered hereunder, the “Company Redemption Notice Date”) of its irrevocable election to prepay all, but not less than all, of the then outstanding principal amount of this Debenture for cash in an amount equal to the entire outstanding principal amount of this Debenture, all accrued and unpaid interest hereunder, the applicable Company Redemption Premium and all other amounts due and payable hereunder (the “Company Redemption Amount”) on the thirtieth (30th) Trading Day following the Company Redemption Notice Date (such date, the “Company Redemption Date”, such thirty (30) Trading Day period, the “Company Redemption Period”). The Company Redemption Amount shall be due and payable in full in cash (by wire transfer of immediately available funds to the account of the Holder) on the Company Redemption Date. Notwithstanding the foregoing, if the Equity Conditions cease to be satisfied on any Trading Day during the Company Redemption Period (subject to the proviso below), then, at the option of the Holder, the Company Redemption Notice may be deemed void ab initio, withdrawn and of no force and effect. The Company covenants and agrees that it will honor all Notices of Conversion tendered by the Holder at any time, and from the time, after the delivery of the Company Redemption Notice through the date all amounts owing thereon are due and paid in full. The Company will, concurrently with the delivery of the Company Redemption Notice to the Holder, publicly announce its intention to prepay this Debenture by means of a press release and filing of a Current Report on Form 8-K filed with the Commission. Notwithstanding anything herein contained to the contrary, if any portion of the Company Redemption Amount remains unpaid after the Company Redemption Date (other than as otherwise converted at the election of the Holder) then the Holder may elect, by written notice to the Company given at any time thereafter, to invalidate such redemption, ab initio, solely with respect to the portions of Company Redemption Amount not paid. For the avoidance of doubt, the Holder may elect to convert all or a portion of the outstanding principal amount of this Debenture, at any time, and from time to time, pursuant to Section 4 prior to actual payment in cash of the Company Redemption Amount under this Section 2(c) by the delivery of one or more Notices of Conversion to the Company. For the avoidance of doubt, the Company may redeem or prepay all or any portion of this Debenture except as set forth in this Section 2(c) or Section 2(d).

d) Redemption at the Option of the Holder. Commencing on July __, 2024, the Holder may require the Company to redeem a portion of this Debenture (the “Monthly Holder Redemption Right”) of up to \$____¹ per calendar month (the “Monthly Allowance”). The Holder may exercise its Holder Redemption Right for a calendar month, at any time and from time to time, during such calendar month, by sending a written notice (each a “Holder Redemption Notice”), to the Company by not later than 11:59 P.M. (local time in New York, New York) on the last Trading Day of such calendar month, which Holder Redemption Notice shall specify the principal amount to be redeemed up to the Monthly Allowance (the “Holder Redemption Amount”). The Holder Redemption Amount shall be due and payable by the Company in cash by wire transfer of immediately available funds on the second (2nd) Business Day after the date of the Holder Redemption Notice.

¹ NTD: \$1mm pro rated among debentures.

e) Late Fee. All overdue accrued and unpaid interest or Holder Redemption Amount to be paid hereunder shall entail a late fee at an interest rate equal to the lesser of (x) 18.0% per annum or (y) the maximum rate permitted by applicable law (the "Late Fees") which shall accrue daily from such Interest Payment Date or Holder Redemption Amount is due hereunder through and including the date of actual payment in full of such interest payment or Holder Redemption Amount.

Section 3. Registration of Transfers and Exchanges.

a) Different Denominations. This Debenture is exchangeable for an equal aggregate principal amount of Debentures of different authorized denominations, as requested by the Holder surrendering the same. No service charge will be payable for such registration of transfer or exchange.

b) Investment Representations. This Debenture has been issued subject to certain investment representations of the original Holder set forth in the Purchase Agreement and may be transferred or exchanged only in compliance with the Purchase Agreement and applicable federal and state securities laws and regulations.

c) Reliance on Debenture Register. Prior to due presentment for transfer to the Company of this Debenture, the Company and any agent of the Company may treat the Person in whose name this Debenture is duly registered on the Debenture Register as the owner hereof for the purpose of receiving payment as herein provided and for all other purposes, whether or not this Debenture is overdue, and neither the Company nor any such agent shall be affected by notice to the contrary.

Section 4. Conversion.

a) Voluntary Conversion. At any time after the Original Issue Date until this Debenture is no longer outstanding, this Debenture shall be convertible, in whole or in part, into shares of Common Stock at the option of the Holder, at any time and from time to time (subject to the conversion limitations set forth in Section 4(d)). The Holder shall effect conversions by delivering to the Company a Notice of Conversion, the form of which is attached hereto as Annex A (each, a "Notice of Conversion"), specifying therein the principal amount of this Debenture to be converted (the "Converted Amount") and the date on which such conversion shall be effected (such date, the "Conversion Date"). If no Conversion Date is specified in a Notice of Conversion, the Conversion Date shall be the date that such Notice of Conversion is deemed delivered hereunder. No ink-original Notice of Conversion shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any Notice of Conversion form be required. To effect conversions hereunder, the Holder shall not be required to physically surrender this Debenture to the Company unless the entire principal amount of this Debenture, plus all accrued and unpaid interest thereon, has been so converted in which case the Holder shall surrender this Debenture as promptly as is reasonably practicable after such conversion without delaying the Company's obligation to deliver the shares on the Share Delivery Date; provided that immediately upon receipt of the shares on the Share Delivery Date, Holder shall conspicuously mark this Debenture as "cancelled". The outstanding principal amount of this Debenture will be reduced by the Conversion Amount as of the Conversion Date. The Holder and the Company shall maintain records showing the principal amount(s) converted and the date of such conversion(s). The Company may deliver an objection to any Notice of Conversion within one (1) Business Day of delivery of such Notice of Conversion. In the event of any dispute or discrepancy, the records of the Holder shall be controlling and determinative in the absence of manifest error. **The Holder, and any assignee by acceptance of this Debenture, acknowledge and agree that, by reason of the provisions of this paragraph, following conversion of a portion of this Debenture, the unpaid and unconverted principal amount of this Debenture may be less than the amount stated on the face hereof.**

b) Conversion Price. The conversion price in effect on any Conversion Date shall be equal to \$[____]², subject to adjustment herein (the “Conversion Price”).

c) Mechanics of Conversion.

i. Conversion Shares Issuable Upon Conversion of Principal Amount. The number of Conversion Shares issuable upon a conversion hereunder shall be determined by the quotient obtained by dividing (x) the outstanding principal amount of this Debenture to be converted, plus, at the option of the Holder, accrued and unpaid interest on the Converted Amount, by (y) the Conversion Price.

ii. Delivery of Conversion Shares Upon Conversion. Not later than the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period (as defined below) after each Conversion Date (the “Share Delivery Date”), the Company shall deliver, or cause to be delivered, to the Holder (A) the Conversion Shares which, on or after the earlier of (i) the six month anniversary of the Original Issue Date or (ii) the Effective Date, shall be free of restrictive legends and trading restrictions (other than those which may then be required by the Purchase Agreement) representing the number of Conversion Shares being acquired upon the conversion of this Debenture and (B) a wire transfer in the amount of accrued and unpaid interest on the Converted Amount that Holder elected to include in such conversion. On or after the earlier of (i) the six-month anniversary of the Original Issue Date or (ii) the Effective Date, the Company shall deliver any Conversion Shares required to be delivered by the Company under this Section 4(c) electronically through the Depository Trust Company or another established clearing corporation performing similar functions. As used herein, “Standard Settlement Period” means the standard settlement period, expressed in a number of Trading Days, on the Company’s primary Trading Market with respect to the Common Stock as in effect on the date of delivery of the Notice of Conversion.

iii. Failure to Deliver Conversion Shares. If, in the case of any Notice of Conversion, such Conversion Shares are not delivered to or as directed by the applicable Holder by the Share Delivery Date, the Holder shall be entitled to elect by written notice to the Company at any time on or before its receipt of such Conversion Shares, to rescind such Conversion, in which event the Company shall promptly return to the Holder any original Debenture delivered to the Company and the Holder shall promptly return to the Company the Conversion Shares issued to such Holder pursuant to the rescinded Conversion Notice.

² NTD: the lesser of (x) \$2.00 and (y) 100% premium over the average of the 5 daily closing prices prior to the Closing.

iv. Obligation Absolute. The Company's obligations to issue and deliver the Conversion Shares upon conversion of this Debenture in accordance with the terms hereof are absolute and unconditional, irrespective of any action or inaction by the Holder to enforce the same, any waiver or consent with respect to any provision hereof, the recovery of any judgment against any Person or any action to enforce the same, or any setoff, counterclaim, recoupment, limitation or termination, or any breach or alleged breach by the Holder or any other Person of any obligation to the Company or any violation or alleged violation of law by the Holder or any other Person, and irrespective of any other circumstance which might otherwise limit such obligation of the Company to the Holder in connection with the issuance of such Conversion Shares; provided, however, that such delivery shall not operate as a waiver by the Company of any such action the Company may have against the Holder. In the event the Holder of this Debenture shall elect to convert any or all of the outstanding principal amount hereof, the Company may not refuse conversion based on any claim that the Holder or anyone associated or affiliated with the Holder has been engaged in any violation of law, agreement or for any other reason, unless an injunction from a court, on notice to Holder, restraining and or enjoining conversion of all or part of this Debenture shall have been sought and obtained, and the Company posts a surety bond for the benefit of the Holder in the amount of 150% of the outstanding principal amount of this Debenture, which is subject to the injunction, which bond shall remain in effect until the completion of arbitration/litigation of the underlying dispute and the proceeds of which shall be payable to the Holder to the extent it obtains judgment. In the absence of such injunction, the Company shall issue Conversion Shares required to be delivered hereunder in accordance with the terms hereof. Nothing herein shall limit a Holder's right to pursue actual damages or declare an Event of Default pursuant to Section 8 for the Company's failure to deliver Conversion Shares within the period specified herein and the Holder shall have the right to pursue all remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief. The exercise of any such rights shall not prohibit the Holder from seeking to enforce damages pursuant to any other Section hereof or under applicable law.

v. Compensation for Buy-In on Failure to Timely Deliver Conversion Shares Upon Conversion. In addition to any other rights available to the Holder, if the Company fails for any reason to deliver to the Holder such Conversion Shares by the Share Delivery Date pursuant to Section 4(c)(ii), and if after such Share Delivery Date the Holder is required by its brokerage firm to purchase (in an open market transaction or otherwise), or the Holder's brokerage firm otherwise purchases, shares of Common Stock to deliver in satisfaction of a sale by the Holder of the Conversion Shares which the Holder was entitled to receive upon the conversion relating to such Share Delivery Date (a "Buy-In"), then the Company shall (A) pay in cash to the Holder (in addition to any other remedies available to or elected by the Holder) the amount, if any, by which (x) the Holder's total purchase price (including any brokerage commissions) for the Common Stock so purchased exceeds (y) the product of (1) the aggregate number of shares of Common Stock that the Holder was entitled to receive from the conversion at issue multiplied by (2) the actual sale price at which the sell order giving rise to such purchase obligation was executed (including any brokerage commissions) and (B) at the option of the Holder, either reissue (if surrendered) this Debenture in a principal amount equal to the principal amount of the attempted conversion (in which case such conversion shall be deemed rescinded) or deliver to the Holder the number of shares of Common Stock that would have been issued if the Company had timely complied with its delivery requirements under Section 4(c)(ii). For example, if the Holder purchases Common Stock having a total purchase price of \$11,000 to cover a Buy-In with respect to an attempted conversion of this Debenture with respect to which the actual sale price of the Conversion Shares (including any brokerage commissions) giving rise to such purchase obligation was a total of \$10,000 under clause (A) of the immediately preceding sentence, the Company shall be required to pay the Holder \$1,000. The Holder shall provide the Company written notice indicating the amounts payable to the Holder in respect of the Buy-In and, upon request of the Company, evidence of the amount of such loss. Nothing herein shall limit a Holder's right to pursue any other remedies available to it hereunder, at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief with respect to the Company's failure to timely deliver Conversion Shares upon conversion of this Debenture as required pursuant to the terms hereof.

vi. Reservation of Shares Issuable Upon Conversion. The Company covenants that it will at all times reserve and keep available out of its authorized and unissued shares of Common Stock for the sole purpose of issuance upon conversion of this Debenture, each as herein provided, free from preemptive rights or any other actual contingent purchase rights of Persons other than the Holder (and the other holders of the Debentures), not less than such aggregate number of shares of the Common Stock as shall (subject to the terms and conditions set forth in the Purchase Agreement) be issuable (taking into account the adjustments and restrictions of Section 5) upon the conversion of the then outstanding principal amount of this Debenture. The Company covenants that all shares of Common Stock that shall be so issuable shall, upon issue, be duly authorized, validly issued, fully paid and nonassessable and, if the Resale Registration Statement is then effective under the Securities Act, shall be registered for public resale in accordance with such Resale Registration Statement (subject to such Holder's compliance with its obligations under the Registration Rights Agreement).

vii. Fractional Shares. No fractional shares or scrip representing fractional shares shall be issued upon the conversion of this Debenture. As to any fraction of a share which the Holder would otherwise be entitled to purchase upon such conversion, the Company shall at its election, either pay a cash adjustment in respect of such final fraction in an amount equal to such fraction multiplied by the Conversion Price or round up to the next whole share.

viii. Transfer Taxes and Expenses. The issuance of Conversion Shares on conversion of this Debenture shall be made without charge to the Holder hereof for any documentary stamp or similar taxes that may be payable in respect of the issue or delivery of such Conversion Shares, provided that the Company shall not be required to pay any tax that may be payable in respect of any transfer involved in the issuance and delivery of any such Conversion Shares upon conversion in a name other than that of the Holder of this Debenture so converted and the Company shall not be required to issue or deliver such Conversion Shares unless or until the Person or Persons requesting the issuance thereof shall have paid to the Company the amount of such tax or shall have established to the satisfaction of the Company that such tax has been paid. The Company shall pay all Transfer Agent fees required for same-day processing of any Notice of Conversion and all fees to the Depository Trust Company (or another established clearing corporation performing similar functions) required for same-day electronic delivery of the Conversion Shares.

d) Holder's Conversion Limitations. The Company shall not effect any conversion of this Debenture, and a Holder shall not have the right to convert any portion of this Debenture, to the extent that after giving effect to the conversion set forth on the applicable Notice of Conversion, the Holder (together with the Holder's Affiliates, and any other Persons acting as a group together with the Holder or any of the Holder's Affiliates (such Persons, "Attribution Parties") would beneficially own in excess of the Beneficial Ownership Limitation (as defined below). For purposes of the foregoing sentence, the number of shares of Common Stock beneficially owned by the Holder and its Affiliates and Attribution Parties shall include the number of shares of Common Stock issuable upon conversion of this Debenture with respect to which such determination is being made, but shall exclude the number of shares of Common Stock which would be issuable upon (i) conversion of the remaining, unconverted principal amount of this Debenture beneficially owned by the Holder or any of its Affiliates or Attribution Parties and (ii) exercise or conversion of the unexercised or unconverted portion of any other securities of the Company subject to a limitation on conversion or exercise analogous to the limitation contained herein (including, without limitation, any other Debentures or the Warrants) beneficially owned by the Holder or any of its Affiliates or Attribution Parties. Except as set forth in the preceding sentence, for purposes of this Section 4(d), beneficial ownership shall be calculated in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. To the extent that the limitation contained in this Section 4(d) applies, the determination of whether this Debenture is convertible (in relation to other securities owned by the Holder together with any Affiliates and Attribution Parties) and of which principal amount of this Debenture is convertible shall be in the sole discretion of the Holder, and the submission of a Notice of Conversion shall be deemed to be the Holder's determination of whether this Debenture may be converted (in relation to other securities owned by the Holder together with any Affiliates or Attribution Parties) and which principal amount of this Debenture is convertible, in each case subject to the Beneficial Ownership Limitation, and the Company shall have no obligation to verify or confirm the accuracy of such determination. In addition, a determination as to any group status as contemplated above shall be determined in accordance with Section 13(d) of the Exchange Act and the rules and regulations promulgated thereunder. For purposes of this Section 4(d), in determining the number of outstanding shares of Common Stock, the Holder may rely on the number of outstanding shares of Common Stock as reflected in (A) the Company's most recent periodic or annual report filed with the Commission, as the case may be, (B) a more recent public announcement by the Company, or (C) a more recent written notice by the Company or the Company's transfer agent setting forth the number of shares of Common Stock outstanding. Upon the reasonable written or oral request of a Holder, the Company shall within two Trading Days confirm orally and in writing to the 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 this Debenture, by the Holder or its Affiliates since the date as of which such number of outstanding shares of Common Stock was reported. The "Beneficial Ownership Limitation" shall be 4.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock issuable upon conversion of this Debenture. The Holder, upon notice to the Company, may increase or decrease the Beneficial Ownership Limitation provisions of this Section 4(d), provided that the Beneficial Ownership Limitation in no event exceeds 9.99% of the number of shares of the Common Stock outstanding immediately after giving effect to the issuance of shares of Common Stock upon conversion of this Debenture held by the Holder and the Beneficial Ownership Limitation provisions of this Section 4(d) shall continue to apply. Any increase in the Beneficial Ownership Limitation will not be effective until the 61st day after such notice is delivered to the Company. The Beneficial Ownership Limitation provisions of this paragraph shall be construed and implemented in a manner otherwise than in strict conformity with the terms of this Section 4(d) to correct this paragraph (or any portion hereof) which may be defective or inconsistent with the intended Beneficial Ownership Limitation contained herein or to make changes or supplements necessary or desirable to properly give effect to such limitation. The limitations contained in this paragraph shall apply to a successor holder of this Debenture.

Section 5. Certain Adjustments.

a) Stock Dividends and Stock Splits. If the Company, at any time while this Debenture is outstanding: (i) pays a stock dividend or otherwise makes a distribution or distributions payable in shares of Common Stock on shares of Common Stock or any Common Stock Equivalents (which, for avoidance of doubt, shall not include any shares of Common Stock issued by the Company upon conversion of, or payment of interest on, the Debentures), (ii) subdivides outstanding shares of Common Stock into a larger number of shares, (iii) combines (including by way of a reverse stock split) outstanding shares of Common Stock into a smaller number of shares or (iv) issues, in the event of a reclassification of shares of the Common Stock, any shares of capital stock of the Company, then the Conversion Price shall be multiplied by a fraction of which the numerator shall be the number of shares of Common Stock (excluding any treasury shares of the Company) outstanding immediately before such event, and of which the denominator shall be the number of shares of Common Stock outstanding immediately after such event. Any adjustment made pursuant to this Section shall become effective immediately after the record date for the determination of stockholders entitled to receive such dividend or distribution and shall become effective immediately after the effective date in the case of a subdivision, combination or re-classification.

b) Intentionally Omitted.

c) Subsequent Rights Offerings. In addition to any adjustments pursuant to Section 5(a) above, if at any time the Company grants, issues or sells any Common Stock Equivalents or rights to purchase stock, warrants, securities or other property pro rata to the record holders of any class of shares of Common Stock (the "Purchase Rights"), then the Holder will be entitled to acquire, upon the terms applicable to such Purchase Rights, the aggregate Purchase Rights which the Holder could have acquired if the Holder had held the number of shares of Common Stock acquirable upon complete conversion of this Debenture (without regard to any limitations on exercise hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date on which a record is taken for the grant, issuance or sale of such Purchase Rights, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the grant, issue or sale of such Purchase Rights (provided, however, that, to the extent that the Holder's right to participate in any such Purchase Right would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Purchase Right to such extent (or beneficial ownership of such shares of Common Stock as a result of such Purchase Right to such extent) and such Purchase Right to such extent shall be held in abeyance for the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

d) Pro Rata Distributions. During such time as this Debenture is outstanding, if the Company shall declare or make any dividend or other distribution of its assets (or rights to acquire its assets) to holders of shares of Common Stock, by way of return of capital or otherwise (including, without limitation, any distribution of cash, stock or other securities, property or options by way of a dividend, spin off, reclassification, corporate rearrangement, scheme of arrangement or other similar transaction) (a “Distribution”), at any time after the issuance of this Debenture, then, in each such case, the Holder shall be entitled to participate in such Distribution to the same extent that the Holder would have participated therein if the Holder had held the number of shares of Common Stock acquirable upon complete conversion of this Debenture (without regard to any limitations on conversion hereof, including without limitation, the Beneficial Ownership Limitation) immediately before the date of which a record is taken for such Distribution, or, if no such record is taken, the date as of which the record holders of shares of Common Stock are to be determined for the participation in such Distribution (provided, however, that, to the extent that the Holder's right to participate in any such Distribution would result in the Holder exceeding the Beneficial Ownership Limitation, then the Holder shall not be entitled to participate in such Distribution to such extent (or in the beneficial ownership of any shares of Common Stock as a result of such Distribution to such extent) and the portion of such Distribution shall be held in abeyance for the benefit of the Holder until such time, if ever, as its right thereto would not result in the Holder exceeding the Beneficial Ownership Limitation).

e) Fundamental Transaction. If, at any time while this Debenture is outstanding, (i) the Company, directly or indirectly, in one or more related transactions effects any merger or consolidation of the Company with or into another Person, (ii) the Company (and all of its Subsidiaries, taken as a whole), directly or indirectly, effects any sale, lease, license, assignment, transfer, conveyance or other disposition of all or substantially all of its assets in one or a series of related transactions, (iii) any, direct or indirect, purchase offer, tender offer or exchange offer (whether by the Company or another Person) is completed pursuant to which holders of Common Stock are permitted to sell, tender or exchange their shares for other securities, cash or property and has been accepted by the holders of 50% or more of the outstanding Common Stock, (iv) the Company, directly or indirectly, in one or more related transactions effects any reclassification, reorganization or recapitalization of the Common Stock or any compulsory share exchange pursuant to which the Common Stock is effectively converted into or exchanged for other securities, cash or property, or (v) the Company, directly or indirectly, in one or more related transactions consummates a stock or share purchase agreement or other business combination (including, without limitation, a reorganization, recapitalization, spin-off, merger or scheme of arrangement) with another Person or group of Persons whereby such other Person or group acquires more than 50% of the outstanding shares of Common Stock (not including any shares of Common Stock held by the other Person or other Persons making or party to, or associated or affiliated with the other Persons making or party to, such stock or share purchase agreement or other business combination) (each a “Fundamental Transaction”), then, upon any subsequent conversion of this Debenture, the Holder shall have the right to receive, for each Conversion Share that would have been issuable upon such conversion immediately prior to the occurrence of such Fundamental Transaction (without regard to any limitation in Section 4(d), the number of shares of Common Stock of the successor or acquiring corporation or of the Company, if it is the surviving corporation, and any additional consideration (the “Alternate Consideration”) receivable as a result of such Fundamental Transaction by a holder of the number of shares of Common Stock for which this Debenture is convertible immediately prior to such Fundamental Transaction (without regard to any limitation in Section 4(d). For purposes of any such conversion, the determination of the Conversion Price shall be appropriately adjusted to apply to such Alternate Consideration based on the amount of Alternate Consideration issuable in respect of one (1) share of Common Stock in such Fundamental Transaction, and the Company shall apportion the Conversion Price among the Alternate Consideration in a reasonable manner reflecting the relative value of any different components of the Alternate Consideration. If holders of Common Stock are given any choice as to the securities, cash or property to be received in a Fundamental Transaction, then the Holder shall be given the same choice as to the Alternate Consideration it receives upon any conversion of this Debenture following such Fundamental Transaction. The Company shall cause any successor entity in a Fundamental Transaction in which the Company is not the survivor (the “Successor Entity”) to assume in writing all of the obligations of the Company under this Debenture and the other Transaction Documents (as defined in the Purchase Agreement) in accordance with the provisions of this Section 5(e) pursuant to written agreements in form and substance reasonably satisfactory to the Holder and approved by the Holder (without unreasonable delay) prior to such Fundamental Transaction and shall, at the option of the holder of this Debenture, deliver to the Holder in exchange for this Debenture a security of the Successor Entity evidenced by a written instrument substantially similar in form and substance to this Debenture which is convertible for a corresponding number of shares of capital stock of such Successor Entity (or its parent entity) equivalent to the shares of Common Stock acquirable and receivable upon conversion of this Debenture (without regard to any limitations on the conversion of this Debenture) prior to such Fundamental Transaction, and with a conversion price which applies the conversion price hereunder to such shares of capital stock (but taking into account the relative value of the shares of Common Stock pursuant to such Fundamental Transaction and the value of such shares of capital stock, such number of shares of capital stock and such conversion price being for the purpose of protecting the economic value of this Debenture immediately prior to the consummation of such Fundamental Transaction), and which is reasonably satisfactory in form and substance to the Holder. Upon the occurrence of any such Fundamental Transaction, the Successor Entity shall succeed to, and be substituted for (so that from and after the date of such Fundamental Transaction, the provisions of this Debenture and the other Transaction Documents referring to the “Company” shall refer instead to the Successor Entity), and may exercise every right and power of the Company and shall assume all of the obligations of the Company under this Debenture and the other Transaction Documents with the same effect as if such Successor Entity had been named as the Company herein.

f) Calculations. All calculations under this Section 5 shall be made to the nearest cent or the nearest 1/100th of a share, as the case may be. For purposes of this Section 5, the number of shares of Common Stock deemed to be issued and outstanding as of a given date shall be the sum of the number of shares of Common Stock (excluding any treasury shares of the Company) issued and outstanding.

g) Notice to the Holder.

i. Adjustment to Conversion Price. Whenever the Conversion Price is adjusted pursuant to any provision of this Section 5, the Company shall promptly deliver to each Holder a notice setting forth the Conversion Price after such adjustment and setting forth a brief statement of the facts requiring such adjustment.

ii. Notice to Allow Conversion by Holder. If (A) the Company shall declare a dividend (or any other distribution in whatever form) on the Common Stock, (B) the Company shall declare a special nonrecurring cash dividend on or a redemption of the Common Stock, (C) the Company shall authorize the granting to all holders of the Common Stock of rights or warrants to subscribe for or purchase any shares of capital stock of any class or of any rights, (D) the approval of any stockholders of the Company shall be required in connection with any reclassification of the Common Stock, any consolidation or merger to which the Company (and all of its Subsidiaries, taken as a whole) is a party, any sale or transfer of all or substantially all of the assets of the Company, or any compulsory share exchange whereby the Common Stock is converted into other securities, cash or property or (E) the Company shall authorize the voluntary or involuntary dissolution, liquidation or winding up of the affairs of the Company, then, in each case, the Company shall cause to be filed at each office or agency maintained for the purpose of conversion of this Debenture, and shall cause to be delivered to the Holder at its last address as it shall appear upon the Debenture Register, at least twenty (20) calendar days prior to the applicable record or effective date hereinafter specified, a notice stating (x) the date on which a record is to be taken for the purpose of such dividend, distribution, redemption, rights or warrants, or if a record is not to be taken, the date as of which the holders of the Common Stock of record to be entitled to such dividend, distributions, redemption, rights or warrants are to be determined or (y) the date on which such reclassification, consolidation, merger, sale, transfer or share exchange is expected to become effective or close, and the date as of which it is expected that holders of the Common Stock of record shall be entitled to exchange their shares of the Common Stock for securities, cash or other property deliverable upon such reclassification, consolidation, merger, sale, transfer or share exchange, provided that the failure to deliver such notice or any defect therein or in the delivery thereof shall not affect the validity of the corporate action required to be specified in such notice. To the extent that any notice provided hereunder constitutes, or contains, material, non-public information regarding the Company or any of the Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K. For the avoidance of doubt, the Holder shall remain entitled to convert this Debenture during the 20-day period commencing on the date of such notice through the effective date of the event triggering such notice except as may otherwise be expressly set forth herein.

Section 6. Covenants. As long as any portion of this Debenture remains outstanding:

a) Minimum Cash. The Company shall at all times maintain a cash balance of the lesser of (x) \$11,000,000 and (y) the then outstanding principal amount of this Debenture, from the Original Issue Date through the Maturity Date, in a deposit account subject to an Account Control Agreement. If, at any time, the Company's average three-day consolidated cash balance is less than \$14,500,000, then the Company shall promptly notify the Agent of the same and simultaneously publicly disclose such notice delivered to the Agent by filing a Form 8-K with the Commission;

b) Deposit Accounts. Within 30 days after the Original Issue Date the Company shall cause each of its and the Guarantors' deposit accounts located in the United State other than an Excluded Account to be subject to Account Control Agreements at all times thereafter; and

c) View Access. The Company shall provide the Agent, at all times, with real time, view only access to all of the Company's and the Guarantors' deposit accounts which are subject to an Account Control Agreement.

Section 7. Negative Covenants. As long as any portion of this Debenture remains outstanding, the Company shall not, and shall not permit any of the Subsidiaries to, directly or indirectly:

- a) other than Permitted Indebtedness, except with the prior written consent of the Agent, enter into, create, incur, assume, guarantee or suffer to exist any Indebtedness of any kind, including, but not limited to, a guarantee of Indebtedness of any other Person, on or with respect to any of its property or assets now owned or hereafter acquired or any interest therein or any income or profits therefrom;
- b) other than Permitted Liens, enter into, create, incur, assume or suffer to exist any Liens of any kind, on or with respect to any of its property or assets now owned or hereafter acquired or any interest therein or any income or profits therefrom;

- c) amend its charter documents, including, without limitation, its certificate of incorporation and bylaws, in any manner that materially and adversely affects any rights of the Holder;
- d) repay, repurchase or offer to repay, repurchase or otherwise acquire more than a de minimis number of shares of its Common Stock or Common Stock Equivalents other than repurchases of Common Stock or Common Stock Equivalents of departing employees, officers and directors of the Company, provided that such repurchases shall not exceed an aggregate of \$[100,000] for all officers and directors in any fiscal year; provided that nothing in this subsection (d) shall prohibit the conversion of the Company's existing Indebtedness into Common Stock or the cashless exercise of options or warrants;
- e) repay, repurchase or offer to repay, repurchase or otherwise acquire any Indebtedness other than the Debentures, except for (i) the repayment of Indebtedness occurring on the Original Issue Date with the proceeds of the Debentures and (ii) regularly scheduled principal and interest payments of Permitted Indebtedness as in effect as of the Original Issue Date, provided that such payments shall not be permitted if, at such time, or after giving effect to such payment, any Event of Default exists or occurs.
- f) pay cash dividends or distributions on any equity securities;
- g) assign, sell, transfer, license, lease or otherwise dispose of any its assets (including, without limitation, any disposition to any Subsidiary that has not executed and delivered the Subsidiary Guaranty and the Security Agreement to the Agent) other than (a) dispositions of cash and cash equivalents in the ordinary course of business; (b) dispositions of inventory, goods in the ordinary course of business; (c) licenses of Intellectual Property entered into in the ordinary course of business provided that the company receives fair market value consideration; (d) dispositions of worn-out, obsolete or surplus property in the ordinary course of business; provided that if any individual piece of property with a fair market value equal to or greater than \$25,000 is disposed of in reliance on this clause (d), such disposition shall be made for fair market value consideration, (e) the abandonment or other disposition of Intellectual Property that is, in the reasonable judgment of the Company, no longer profitable, economically practicable to maintain or useful in the conduct of the business of the Company and its Subsidiaries, taken as a whole; (f) transfers consisting of Permitted Investments in Subsidiaries under clause (c) of Permitted Investments; (g) subleases of real property leased by the Company or its Subsidiaries; and (h) other dispositions not to exceed \$100,000 in the aggregate per year;

- h) make or hold any Investments other than (collectively, “Permitted Investments”): (a) Investments existing on the date of the Purchase Agreement and that are disclosed in the SEC Reports (provided, for clarity, that neither the Company nor any Subsidiary shall increase the size of its Investment in any such Investment existing on the date of the Purchase Agreement other than in accordance with this Debenture and the other Transaction Documents), (b) Investments in cash and cash equivalents, (c) Investments in Subsidiaries (i) that have executed and delivered the Subsidiary Guaranty and the Security Agreement to the Agent and (ii) that are not Guarantors in an amount not to exceed \$500,000 in the aggregate in any calendar year; (d) Investments (including debt obligations) received in connection with the bankruptcy or reorganization of customers or suppliers and in settlement of delinquent obligations of, and other disputes with, customers or suppliers arising in the ordinary course of the Company’s business; (e) Investments consisting of notes receivable of, or prepaid royalties and other credit extensions, to customers and suppliers in the ordinary course of business and consistent with past practice, provided that this clause (e) shall not apply to Investments of the Company in any Subsidiary thereof; (f) Investments consisting of (i) loans not involving the net transfer on a substantially contemporaneous basis of cash proceeds to employees, officers or directors relating to the purchase of capital stock of the Company pursuant to employee stock purchase plans or other similar agreements approved by the Company’s Board of Directors and (ii) travel advances and employee relocation loans and other employee loans and advances in the ordinary course of business; provided that the aggregate of all such loans outstanding may not exceed \$50,000 at any time; (g) Intellectual Property licenses in the ordinary course of business; (h) extensions of credit to customers or advances, deposits or payment to or with suppliers, lessors or utilities or for workers’ compensation, in each case, that are incurred in the ordinary course of business; and (i) other Investments that do not exceed \$250,000 in the aggregate per calendar year;
- i) enter into any transaction with any Affiliate of the Company which would be required to be disclosed in any public filing with the Commission, unless such transaction is made on an arm’s-length basis and expressly approved by a majority of the disinterested directors of the Company (even if less than a quorum otherwise required for board approval);
- j) form, establish or acquire any New Subsidiary unless such New Subsidiary executes and delivers a joinder to the Subsidiary Guaranty and Security Agreement to the Agent immediately thereupon; or
- k) any Excluded Subsidiary, at any time to (i) own or have any economic interest in any material asset or property, (ii) incur any material liabilities, (iii) generate any material revenue or (iv) engage in any material business or business activity, in each case, without the prior written consent of the Agent

Section 8. Events of Default.

a) “Event of Default” means, wherever used herein, any of the following events (whatever the reason for such event and whether such event shall be voluntary or involuntary or 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):

i. any default in the payment of (A) the principal amount of any Debenture or (B) interest, liquidated damages and other amounts owing to a Holder on any Debenture, as and when the same shall become due and payable (whether on a Conversion Date or the Maturity Date or by acceleration or otherwise) which default, solely in the case of an interest payment or other default under clause (B) above, is not cured within 3 Trading Days;

ii. the Company shall fail to observe or perform any other covenant or agreement contained in the Debentures (other than a breach by the Company of its obligations to deliver shares of Common Stock to the Holder upon conversion, which breach is addressed in clause (xi) below) or in any Transaction Document, which failure is not cured, if possible to cure, within the earlier to occur of (A) 10 Trading Days after notice of such failure sent by the Holder or by any other Holder to the Company and (B) 15 Trading Days after the Company has become or should have become aware of such failure;

- iii. a default or event of default (subject to any grace or cure period provided in the applicable agreement, document or instrument) shall occur under any of the Transaction Documents;
- iv. any representation or warranty made in this Debenture, any other Transaction Documents, any written statement pursuant hereto or thereto or any other report, financial statement or certificate made or delivered to the Holder or any other Holder shall be untrue or incorrect in any material respect as of the date when made or deemed made;
- v. the Company or any Subsidiary shall be subject to a Bankruptcy Event;
- vi. the Company or any Subsidiary shall default on any of its obligations under any Indebtedness, that (a) involves an obligation greater than \$250,000, whether such Indebtedness now exists or shall hereafter be created, and (b) results in such Indebtedness becoming or being declared due and payable prior to the date on which it would otherwise become due and payable;
- vii. the Common Stock shall not be eligible for listing or quotation for trading on a Trading Market and shall not be eligible to resume listing or quotation for trading thereon within five Trading Days;
- viii. the Company (and all of its Subsidiaries, taken as a whole) shall be a party to any Change of Control Transaction or Fundamental Transaction;
- ix. the Resale Registration Statement or any additional registration statement required under the Registration Rights Agreement, in each case, shall not have been filed, declared effective and remained in effect, in each case, as required by the Registration Rights Agreement;
- x. if, during the Effectiveness Period (as defined in the Registration Rights Agreement), either (a) the effectiveness of the Resale Registration Statement lapses for any reason or (b) the Holder shall not be permitted to resell Registrable Securities (as defined in the Registration Rights Agreement) under the Resale Registration Statement for a period of more than 20 consecutive Trading Days or 30 non-consecutive Trading Days during any 12 month period;
- xi. the Company shall fail for any reason to deliver Conversion Shares to a Holder prior to the third Trading Day after a Conversion Date pursuant to Section 4(c) or the Company shall provide at any time notice to the Holder, including by way of public announcement, of the Company's intention to not honor requests for conversions of any Debentures in accordance with the terms hereof;
- xii. any Person shall breach any agreement delivered to the initial Holders pursuant to Section 2.2 of the Purchase Agreement;
- xiii. the electronic transfer by the Company of shares of Common Stock through the Depository Trust Company or another established clearing corporation is no longer available or is subject to a "chill";

xiv. any monetary judgment, writ or similar final process shall be entered or filed against the Company, any subsidiary or any of their respective property or other assets for more than \$250,000 (excluding any amounts covered by insurance pursuant to which the insurer has been notified and has not denied coverage), and such judgment, writ or similar final process shall remain unsatisfied, unvacated, unbonded or unstayed for a period of 30 calendar days;

xv. any Transaction Document shall for any reason fail or cease to create a valid Lien on the collateral described therein in favor of the Agent, or any material provision of any Transaction Document shall at any time for any reason cease to be valid and binding on or enforceable against the Company or the applicable Subsidiary, the validity or enforceability thereof shall be contested by any party thereto, or a proceeding shall be commenced by the Company, any Subsidiary or any governmental authority having jurisdiction over the Company or any such Subsidiary, seeking to establish the invalidity or unenforceability thereof; or

xvi. the occurrence of a Material Adverse Effect.

b) Remedies Upon Event of Default. If any Event of Default occurs and is continuing, the outstanding principal amount of this Debenture, plus accrued but unpaid interest, liquidated damages and other amounts owing in respect thereof through the date of acceleration, shall become, at the Required Holders' election, immediately due and payable in cash at the Mandatory Default Amount; provided that such acceleration shall be automatic, without any notice or other action of the Required Holders required, in respect of an Event of Default occurring pursuant to clause (v) of Section 7(a). Commencing 5 days after the occurrence and continuance of any Event of Default, the interest rate on this Debenture shall accrue at an interest rate equal to the lesser of (x) 18.0% per annum or (y) the maximum rate permitted under applicable law. Upon the payment in full of the Mandatory Default Amount, the Holder shall promptly surrender this Debenture to or as directed by the Company. In connection with such acceleration described herein, the Holder need not provide, and the Company hereby waives, any presentment, demand, protest or other notice of any kind, and the Holder may immediately and without expiration of any grace period enforce any and all of its rights and remedies hereunder and all other remedies available to it under applicable law. Such acceleration may be rescinded and annulled by Holder at any time prior to payment hereunder and the Holder shall have all rights as a holder of the Debenture until such time, if any, as the Holder receives full payment pursuant to this Section 7(b). No such rescission or annulment shall affect any subsequent Event of Default or impair any right consequent thereon.

Section 9 Miscellaneous.

a) Notices. Any and all notices or other communications or deliveries to be provided by the Holder hereunder, including, without limitation, any Notice of Conversion, shall be in writing and delivered personally, by email attachment, or sent by a nationally recognized overnight courier service, addressed to the Company, at the address set forth above, or such other email address, or address as the Company may specify for such purposes by notice to the Holder delivered in accordance with this Section 9(a). Any and all notices or other communications or deliveries to be provided by the Company hereunder shall be in writing and delivered personally, by email attachment, or sent by a nationally recognized overnight courier service addressed to each Holder at the email address or address of the Holder appearing on the books of the Company, or if no such email attachment or address appears on the books of the Company, at the principal place of business of such Holder, as set forth in the Purchase Agreement. Any notice or other communication or deliveries hereunder shall be deemed given and effective on the earliest of (i) the date of transmission, if such notice or communication is delivered via email attachment to the email address set forth on the signature pages attached hereto prior to 5:30 p.m. (New York City time) on any date, (ii) the next Trading Day after the date of transmission, if such notice or communication is delivered via email attachment to the email address set forth on the signature pages attached hereto on a day that is not a Trading Day or later than 5:30 p.m. (New York City time) on any Trading Day, (iii) the second Trading Day following the date of mailing, if sent by U.S. nationally recognized overnight courier service or (iv) upon actual receipt by the party to whom such notice is required to be given.

b) Absolute Obligation. Except as expressly provided herein, no provision of this Debenture shall alter or impair the obligation of the Company, which is absolute and unconditional, to pay the principal of, liquidated damages and accrued interest, as applicable, on this Debenture at the time, place, and rate, and in the coin or currency, herein prescribed. This Debenture is a direct debt obligation of the Company. This Debenture ranks pari passu with all other Debentures now or hereafter issued under the terms set forth herein.

c) Lost or Mutilated Debenture. If this Debenture shall be mutilated, lost, stolen or destroyed, the Company shall execute and deliver, in exchange and substitution for and upon cancellation of a mutilated Debenture, or in lieu of or in substitution for a lost, stolen or destroyed Debenture, a new Debenture for the principal amount of this Debenture so mutilated, lost, stolen or destroyed, but only upon receipt of evidence of such loss, theft or destruction of such Debenture, and of the ownership hereof, reasonably satisfactory to the Company.

d) Governing Law. All questions concerning the construction, validity, enforcement and interpretation of this Debenture shall be governed by and construed and enforced in accordance with the internal laws of the State of New York, without regard to the principles of conflict of laws thereof. Each party agrees that all legal proceedings concerning the interpretation, enforcement and defense of the transactions contemplated by any of the Transaction Documents (whether brought against a party hereto or its respective Affiliates, directors, officers, shareholders, employees or agents) shall be commenced in the state and federal courts sitting in the City of New York, Borough of Manhattan (the "New York Courts"). Each party hereto hereby irrevocably submits to the exclusive jurisdiction of the New York Courts for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein (including with respect to the enforcement of any of the Transaction Documents), and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of such New York Courts, or such New York Courts are improper or inconvenient venue for such proceeding. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Debenture and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any other manner permitted by applicable law. Each party hereto 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 Debenture or the transactions contemplated hereby. If any party shall commence an action or proceeding to enforce any provisions of this Debenture, then the prevailing party in such action or proceeding shall be reimbursed by the other party for its attorneys fees and other costs and expenses incurred in the investigation, preparation and prosecution of such action or proceeding.

e) Waiver. Any waiver by the Company or the Required Holders of a breach of any provision of this Debenture shall not operate as or be construed to be a waiver of any other breach of such provision or of any breach of any other provision of this Debenture. The failure of the Company or the Required Holders to insist upon strict adherence to any term of this Debenture on one or more occasions shall not be considered a waiver or deprive that party of the right thereafter to insist upon strict adherence to that term or any other term of this Debenture on any other occasion. Any waiver by the Company or the Required Holders must be in writing.

f) Severability. If any provision of this Debenture is invalid, illegal or unenforceable, the balance of this Debenture shall remain in effect, and if any provision is inapplicable to any Person or circumstance, it shall nevertheless remain applicable to all other Persons and circumstances. If it shall be found that any interest or other amount deemed interest due hereunder violates the applicable law governing usury, the applicable rate of interest due hereunder shall automatically be lowered to equal the maximum rate of interest permitted under applicable law. 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 or other law which would prohibit or forgive the Company from paying all or any portion of the principal of or interest on this Debenture as contemplated herein, wherever enacted, now or at any time hereafter in force, or which may affect the covenants or the performance of this Debenture, and the Company (to the extent it may lawfully do so) hereby expressly waives all benefits or advantage of any such law, and covenants that it will not, by resort to any such law, hinder, delay or impede the execution of any power herein granted to the Holder, but will suffer and permit the execution of every such as though no such law has been enacted.

g) Remedies, Characterizations, Other Obligations, Breaches and Injunctive Relief. The remedies provided in this Debenture shall be cumulative and in addition to all other remedies available under this Debenture and any of the other Transaction Documents at law or in equity (including a decree of specific performance and/or other injunctive relief), and nothing herein shall limit the Holder's right to pursue actual and consequential damages for any failure by the Company to comply with the terms of this Debenture. The Company covenants to the Holder that there shall be no characterization concerning this instrument other than as expressly provided herein. Amounts set forth or provided for herein with respect to payments, conversion and the like (and the computation thereof) shall be the amounts to be received by the Holder and shall not, except as expressly provided herein, be subject to any other obligation of the Company (or the performance thereof). The Company acknowledges that a breach by it of its obligations hereunder will cause irreparable harm to the Holder and that the remedy at law for any such breach may be inadequate. The Company therefore agrees that, in the event of any such breach or threatened breach, the Holder shall be entitled, in addition to all other available remedies, to an injunction restraining any such breach or any such threatened breach, without the necessity of showing economic loss and without any bond or other security being required. The Company shall provide all information and documentation to the Holder that is reasonably requested by the Holder to enable the Holder to confirm the Company's compliance with the terms and conditions of this Debenture.

h) Next Business Day. Whenever any payment or other obligation hereunder shall be due on a day other than a Business Day, such payment shall be made on the next succeeding Business Day.

i) Headings. The headings contained herein are for convenience only, do not constitute a part of this Debenture and shall not be deemed to limit or affect any of the provisions hereof.

j) Secured Obligation. The obligations of the Company under this Debenture are secured by substantially all assets of the Company and each domestic Subsidiary pursuant to the Security Agreement, dated as of [____], 2024, by and among the Company, the domestic Subsidiaries of the Company and the Secured Parties (as defined therein).

Section 10. Disclosure. Upon receipt or delivery by the Company of any notice in accordance with the terms of this Debenture, in the event that the Company believes that such notice contains material, non-public information relating to the Company or its Subsidiaries, the Company shall so indicate in such notice that it contains material, non-public information relating to the Company or its Subsidiaries and, simultaneously with the delivery of such notice to the Holder, the Company shall publicly disclose the contents of such notice in a Current Report on Form 8-K filed with the Commission. If the Company does not indicate to the Holder with delivery of such notice that it contains material, non-public information relating to the Company or its Subsidiaries, the Holder shall be allowed to presume that all matters set forth in such notice do not constitute material, nonpublic information relating to the Company or its Subsidiaries.

(Signature Page Follows)

IN WITNESS WHEREOF, the Company has caused this Debenture to be duly executed by a duly authorized officer as of the date first above indicated.

BIONANO GENOMICS, INC.

By: _____
Name:
Title:

NOTICE OF CONVERSION

The undersigned hereby elects to convert principal under the Senior Secured Convertible Debenture due [____], 2026 of Bionano Genomics, Inc., a Delaware corporation (the "Company"), into shares of common stock (the "Common Stock"), of the Company according to the conditions hereof, as of the date written below. If shares of Common Stock are to be issued in the name of a person other than the undersigned, the undersigned will pay all transfer taxes payable with respect thereto and is delivering herewith such certificates and opinions as reasonably requested by the Company in accordance therewith. No fee will be charged to the holder for any conversion, except for such transfer taxes, if any.

By the delivery of this Notice of Conversion the undersigned represents and warrants to the Company that its ownership of the Common Stock does not exceed the amounts specified under Section 4 of this Debenture, as determined in accordance with Section 13(d) of the Exchange Act.

The undersigned agrees to comply with the prospectus delivery requirements under the applicable securities laws in connection with any transfer of the aforesaid shares of Common Stock.

Conversion calculations:

Date to Effect Conversion:

Principal Amount of Debenture to be Converted:

Payment of Interest in Common Stock __ yes __ no

If yes, \$ _____ of Interest Accrued on Account of Conversion at Issue.

Number of shares of Common Stock to be issued:

Signature:

Name:

Address for Delivery of Common Stock Certificates:

Or

DWAC Instructions

Broker No: _____

Account

No: _____

Schedule 1

CONVERSION SCHEDULE

The Senior Secured Convertible Debentures due on [___], 2026 in the aggregate principal amount of \$20,000,000.00 are issued by Bionano Genomics, Inc. a Delaware corporation. This Conversion Schedule reflects conversions made under Section 4 of the above referenced Debenture.

Dated:

Date of Conversion (or for first entry, Original Issue Date)	Amount of Conversion	Aggregate Principal Amount Remaining Subsequent to Conversion (or original Principal Amount)	Company Attest

SECURITIES PURCHASE AGREEMENT

This Securities Purchase Agreement (this “**Agreement**”) is dated as of May 24, 2024, between Bionano Genomics, Inc, a Delaware corporation (the “**Company**”), each buyer identified on the signature pages hereto (each, including its successors and assigns, a “**Buyer**” and collectively, the “**Buyers**”), and JGB Collateral LLC, a Delaware limited liability company, as Collateral Agent.

WHEREAS, subject to the terms and conditions set forth in this Agreement, the Company desires to issue and sell to each Buyer, and each Buyer, severally and not jointly, desires to purchase from the Company, securities of the Company as more fully described in this Agreement.

NOW, THEREFORE, IN CONSIDERATION of the mutual covenants contained in this Agreement, and for other good and valuable consideration, the receipt and adequacy of which are hereby acknowledged, the Company and each Buyer agree as follows:

ARTICLE I. DEFINITIONS

1.1 **Definitions.** In addition to the terms defined elsewhere in this Agreement: (a) capitalized terms that are not otherwise defined herein have the meanings given to such terms in the Debentures (as defined herein), and (b) the following terms have the meanings set forth in this Section 1.1:

“**Action**” shall have the meaning assigned to such term in Section 3.1(j).

“**Affiliate**” means any Person that, directly or indirectly through one or more intermediaries, controls or is controlled by or is under common control with a Person, as such terms are used in and construed under Rule 405 under the Securities Act.

“**Approved Stock Plan**” means any employee benefit plan which has been approved by the board of directors of the Company prior to or subsequent to the Subscription Date pursuant to which Common Stock and standard options to purchase shares of Common Stock may be issued to any employee, officer or director for services provided to the Company in their capacity as such.

“**Available Undersubscription**” shall have the meaning assigned to such term in Section 4.11(c).

“**Basic Amount**” shall have the meaning assigned to such term in Section 4.11(b).

“**Board of Directors**” means the board of directors of the Company.

“**Business Day**” means any day other than Saturday, Sunday or other day on which commercial banks in The City of New York are authorized or required by law to remain closed; provided, however, for clarification, commercial banks shall not be deemed to be authorized or required by law to remain closed due to “stay at home”, “shelter-in-place”, “non-essential employee” or any other similar orders or restrictions or the closure of any physical branch locations at the direction of any governmental authority so long as the electronic funds transfer systems (including for wire transfers) of commercial banks in The City of New York are generally open for use by customers on such day.

“**Buyer Party**” shall have the meaning assigned to such term in Section 4.9.

“**Closing**” means the closing of the purchase and sale of the Debentures pursuant to Section 2.1.

“**Closing Date**” means the Trading Day on which all of the Transaction Documents referred to in Section 2.2 have been executed and delivered by the applicable parties thereto, and all conditions precedent to (i) the Buyers’ obligations to pay the Subscription Amount, and (ii) the Company’s obligations to deliver the Debentures have been satisfied or waived.

“**Code**” means the Internal Revenue Code of 1986, as amended.

“**Collateral Agent**” shall have the meaning assigned to such term in Section 4.13.

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

“**Common Stock**” means the common stock of the Company, par value \$0.0001 per share, and any other class of securities into which such securities may hereafter be reclassified or changed.

“**Common Stock Equivalents**” means any securities of the Company or the Subsidiaries which would entitle the holder thereof to acquire at any time Common Stock, including, without limitation, any debt, preferred stock, right, option, warrant or other instrument that is at any time convertible into or exercisable or exchangeable for, or otherwise entitles the holder thereof to receive, Common Stock.

“**Company Counsel**” means ArentFox Schiff LLP.

“**Conversion Shares**” means the Common Stock issued or issuable pursuant to the Debentures.

“**Current Subsidiary**” means any Person in which the Company on the date of this Agreement, directly or indirectly, (i) owns any of the outstanding issued share capital or holds any equity or similar interest of such Person or (ii) controls or operates all or any part of the business, operations or administration of such Person, and all of the foregoing, collectively, “**Current Subsidiaries**”.

“**Debentures**” means the Senior Secured Convertible Debentures, in substantially the form of Exhibit A, issued by the Company to the Buyers hereunder in accordance with the terms hereof.

“**Disclosure Schedules**” means the Disclosure Schedules delivered by the Company concurrently with the execution and delivery of this Agreement.

“**Effective Date**” means the earliest of the date that (a) the initial Resale Registration Statement has been declared effective by the Commission, (b) all of the Securities have been sold pursuant to Rule 144 or may be sold pursuant to Rule 144 without the requirement for the Company to be in compliance with the current public information required under Rule 144 and without volume or manner-of-sale restrictions, (c) following the one year anniversary of the Closing Date provided that a holder of the Securities is not an Affiliate of the Company or (d) all of the Securities may be sold pursuant to an exemption from registration under Section 4(a)(1) of the Securities Act without volume or manner-of-sale restrictions and Company Counsel has delivered to such holders a standing written unqualified opinion that resales may then be made by such holders of the Securities pursuant to such exemption which opinion shall be in form and substance reasonably acceptable to such holders.

“**ERISA**” shall mean the Employee Retirement Income Security Act of 1974, as amended, and the regulations and published interpretations thereunder.

“**Evaluation Date**” shall have the meaning assigned to such term in Section 3.1(w).

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

“**Excluded Securities**” means (i) Common Stock or standard options to purchase Common Stock issued to directors, officers or employees of the Company for services rendered to the Company in their capacity as such pursuant to an Approved Stock Plan, provided, that the aggregate number of shares of Common Stock subject to such Approved Stock Plan does not exceed 10% of the Company’s issued and outstanding shares of Common Stock on the date of this Agreement, and provided, further that the exercise price of any such options is not lowered, none of such options are amended to increase the number of shares issuable thereunder and none of the terms or conditions of any such options are otherwise materially changed in any manner that adversely affects any of the Buyers; (ii) shares of Common Stock issued upon the conversion or exercise of Common Stock Equivalents (other than standard options to purchase Common Stock issued pursuant to an Approved Stock Plan that are covered by clause (i) above) issued prior to the date of this Agreement, provided that the conversion price of any such Convertible Securities (other than standard options to purchase Common Stock issued pursuant to an Approved Stock Plan that are covered by clause (i) above) is not lowered, none of such Common Stock Equivalents (other than standard options to purchase Common Stock issued pursuant to an Approved Stock Plan that are covered by clause (i) above) are amended to increase the number of shares issuable thereunder and none of the terms or conditions of any such Common Stock Equivalents (other than standard options to purchase Common Stock issued pursuant to an Approved Stock Plan that are covered by clause (i) above) are otherwise materially changed in any manner that adversely affects any of the Buyers; (iii) the shares of Common Stock issuable upon conversion of the Debentures or otherwise pursuant to the terms of the Debentures; provided, that the terms of the Debentures are not amended, modified or changed on or after the date of this Agreement (other than antidilution adjustments pursuant to the terms thereof in effect as of the date of this Agreement), and (iv) shares of Common Stock issued pursuant to acquisitions or strategic transactions approved by a majority of the disinterested directors of the Company, provided that any such issuance shall only be to a Person (or to the equityholders of a Person) which is, itself or through its subsidiaries, an operating company or an owner of an asset in a business synergistic with the business of the Company and shall provide to the Company additional benefits in addition to the investment of funds, but shall not include a transaction in which the Company is issuing Common Stock primarily for the purpose of raising capital or to an entity whose primary business is investing in securities.

“Excluded Subsidiary” means those Subsidiaries that are listed on Section 3.1(a) hereto.

“GAAP” means the accounting principles generally accepted in the United States applied on a consistent basis during the periods involved.

“Governmental Authority” means any nation, state, county, city, town, village, district, or other political jurisdiction of any nature, federal, state, local, municipal, foreign, or other government, governmental or quasi-governmental authority of any nature (including any governmental agency, branch, department, official, or entity and any court or other tribunal), multi-national organization or body; or body exercising, or entitled to exercise, any administrative, executive, judicial, legislative, police, regulatory, or taxing authority or power of any nature or instrumentality of any of the foregoing, including any entity or enterprise owned or controlled by a government or a public international organization or any of the foregoing.

“Guarantor” means each Material Subsidiary of the Company.

“Haynes and Boone” means Haynes and Boone, LLP, with offices located at 30 Rockefeller Plaza, 26th Floor, New York, NY 10112.

“Healthcare Laws” shall have the meaning assigned to such term in Section 3.1(q).

“High Trail” shall have the meaning assigned to such term in Section 2.2(a)(viii).

“High Trail Note” shall have the meaning assigned to such term in Section 2.2(a)(viii).

“Indebtedness” shall have the meaning assigned to such term in the Debenture.

“Intellectual Property Rights” shall have the meaning assigned to such term in Section 3.1(n).

“IT Systems and Data” shall have the meaning assigned to such term in Section 3.1(z).

“Lien” shall have the meaning assigned to such term in the Debenture.

“Material Adverse Effect” shall have the meaning assigned to such term in Section 3.1(b).

“**Material Subsidiary**” shall mean all of the Company’s Subsidiaries other than the Excluded Subsidiaries.

“**Maximum Rate**” shall have the meaning assigned to such term in Section 5.16.

“**Money Laundering Laws**” shall have the meaning assigned to such term in Section 3.1(w).

“**New Subsidiary**” means, as of any date of determination, any Person in which the Company after the date of this Agreement, directly or indirectly, (i) owns or acquires any of the outstanding issued share capital or holds any equity or similar interest of such Person or (ii) controls or operates all or any part of the business, operations or administration of such Person, and all of the foregoing, collectively, “**New Subsidiaries**”.

“**NOLs**” shall have the meaning assigned to such term in Section 3.1(t).

“**Notice of Acceptance**” shall have the meaning assigned to such term in Section 4.11(c).

“**OFAC**” shall have the meaning assigned to such term in Section 3.1(w).

“**Offer**” shall have the meaning assigned to such term in Section 4.11(b).

“**Offer Notice**” shall have the meaning assigned to such term in Section 4.11(b).

“**Offer Period**” shall have the meaning assigned to such term in Section 4.11(c).

“**Offered Securities**” shall have the meaning assigned to such term in Section 4.11(b).

“**Participation Maximum**” shall have the meaning assigned to such term in Section 4.11(a).

“**Permits**” means all permits, licenses, registrations, certificates, orders, approvals, authorizations, consents, waivers, franchises, variances and similar rights issued by or obtained from any Governmental Authority.

“**Permitted Liens**” shall have the meaning assigned to such term in the Debentures.

“**Person**” means an individual or corporation, partnership, trust, incorporated or unincorporated association, joint venture, limited liability company, joint stock company, government (or an agency or subdivision thereof) or other entity of any kind.

“**Placement Agent**” means Canaccord Genuity LLC.

“**Pre-Notice**” shall have the meaning assigned to such term in Section 4.11(b).

“**Press Release**” shall have the meaning assigned to such term in Section 4.6.

“**Principal Amount**” means, as to each Buyer, the amounts set forth below such Buyer’s signature block on the signature pages hereto next to the heading “Principal Amount” of Debentures purchased by such Buyer, which shall equal \$20,000,000.00 in the aggregate.

“**Principal Market**” means the Nasdaq Global Select Market.

“**Proceeding**” means an action, claim, suit, investigation or proceeding (including, without limitation, an informal investigation or partial proceeding, such as a deposition), whether commenced or threatened.

“**Refused Securities**” shall have the meaning assigned to such term in Section 4.11(d).

“**Registration Rights Agreement**” means the Registration Rights Agreement, dated on or about the date hereof, among the Company and the Buyers, in the form of Exhibit B attached hereto, with respect to the registration of the Shares and the Conversion Shares for resale by the Buyers.

“**Required Approvals**” shall have the meaning assigned to such term in Section 3.1(e).

“**Required Holders**” means (i) prior to the Closing Date, each Buyer entitled to purchase Debentures at the Closing and (ii) after the Closing Date, holders of a majority of the Securities outstanding as of such time (excluding any Securities held by the Company or any of its Subsidiaries as of such time). Notwithstanding anything to the contrary set forth in the Transaction Documents, so long as JGB Partners LP owns Debentures, such holders of the majority of the Securities outstanding must include JGB Partners LP.

“**Resale Registration Statement**” means a resale registration statement meeting the requirements set forth in the Registration Rights Agreement and covering the resale of the Shares and the Conversion Shares by each Buyer as provided for in the Registration Rights Agreement.

“**Rule 144**” means Rule 144 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same effect as such Rule.

“**Rule 424**” means Rule 424 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended or interpreted from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same purpose and effect as such Rule.

“**SEC Reports**” shall have the meaning assigned to such term in Section 3.1(h).

“**Securities**” means the Shares, the Debentures, and the Conversion Shares.

“**Securities Act**” means the Securities Act of 1933, as amended, and the rules and regulations promulgated thereunder.

“**Security Agreement**” means the Security Agreement, dated the date hereof, among the Company, each Material Subsidiary, the Collateral Agent and the Buyers, in the form of Exhibit C attached hereto.

“**Security Documents**” means the Security Agreement, the Blocked Account Agreement and such other security agreements, security deeds, fixed and floating charges, debentures and other security instruments that Collateral Agent reasonable requires to obtain a perfected, first prior security interest in substantially all of the assets and property of the Company and its Material Subsidiaries.

“**Shares**” means 2,250,00 shares of Common Stock (appropriately adjusted for any stock split, stock dividend, reverse stock split, stock combination or similar transaction that occurs after the date hereof and prior to the Closing Date).

“**Subscription Amount**” means, as to each Buyer, the aggregate amount to be paid for the Shares and Debentures purchased hereunder as specified below such Buyer’s name on the signature page of this Agreement and next to the heading “Subscription Amount” in immediately available funds. The aggregate “Subscription Amount” shall be \$18,000,000.00.

“**Subsequent Placement**” shall have the meaning assigned to such term in Section 4.11(a).

“**Subsequent Placement Agreement**” shall have the meaning assigned to such term in Section 4.11(d).

“**Subsequent Placement Documents**” shall have the meaning assigned to such term in Section 4.11(h).

“**Subsidiaries**” and “**Subsidiary**” means, as of any date of determination, collectively, all Current Subsidiaries and all New Subsidiaries, and each of the foregoing, individually, a “**Subsidiary**.”

“**Subsidiary Guarantee**” means a guarantee executed by each Guarantor in the form attached hereto as Exhibit D.

“**Trading Day**” shall have the meaning assigned such term in the Debentures.

“**Transaction Documents**” means this Agreement, the Debentures, the Security Agreement, the Subsidiary Guarantee, the Registration Rights Agreement and all exhibits and schedules thereto and hereto and any other documents or agreements executed by the Company or any Guarantor in connection with the transactions contemplated hereunder.

“**Transfer Agent**” means American Stock Transfer & Trust Company, LLC.

“**Transfer Agent Instructions**” means irrevocable instructions to the Transfer Agent executed by the Company with respect to the conversion of the Debentures and acceptable to the Buyers in form and substance.

“**Undersubscription Amount**” shall have the meaning assigned to such term in Section 4.11(b).

ARTICLE II. PURCHASE AND SALE

2.1 Closing. On the Closing Date, upon the terms and subject to the conditions set forth herein, the Company agrees to sell, and the Buyers, severally and not jointly, agree to purchase from the Company, the Shares and the Debentures in the aggregate principal amount of twenty million dollars (\$20,000,000.00). Each Buyer shall deliver to the Company, via wire transfer or a certified check, immediately available funds equal to such Buyer’s Subscription Amount as set forth on the signature page hereto executed by such Buyer, and the Company shall deliver to each Buyer its respective Shares and Debentures, and the Company and each Buyer shall deliver the other items set forth in Section 2.2 deliverable at the Closing. Upon satisfaction of the covenants and conditions set forth in Sections 2.2 and 2.3, the Closing shall occur at the offices of Haynes and Boone or such other location as the parties shall mutually agree.

2.2 Deliveries.

- (a) On or prior to the Closing Date, the Company shall deliver or cause to be delivered to each Buyer the following:
 - (i) this Agreement and each other Transaction Document, duly executed by the Company or the Guarantors, as applicable;
 - (ii) a copy of a resolution of the board of directors of the Company:
 - 1. approving the terms of, and the transactions contemplated by, the Transaction Documents to which it is a party and resolving that it execute those Transaction Documents;
 - 2. authorizing a specified person or persons to execute those Transaction Documents on its behalf; and
 - (iii) authorizing a specified person or persons, on its behalf, to sign and/or dispatch all documents and notices to be signed and/or dispatched by it under or in connection with those Transaction Documents;
 - (iv) a legal opinions of Company Counsel, in form and substance reasonably acceptable to such Buyer;

- (v) duly executed irrevocable instructions to the Transfer Agent to issue such Buyer's Shares in accordance with its Subscription Amount in book entry form;
 - (vi) a "wet ink" Debenture with a principal amount equal to such Buyer's Principal Amount, registered in the name of such Buyer;
 - (vii) the Subsidiary Guarantee duly executed by each Guarantor;
 - (viii) a fully executed copy of that certain Letter Agreement Re: Agreement to Redeem Senior Secured Convertible Notes due 2025 executed by each of the Company and High Trail Special Situations LLC ("High Trail") relating to that certain Senior Secured Convertible Note due 2025 made by the Company in favor of High Trail in the original principal amount of \$45,000,000 (as amended, the "High Trail Note");
 - (ix) Evidence that the High Trail Note has been fully redeemed; and
 - (x) Evidence that a Financing Statement on Form UCC-3 has been filed with the Delaware Secretary of State terminating that certain Financing Statement initially filed on October 13, 2023 in favor of High Trail against the assets of the Company.
- (b) On or prior to the Closing Date, each Buyer shall deliver or cause to be delivered to the Company the following:
- (i) this Agreement duly executed by such Buyer;
 - (ii) the Security Agreement duly executed by the Collateral Agent and such Buyer; and
 - (iii) such Buyer's Subscription Amount by wire transfer to the account specified in writing by the Company.

2.3 Closing Conditions.

- (a) The obligations of the Company hereunder in connection with the Closing are subject to the following conditions being met:
- (i) the accuracy in all material respects on the Closing Date of the representations and warranties of the Buyers contained herein (except to the extent expressly made as of a specific date, in which case they shall be accurate in all material respects as of such date);
 - (ii) all obligations, covenants and agreements of each Buyer required to be performed at or prior to the Closing Date shall have been performed; and
 - (iii) the delivery by each Buyer of the items set forth in Section 2.2(b).

(b) The respective obligations of the Buyers hereunder in connection with the Closing are subject to the following conditions being met or waived in the Buyers' sole and absolute discretion:

(i) the accuracy in all material respects when made and on the Closing Date of the representations and warranties of the Company contained herein, provided that, the representations and warranties of the Company that are qualified by materiality or Material Adverse Effect shall be accurate in all respects when made and on the Closing Date, in both cases except to the extent expressly made as of a specific date, in which case they shall be accurate in all material respects or all respects, as applicable, as of such date;

(ii) all obligations, covenants and agreements of the Company required to be performed at or prior to the Closing Date shall have been performed;

(iii) the delivery by the Company of the items set forth in Section 2.2(a);

(iv) there shall have been no Material Adverse Effect with respect to the Company since the date hereof;

(v) there shall have been no event or circumstance that would constitute an "Event of Default" under the Debentures or that would with passage of time, the giving of notice or both become an "Event of Default" under the Debentures;

(vi) the Company shall have delivered a certificate, executed on behalf of the Company, by its Secretary, dated as of the Closing Date, certifying the resolutions adopted by the Board of Directors or equivalent governing body of the Company approving the transactions contemplated by this Agreement and the other Transaction Documents, certifying the current versions of the Company's certificate or articles of incorporation and bylaws or other constitutional documents and certifying as to the signatures and authority of Persons signing the Transaction Documents and related documents on behalf of the Company;

(vii) the Company shall have delivered a certificate, executed on behalf of the Company by its Chief Executive Officer or its Chief Financial Officer, dated as of the Closing Date, certifying to the fulfillment of the conditions specified in this Section 2.3(b); and

(viii) from the date hereof to the Closing Date, trading in the Common Stock shall not have been suspended or halted by the Principal Market or the Commission (nor shall such suspension or halt be threatened by the Principal Market or the Commission, including but not limited, receipt by the Company of any notice of non-compliance with maintenance requirements by the Principal Market, and, at any time prior to the Closing Date, trading in securities generally as reported by Bloomberg L.P. shall not have been suspended or limited, or minimum prices shall not have been established on securities whose trades are reported by such service, or on the Principal Market, nor shall a banking moratorium have been declared either by United States or New York State authorities nor shall there have occurred any material outbreak or escalation of hostilities or other national or international calamity of such magnitude in its effect on, or any material adverse change in, any financial market which, in each case, in the reasonable judgment of such Buyer, makes it impracticable or inadvisable to purchase the Securities at the Closing.

**ARTICLE III.
REPRESENTATIONS AND WARRANTIES**

3.1 Representations and Warranties of the Company. the Company hereby makes the following representations and warranties to the Buyers and the Placement Agent:

(a) Subsidiaries. All of the direct and indirect Subsidiaries of the Company are set forth on Schedule 3.1(a) of the Disclosure Schedule. The Company owns, directly or indirectly, all of the share capital or other equity interests of each Subsidiary free and clear of any Liens, options or warrants, and all of the issued and outstanding share capital of each Subsidiary are validly issued and are fully paid, non-assessable and free of preemptive and similar rights to subscribe for or purchase securities. Each Subsidiary that is not a Guarantor would not be deemed a “Significant Subsidiary” within the meaning of Section 1-02 of Regulation S-X.

(b) Organization and Qualification. The Company and each of the Material Subsidiaries is an entity duly incorporated or otherwise organized, validly existing and in good standing under the laws of the jurisdiction of its incorporation or organization, with the requisite power and authority to own and use its properties and assets and to carry on its business as currently conducted. Neither the Company nor any Material Subsidiary is in violation nor default of any of the provisions of its respective constitution, memorandum and articles of association, certificate or articles of incorporation, bylaws or other organizational or charter documents. Each of the Company and the Material Subsidiaries is duly qualified to conduct business and is in good standing as a foreign corporation or other entity in each jurisdiction in which the nature of the business conducted or property owned by it makes such qualification necessary, except where the failure to be so qualified or in good standing, as the case may be, would not have or reasonably be expected to result in: (i) a material adverse effect on the legality, validity or enforceability of any Transaction Document, (ii) a material adverse effect on the results of operations, assets, business, condition (financial or otherwise) or prospects of the Company and the Material Subsidiaries, taken as a whole, or (iii) a material adverse effect on the Company’s ability to perform or pay in any material respect on a timely basis its obligations under any Transaction Document (any of (i), (ii), or (iii), a “**Material Adverse Effect**”) and 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.

(c) Authorization, Enforcement. The Company has the requisite corporate power and authority to enter into and to consummate the transactions contemplated by this Agreement and each of the other Transaction Documents and otherwise to carry out its obligations hereunder and thereunder. The execution and delivery of this Agreement and each of the other Transaction Documents by the Company and the consummation by it of the transactions contemplated hereby and thereby have been duly authorized by all necessary action on the part of the Company and no further authorization, approval or action is required by the Company, the Board of Directors or the Company's shareholders in connection herewith or therewith other than in connection with the Required Approvals. This Agreement and each other Transaction Document to which it is a party has been (or upon delivery will have been) duly executed by the Company and, when delivered in accordance with the terms hereof and thereof, will constitute the valid and binding obligation of the Company enforceable against the Company in accordance with its terms, except: (i) as limited by general equitable principles and applicable bankruptcy, insolvency, reorganization, moratorium, administration, judicial management and other laws of general application affecting enforcement of creditors' rights generally, (ii) as limited by laws relating to the availability of specific performance, injunctive relief or other equitable remedies, and (iii) insofar as indemnification and contribution provisions may be limited by applicable law.

(d) No Conflicts. The execution, delivery and performance by the Company of this Agreement and the other Transaction Documents to which it is a party, the issuance and sale of the Securities and the consummation by it of the transactions contemplated hereby and thereby do not and will not: (i) conflict with or violate any provision of the Company's or any Material Subsidiary's constitution, memorandum and articles of association, certificate or articles of incorporation, bylaws or other organizational or charter documents, (ii) conflict with, or constitute a default (or an event that with notice or lapse of time or both would become a default) under, result in the creation of any Lien (other than pursuant to the Transaction Documents) upon any of the properties or assets of the Company or any Material Subsidiary, or give to others any rights of termination, amendment, acceleration or cancellation (with or without notice, lapse of time or both) of, any agreement, credit facility, debt or other instrument (evidencing a Company or Material Subsidiary debt or otherwise) or other understanding to which the Company or any Material Subsidiary is a party or by which any property or asset of the Company or any Material Subsidiary is bound or affected, or (iii) subject to the receipt of the Required Approvals, conflict with or result in a violation of any law, rule, regulation, order, judgment, injunction, decree or other restriction of the Principal Market, or any court or Governmental Authority, Principal Market, to which the Company or a Material Subsidiary is subject (including federal and state securities laws and regulations), or by which any property or asset of the Company or a Material Subsidiary is bound or affected; except in the case of each of clauses (ii) and (iii), such as would not have or reasonably be expected to result in a Material Adverse Effect.

(e) Filings, Consents and Approvals. The Company is not required to obtain any consent, waiver, authorization or order of, give any notice to, or make any filing or registration with, any court or other foreign, federal, state, local or other Governmental Authority in connection with the execution, delivery and performance by the Company of the Transaction Documents, other than: (i) application to the Principal Market for the listing of the Shares and Conversion Shares for trading thereon in the time and manner required thereby, (ii) such filings as are required to be made under applicable state securities laws or the rules of the Financial Industry Regulatory Authority, Inc. and (iii) the filing of Form D for the Securities with the Commission (collectively, the "**Required Approvals**"). The Company not aware of any circumstances that given the passage of time would result in the Company not being able to get the Required Approvals and has no knowledge of any violation of the requirements of the Principal Market that would result in a delisting or suspension of the Common Stock in the foreseeable future.

(f) Issuance of the Securities; Registration. The Securities are duly authorized and, when issued and paid for in accordance with the applicable Transaction Documents, will be duly and validly issued free and clear of all Liens, preemptive or similar rights, defects, claims, charges, taxes and rights of first refusal. As of the Closing, the Company shall have reserved from its duly authorized capital stock not less than 100% of the maximum number of shares of Common Stock issuable upon conversion of the Debentures (without taking into account any limitations on the conversion of the Debentures set forth therein).

(g) Capitalization. The Company is authorized to issue 400,000,000 shares of Common Stock and 10,000,000 shares of preferred stock, par value \$0.0001 per share. The capitalization of the Company is as set forth on Schedule 3.1(g) of the Disclosure Schedule. The Company has not issued any share capital since its most recently filed periodic report under the Exchange Act, other than as set forth on Schedule 3.1(g) of the Disclosure Schedule pursuant to the exercise of employee share options under the Company's stock incentive plans, the issuance of Common Stock to employees or consultants pursuant to the Company's stock incentive plans and pursuant to the conversion and/or exercise Common Stock Equivalents outstanding as of the date of the most recently filed periodic report under the Exchange Act. No Person has any right of first refusal, preemptive right, right of participation, or any similar right to participate in the transactions contemplated by the Transaction Documents. Except as set forth on Schedule 3.1(g) of the Disclosure Schedule or in the Transactions Documents, there are no outstanding options, warrants, scrip rights to subscribe to, calls or commitments of any character whatsoever relating to, or securities, rights or obligations convertible into or exercisable or exchangeable for, or giving any Person any right to subscribe for or acquire any Common Stock, or contracts, commitments, understandings or arrangements by which the Company or any Subsidiary is or may become bound to issue additional Common Stock or Common Stock Equivalents. Except as set forth on Schedule 3.1(g) of the Disclosure Schedule or in the Transaction Documents, the issuance and sale of the Securities will not obligate the Company to issue Common Stock or other securities to any Person (other than the Buyers) and will not result in a right of any holder of Company securities to adjust the exercise, conversion, exchange or reset price under any of such securities. Except as set forth in Schedule 3.1(g) of the Disclosure Schedule, there are no outstanding securities or instruments of the Company or any Subsidiary with any provision that adjusts the exercise, conversion, exchange or reset price of such security or instrument upon an issuance of securities by the Company or any Subsidiary. There are no outstanding securities or instruments of the Company or any Subsidiary that contain any redemption or similar provisions, and there are no contracts, commitments, understandings or arrangements by which the Company or any Subsidiary is or may become bound to redeem a security of the Company or such Subsidiary. The Company does not have any stock appreciation rights or "phantom stock" plans or agreements or any similar plan or agreement. All of the outstanding shares of share capital of the Company are duly authorized, validly issued, fully paid and non-assessable, have been issued in compliance with all applicable foreign, federal and state securities laws, and none of such outstanding shares was issued in violation of any preemptive rights or similar rights to subscribe for or purchase securities. No further approval or authorization of any shareholder, the Board of Directors or others is required for the issuance and sale of the Securities. There are no shareholders agreements, voting agreements or other similar agreements with respect to the Company's share capital to which the Company is a party or, to the knowledge of the Company, between or among any of the Company's stockholders.

(h) SEC Reports; Financial Statements. The Company has filed all reports, schedules, forms, statements and other documents required to be filed by the Company under the Securities Act and the Exchange Act, including pursuant to Section 13(a) or 15(d) thereof (the foregoing materials filed prior to the date hereof, including the exhibits thereto and documents incorporated by reference therein, being collectively referred to herein as the “**SEC Reports**”) on a timely basis or has qualified for a valid extension of such time of filing and has filed any such SEC Reports prior to the expiration of any such extension. As of their respective dates, the SEC Reports complied in all material respects with the requirements of the Securities Act and the Exchange Act, as applicable, and none of the SEC Reports, when filed, contained any 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. The Company is not currently, and has never been, an issuer subject to paragraph (i) of Rule 144. The financial statements of the Company included in the SEC Reports comply in all material respects with applicable accounting requirements and the rules and regulations of the Commission with respect thereto as in effect at the time of filing. Such financial statements have been prepared in accordance with GAAP, except as may be otherwise specified in such financial statements or the notes thereto and except that unaudited financial statements may not contain all footnotes required by GAAP, and fairly present in all material respects the financial position of the Company and its consolidated Subsidiaries as of and for the dates thereof and the results of operations and cash flows for the periods then ended, subject, in the case of unaudited statements, to normal, immaterial, year-end audit adjustments.

(i) Material Changes; Undisclosed Events, Liabilities or Developments. Since the date of the latest financial statements included within the SEC Reports, except as specifically disclosed in a subsequent SEC Report filed prior to the date hereof: (i) there has been no event, occurrence or development that has had or that would reasonably be expected to result in a Material Adverse Effect, (ii) neither the Company nor any Subsidiary has incurred any liabilities (contingent or otherwise) other than (A) trade payables and accrued expenses incurred in the ordinary course of business consistent with past practice, and (B) liabilities not required to be reflected in the Company’s financial statements pursuant to GAAP or disclosed in filings made with the Commission, (iii) the Company has not altered its method of accounting, (iv) the Company has not declared or made any dividend or distribution of cash or other property to its shareholders or purchased, redeemed or made any agreements to purchase or redeem any shares of its share capital, and (v) the Company has not issued any equity securities to any officer, director or Affiliate, except pursuant to existing Company stock option plans. The Company does not have pending before the Commission any request for confidential treatment of information. Except for the issuance of the Securities contemplated by this Agreement or as set forth on Schedule 3.1(i) of the Disclosure Schedule, to the knowledge of the Company, no event, liability, fact, circumstance, occurrence or development has occurred or exists or is reasonably expected to occur or exist with respect to the Company or its Subsidiaries or their respective businesses, properties, operations, assets or financial condition, that would be required to be disclosed by the Company under applicable securities laws at the time this representation is made or deemed made that has not been publicly disclosed at least one (1) Trading Day prior to the date that this representation is made.

(j) Litigation. Except as disclosed in Schedule 3.1(j) of the Disclosure Schedule, there is no action, suit, inquiry, notice of violation, proceeding or investigation of any nature pending or, to the knowledge of the Company, threatened against or affecting the Company, any Subsidiary or any of their respective properties before or by any court, arbitrator, the Principal Market, governmental or administrative agency, regulatory authority or self-regulatory organization (federal, state, county, local or foreign) (collectively, an “**Action**”) which (i) adversely affects or challenges the legality, validity or enforceability of any of the Transaction Documents or the Securities, or (ii) would, have or reasonably be expected to result in a Material Adverse Effect. None of the Company, any Subsidiary, or any current director or officer thereof, is or has been the subject of any Action involving a claim of violation of or liability under federal or state securities laws or a claim of breach of fiduciary duty. There has not been, and to the knowledge of the Company, there is not pending or contemplated, any investigation by a Governmental Authority involving the Company or any current or former director or officer of the Company, except as set forth on Schedule 3.1(j) of the Disclosure Schedule. The Commission has not issued any stop order or other order suspending the effectiveness of any registration statement filed by the Company or any Subsidiary under the Exchange Act or the Securities Act.

(k) Compliance. Neither the Company nor any Subsidiary: (i) except as set forth on Schedule 3.1(k) of the Disclosure Schedule, is in default under or in violation of (and no event has occurred that has not been waived that, with notice or lapse of time or both, would result in a default by the Company or any Subsidiary under), nor has the Company or any Subsidiary notice of a claim that it is in default under or that it is in violation of, any indenture, loan or credit agreement or any other agreement or instrument to which it is a party or by which it or any of its properties is bound (whether or not such default or violation has been waived), (ii) is in violation of any applicable judgment, decree or order of any court, arbitrator, Principal Market, governmental or administrative agency, regulatory authority, self-regulatory organization (federal, state, county, local or foreign) or other Governmental Authority, or (iii) is or has been in violation of any applicable statute, rule, ordinance or regulation of any Governmental Authority, including without limitation all applicable foreign, federal, state and local laws relating to taxes, bribery and corruption, occupational health and safety, product quality and safety, employment and labor matters, employee benefits and laws related to the protection of the environment, except, in each case of clauses (i), (ii) and (iii), as would not reasonably be expected, individually or in the aggregate, to, have a Material Adverse Effect.

(l) Regulatory Permits. The Company and the Subsidiaries possess all Permits necessary to conduct their respective businesses, except where the failure to possess such Permits would not reasonably be expected to result in a Material Adverse Effect, and neither the Company nor any Subsidiary has received any notice of proceedings relating to the revocation or modification of any such Permit.

(m) Title to Assets. The Company and the Material Subsidiaries have good and marketable title in fee simple to all real property owned by them and good and marketable title in all personal property owned by them that is material to the business of the Company and the Material Subsidiaries, in each case free and clear of all Liens, except for (i) Permitted Liens, (ii) Liens as do not materially affect the value of such property and do not materially interfere with the use made and proposed to be made of such property by the Company and the Material Subsidiaries, and (iii) Liens for the payment of federal, state or other taxes, for which appropriate reserves have been made therefor in accordance with GAAP and, the payment of which is neither delinquent nor subject to penalties. Any real property and facilities held under lease by the Company and the Material Subsidiaries are held by them under valid, subsisting and enforceable leases with which the Company and the Material Subsidiaries are in compliance, except as would not have or reasonably be expected to result in a Material Adverse Effect.

(n) Intellectual Property. To the knowledge of the Company, the Company and the Material Subsidiaries have, or have rights to use, all patents, patent applications, trademarks, trademark applications, service marks, trade names, trade secrets, inventions, copyrights, licenses and other intellectual property rights and similar rights as described in the SEC Reports as necessary or required for use in connection with their respective businesses and which the failure to so have would reasonably be expected to have a Material Adverse Effect (collectively, the “**Intellectual Property Rights**”). Except as disclosed on Schedule 3.1(n) of the Disclosure Schedule, none of, and neither the Company nor any Material Subsidiary has received a written notice that any of the Intellectual Property Rights has expired, terminated or been abandoned, or is expected to expire or terminate or be abandoned, within two years from the date of this Agreement. Neither the Company nor any Material Subsidiary has received, since the date of the latest audited financial statements included within the SEC Reports, a written notice of a claim or otherwise has any knowledge that the Intellectual Property Rights violate or infringe upon the rights of any Person, except as would not have or reasonably be expected to have a Material Adverse Effect. To the knowledge of the Company, all such Intellectual Property Rights are enforceable and there is no existing infringement by another Person of any of Intellectual Property Rights. The Company and its Material Subsidiaries have taken reasonable security measures to protect the secrecy, confidentiality and value of all of their Intellectual Property Rights, except where failure to do so would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(o) Insurance. The Company and the Material Subsidiaries are insured by insurers of recognized financial responsibility against such losses and risks and in such amounts as are prudent and customary in the businesses in which the Company and the Material Subsidiaries are engaged, including, but not limited to, directors and officers insurance coverage in an amount of at least \$10,000,000, and there are no pending or threatened claims against such directors’ and officers’ insurance coverage. Neither the Company nor any Material Subsidiary 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 without a significant increase in cost.

(p) Certain Fees. Except as set forth on Schedule 3.1(p) of the Disclosure Schedule, no brokerage or finder’s fees or commissions are or will be payable by the Company or any Subsidiaries to any broker, financial advisor or consultant, finder, placement agent, investment banker, bank or other Person with respect to the transactions contemplated by the Transaction Documents (other than the Placement Agent). The Buyers shall have no obligation with respect to any claims made by or on behalf of other Persons for fees payable by the Company or any Subsidiary of a type contemplated in this Section that may be due in connection with the transactions contemplated by the Transaction Documents.

(q) Compliance with Healthcare Laws. The Company and, to the Company's knowledge, its directors, employees and agents (while acting in such capacity) are and at all times have been in material compliance with, all health care laws applicable to the Company, or any of its products or activities, including, but not limited to, the federal Anti-Kickback Statute (42 U.S.C. Section 1320a 7b(b)), the Anti-Inducement Law (42 U.S.C. Section 1320a 7a(a)(5)), the civil False Claims Act (31 U.S.C. Section 3729 et seq.), the administrative False Claims Law (42 U.S.C. Section 1320a 7b(a)), the Stark law (42 U.S.C. Section 1395nn), the Health Insurance Portability and Accountability Act of 1996 (42 U.S.C. Section 1320d et seq.) as amended by the Health Information Technology for Economic and Clinical Health Act (42 U.S.C. Section 17921 et seq.), the exclusion laws (42 U.S.C. Section 1320a 7), the Federal Food, Drug, and Cosmetic Act (21 U.S.C. Section 301 et seq.), the Controlled Substances Act (21 U.S.C. Section 801 et seq.), the Public Health Service Act (42 U.S.C. Section 201 et seq.), the Clinical Laboratory Improvement Amendments of 1988 (42 U.S.C. Section 263a), Medicare (Title XVIII of the Social Security Act), Medicaid (Title XIX of the Social Security Act), and the Patient Protection and Affordable Care Act of 2010, as amended by the Health Care and Education Reconciliation Act of 2010, the regulations promulgated pursuant to such laws, and any other state, federal or foreign law, accreditation standards, regulation, memorandum, opinion letter, or other issuance which imposes requirements on manufacturing, development, testing, labeling, advertising, marketing, promotion, distribution, reporting, kickbacks, patient or program charges, recordkeeping, claims process, documentation requirements, medical necessity, referrals, the hiring of employees or acquisition of services or supplies from those who have been excluded from government health care programs, quality, safety, privacy, security, licensure, accreditation or any other aspect of providing health care, clinical laboratory or diagnostics products or services (collectively, "**Health Care Laws**"). The Company has not received any notification, correspondence or any other written or oral communication, including notification of any pending or threatened claim, suit, proceeding, hearing, enforcement, investigation, arbitration or other action from any governmental authority, including, without limitation, the U.S. Food and Drug Administration, the European Medicines Agency, the Australian Department of Health Therapeutic Goods Administration, Health Canada, the U.S. Federal Trade Commission, the U.S. Drug Enforcement Administration, U.S. Centers for Medicare & Medicaid Services, U.S. Department of Health and Human Services' Office of Inspector General, the U.S. Department of Justice and state Attorneys General or similar agencies of potential or actual non-compliance by, or liability of, the Company under any Health Care Laws, except, with respect to any of the foregoing, such as would not, individually or in the aggregate, result in a Material Adverse Change. To the Company's knowledge, there are no facts or circumstances that would reasonably be expected to give rise to material liability of the Company under any Health Care Laws. The statements with respect to Health Care Laws and the Company's compliance therewith included in the Company's Annual Report on Form 10-K filed with the Commission on March 5, 2024, fairly summarize the matters therein described.

(r) Disclosure. Except with respect to the material terms and conditions of the transactions contemplated by the Transaction Documents, the Company confirms that neither it nor any other Person acting on its behalf has provided any of the Buyers or their agents or counsel with any information that it believes constitutes or might constitute material, non-public information. The Company understands and confirms that the Buyers will rely on the foregoing representation in effecting transactions in securities of the Company. All of the disclosure furnished by or on behalf of the Company to the Buyers regarding the Company and its Subsidiaries, their respective businesses and the transactions contemplated hereby, including the Disclosure Schedules, is true and correct in all material respects and does not contain any untrue statement of a material fact or omit to state any material fact necessary in order to make the statements made therein, in light of the circumstances under which they were made, not materially misleading. The press releases disseminated by the Company since January 1, 2023, taken as a whole with the SEC Reports, do not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made and when made, not materially misleading. The Company acknowledges and agrees that no Buyer makes or has made any representations or warranties with respect to the transactions contemplated hereby other than those specifically set forth in Section 3.2.

(s) Solvency; Seniority. Based on the consolidated financial condition of the Company as of the Closing Date, after giving effect to the receipt by the Company of the proceeds from the sale of the Securities hereunder: (i) the fair saleable value of the Company's tangible assets exceeds the amount that will be required to be paid on or in respect of the Company's existing debts and other liabilities (including known contingent liabilities) as they mature, (ii) the Company's assets do not constitute unreasonably small capital to carry on its business as now conducted and as proposed to be conducted including its capital needs taking into account the particular capital requirements of the business conducted by the Company, consolidated and projected capital requirements and capital availability thereof, and (iii) the current cash flow of the Company, together with the proceeds the Company would receive, were it to liquidate all of its assets, after taking into account all anticipated uses of the cash, would be sufficient to pay all amounts on or in respect of its liabilities when such amounts are required to be paid. The Company does not intend to incur debts beyond its ability to pay such debts as they mature (taking into account the timing and amounts of cash to be payable on or in respect of its debt). Except as set forth on Schedule 3.1(s) of the Disclosure Schedule, the Company has no knowledge of any facts or circumstances which lead it to believe that it will file for administration, judicial management, reorganization or liquidation under the bankruptcy or reorganization laws of any jurisdiction within one year from the Closing Date. Schedule 3.1(s) of the Disclosure Schedule sets forth as of the date hereof all outstanding secured and unsecured Indebtedness of the Company or any Subsidiary, or for which the Company or any Subsidiary has commitments. As of the Closing Date, (1) no Indebtedness or other claim against the Company is senior to the Debentures in right of payment, whether with respect to interest or upon liquidation or dissolution, or otherwise, and (2) no Indebtedness or other claim against any Subsidiary is senior to such Subsidiary's obligations under the Subsidiary Guarantee in right of payment, whether with respect to interest or upon liquidation or dissolution, or otherwise.

(t) Tax Status. Except for matters that would not, individually or in the aggregate, have or reasonably be expected to result in a Material Adverse Effect, the Company and its Subsidiaries each (i) has made or filed all United States federal, state and local income and all foreign income and franchise tax returns, reports and declarations required by any jurisdiction to which it is subject, (ii) has paid all taxes and other governmental assessments and charges that are material in amount, shown or determined to be due on such returns, reports and declarations, and (iii) has set aside on its books provision reasonably adequate for the payment of all material taxes for periods subsequent to the periods to which such returns, reports or declarations apply. There are no unpaid taxes in any material amount claimed to be due by the taxing authority of any jurisdiction, and the officers of the Company or of any Subsidiary know of no basis for any such claim. The Company is not and has never been a United States real property holding corporation within the meaning of Section 897 of the Code and the Company shall so certify upon Buyer's reasonable request at any time. The net operating loss carryforwards ("**NOLs**") for United States federal income tax purposes of the consolidated group of which the Company is the common parent, if any, shall not be adversely effected by the transactions contemplated hereby, and the transactions contemplated hereby do not constitute an "ownership change" within the meaning of Section 382 of the Code, thereby preserving the Company's ability to utilize such NOLs.

(u) Acknowledgment Regarding Buyers' Purchase of Securities. The Company acknowledges and agrees that each of the Buyers is acting solely in the capacity of an arm's length purchaser with respect to the Transaction Documents and the transactions contemplated thereby. The Company further acknowledges that no Buyer is acting as a financial advisor or fiduciary of the Company (or in any similar capacity) with respect to the Transaction Documents and the transactions contemplated thereby and any advice given by any Buyer or any of their respective representatives or agents in connection with the Transaction Documents and the transactions contemplated thereby is merely incidental to the Buyers' purchase of the Securities. The Company further represents to each Buyer that the Company's decision to enter into this Agreement and the other Transaction Documents has been based solely on the independent evaluation of the transactions contemplated hereby by the Company and its representatives.

(v) Acknowledgment Regarding Buyer's Trading Activity. It is understood and acknowledged by the Company that, except as expressly set forth in Section 4.7, (i) following the public disclosure of the transactions contemplated by the Transaction Documents, in accordance with the terms thereof, none of the Buyers have been asked by the Company or any of its Subsidiaries to agree, nor has any Buyer agreed with the Company or any of its Subsidiaries, to desist from effecting any transactions in or with respect to (including, without limitation, purchasing or selling, long and/or short) any securities of the Company, or "derivative" securities based on securities issued by the Company or to hold any of the Securities for any specified term; (ii) any Buyer, and counterparties in "derivative" transactions to which any such Buyer is a party, directly or indirectly, presently may have a "short" position in the Common Stock which was established prior to such Buyer's knowledge of the transactions contemplated by the Transaction Documents; (iii) each Buyer shall not be deemed to have any affiliation with or control over any arm's length counterparty in any "derivative" transaction; and (iv) each Buyer may rely on the Company's obligation to timely deliver Common Stock upon conversion, exercise or exchange, as applicable, of the Securities as and when required pursuant to the Transaction Documents for purposes of effecting trading in the Common Stock of the Company. The Company further understands and acknowledges that following the public disclosure of the transactions contemplated by the Transaction Documents pursuant to the Press Release (x) one or more Buyers may engage in hedging and/or trading activities at various times during the period that the Securities are outstanding, including, without limitation, during the periods that the value of the Conversion Shares deliverable with respect to the Debentures are being determined and (y) such hedging and/or trading activities, if any, can reduce the value of the existing shareholders' equity interest in the Company at and after the time the hedging and/or trading activities are being conducted. The Company acknowledges that such aforementioned hedging and/or trading activities do not constitute a breach of this Agreement or any of the Transaction Documents.

(w) Office of Foreign Assets Control; Money Laundering. Neither the Company nor any Subsidiary nor, to the Company's knowledge, any director, officer, agent, employee or affiliate of the Company or any Subsidiary, is currently subject to any United States sanctions administered by the Office of Foreign Assets Control of the United States Treasury Department ("OFAC") or the equivalent law of any foreign jurisdiction. The operations of the Company and its Subsidiaries are and have been conducted at all times in compliance with applicable financial record-keeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1977, as amended, applicable money laundering statutes and applicable rules and regulations thereunder or the equivalent law of any foreign jurisdiction (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 Subsidiary with respect to the Money Laundering Laws is pending or, to the knowledge of the Company or any Subsidiary, threatened.

(x) Sarbanes-Oxley: Internal Accounting Controls. Except as set forth in the SEC Reports, the Company and the Subsidiaries are in compliance in all material respects with any applicable requirements of the Sarbanes-Oxley Act of 2002 that are effective as of the date hereof, and any and all applicable rules and regulations promulgated by the Commission thereunder that are effective as of the date hereof and as of the Closing Date. Except as set forth in the SEC Reports, the Company and the Subsidiaries maintain a system of internal accounting controls sufficient to provide reasonable assurance 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 conformity with GAAP 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. The Company and the Subsidiaries have established disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the Company and the Subsidiaries and designed such disclosure controls and procedures to ensure that information required to be disclosed by the Company in the reports it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the Commission's rules and forms. The Company's certifying officers have evaluated the effectiveness of the disclosure controls and procedures of the Company and the Subsidiaries as of the end of the period covered by the most recently filed periodic report under the Exchange Act (such date, the "**Evaluation Date**"). The Company presented in its most recently filed periodic report under the Exchange Act the conclusions of the certifying officers about the effectiveness of the disclosure controls and procedures based on their evaluations as of the Evaluation Date. Since the Evaluation Date, except as set forth in the SEC Reports, there have been no changes in the internal control over financial reporting (as such term is defined in the Exchange Act) that have materially affected, or are reasonably likely to materially affect, the internal control over financial reporting of the Company and its Subsidiaries.

(y) Listing and Maintenance Requirements. The Common Stock are registered pursuant to Section 12(b) or 12(g) of the Exchange Act, and the Company has taken no action designed to, or which to its knowledge is likely to have the effect of, terminating the registration of the Common Stock under the Exchange Act nor has the Company received any notification that the Commission is contemplating terminating such registration. The Company has not, in the twelve (12) months preceding the date hereof, received notice from the Principal Market to the effect that the Company is not in compliance with the listing or maintenance requirements of the Principal Market, except as disclosed on Schedule 3.1(y) of the Disclosure Schedule. The Company is, and has no reason to believe that it will not in the foreseeable future continue to be, in compliance with all such listing and maintenance requirements. The Common Stock are currently eligible for electronic transfer through the Depository Trust Company and the Company is current in payment of the fees to the Depository Trust Company in connection with such electronic transfer.

(z) Cybersecurity. (i)(x) There has been no security breach or other compromise of or relating to any of the Company's or any Subsidiary's information technology and computer systems, networks, hardware, software, data (including the data of its respective customers, employees, suppliers, vendors and any third party data maintained by or on behalf of it), equipment or technology (collectively, "**IT Systems and Data**") and (y) the Company and the Subsidiaries have not been notified of, and has no knowledge of any event or condition that would reasonably be expected to result in, any security breach or other compromise to its IT Systems and Data; (ii) the Company and the Subsidiaries are presently in compliance with all applicable laws or statutes and all judgments, orders, rules and regulations of any court or arbitrator or governmental or regulatory authority, internal policies and contractual obligations relating to the privacy and security of IT Systems and Data and to the protection of such IT Systems and Data from unauthorized use, access, misappropriation or modification, except as would not, individually or in the aggregate, have a Material Adverse Effect; (iii) the Company and the Subsidiaries have implemented and maintained commercially reasonable safeguards to maintain and protect its material confidential information and the integrity, continuous operation, redundancy and security of all IT Systems and Data; and (iv) the Company and the Subsidiaries have implemented backup and disaster recovery technology consistent with industry standards and practices.

(aa) Investment Company. The Company is not, and is not an Affiliate of, and immediately after receipt of payment for the Securities, will not be or be an Affiliate of, an "investment company" within the meaning of the Investment Company Act of 1940, as amended. The Company shall conduct its business in a manner so that it will not become an "investment company" subject to registration under the Investment Company Act of 1940, as amended.

(bb) No Disagreements with Accountants and Lawyers. There are no disagreements of any kind presently existing, or reasonably anticipated by the Company to arise, between the Company and the accountants and lawyers formerly or presently employed by the Company and the Company is current with respect to any fees owed to its accountants and lawyers which could affect the Company's ability to perform any of its obligations under any of the Transaction Documents.

(cc) No-Off Balance Sheet Arrangements. There are no off-balance sheet transactions, arrangements, obligations (including contingent obligations) or liabilities of the Company or any Subsidiary.

(dd) No Manipulation of Price. Neither the Company, its Subsidiaries, nor, to the Company's knowledge, any of its or its Subsidiaries' employees, directors or shareholders, has taken or will take, directly or indirectly, any action designed to or that has constituted or that might reasonably be expected to cause or result in, under the Exchange Act, or otherwise, stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of any security of the Company.

(ee) Certain Matters related to Management. No member of the Company's management (a) has had a petition under the federal bankruptcy laws or any state insolvency laws filed by or against them, or has had a receiver, fiscal agent or similar officer appointed by a court for the business or property of (i) them, (ii) any partnership in which they were a general partner at, or within two years before, the time of such filing or (iii) any company or business association of which they were an executive officer at, or within two years before, the time of such filing; (b) been convicted in a criminal proceeding or named the subject of a pending criminal proceeding, excluding traffic violations and driving a vehicle under the influence of alcohol or drugs offenses; (c) been the subject of any order, judgment or decree, not subsequently reversed, suspended or vacated, of any court, permanently or temporarily enjoining or limiting them from any activity in connection with the purchase or sale of any security or commodity; (d) been found by a court in a civil action or by the Commission to have violated any federal or state securities law, and the judgment in such civil action or finding by the Commission has not been subsequently reversed, suspended or vacated; or (e) been found by a court in a civil action or by the CFTC to have violated any federal commodities law, and the judgment in such civil action or finding by the CFTC has not been subsequently reversed, suspended or vacated.

(ff) ERISA. All of the Company's stock incentive plans is in compliance in all material respects with the applicable provisions of ERISA, the Code and other applicable federal or state laws.

(gg) Registration Rights. No Person has any right to cause the Company or any Subsidiary to effect the registration under the Securities Act of any securities of the Company or any Subsidiary.

(hh) No Integrated Offering. Assuming the accuracy of the Buyer's representations and warranties set forth in Section 3.2, neither the Company, nor any of its Affiliates, nor any Person acting on its or their behalf has, directly or indirectly, made any offers or sales of any security or solicited any offers to buy any security, under circumstances that would cause this offering of the Securities to be integrated with prior offerings by the Company for purposes of (i) the Securities Act which would require the registration of the Securities under the Securities Act, or (ii) any applicable shareholder approval provisions of any Trading Market on which any of the securities of the Company are listed or designated.

(ii) Private Placement. Assuming the accuracy of the Buyer's representations and warranties set forth in Section 3.2, no registration under the Securities Act is required for the offer and sale of the Securities by the Company to the Buyers as contemplated hereby.

(jj) No General Solicitation. Neither the Company nor any Person acting on behalf of the Company has offered or sold any of the Securities by any form of general solicitation or general advertising. The Company has offered the Securities for sale only to the Buyers and certain other "accredited investors" within the meaning of Rule 501 under the Securities Act.

(kk) No Disqualification Events. With respect to the Securities to be offered and sold hereunder in reliance on Rule 506 under the Securities Act, none of the Company, any of its predecessors, any affiliated issuer, any director, executive officer, other officer of the Company participating in the offering hereunder, any beneficial owner of 20% or more of the Company's outstanding voting equity securities, calculated on the basis of voting power, nor any promoter (as that term is defined in Rule 405 under the Securities Act) connected with the Company in any capacity at the time of sale (each, an "Issuer Covered Person") is subject to any of the "Bad Actor" disqualifications described in Rule 506(d)(1)(i) to (viii) under the Securities Act (a "Disqualification Event"), except for a Disqualification Event covered by Rule 506(d)(2) or (d)(3). The Company has exercised reasonable care to determine whether any Issuer Covered Person is subject to a Disqualification Event. The Company has complied, to the extent applicable, with its disclosure obligations under Rule 506(e), and has furnished to the Buyers a copy of any disclosures provided thereunder.

(ll) Other Covered Persons. Other than the Placement Agent, the Company is not aware of any person (other than any Issuer Covered Person) that has been or will be paid (directly or indirectly) remuneration for solicitation of purchasers in connection with the sale of any Securities.

(mm) Notice of Disqualification Events. The Company will notify the Buyers and the Placement Agent in writing, prior to the Closing Date of (i) any Disqualification Event relating to any Issuer Covered Person and (ii) any event that would, with the passage of time, reasonably be expected to become a Disqualification Event relating to any Issuer Covered Person.

3.2 Representations and Warranties of the Buyers. Each Buyer, for itself and for no other Buyer, hereby represents and warrants to the Company and the Placement Agent as of the date hereof and as of the Closing Date to the Company as follows (except to the extent expressly made as of a specific date therein, in which case they shall be accurate as of such date):

(a) Organization; Authority. Such Buyer is an entity duly incorporated or formed, validly existing and in good standing under the laws of the jurisdiction of its incorporation or formation with full right, corporate, partnership, limited liability company or similar power and authority to enter into and to consummate the transactions contemplated by the Transaction Documents and otherwise to carry out its obligations hereunder and thereunder. The execution and delivery of the Transaction Documents and performance by such Buyer of the transactions contemplated by the Transaction Documents have been duly authorized by all necessary corporate, partnership, limited liability company or similar action, as applicable, on the part of such Buyer. Each Transaction Document to which it is a party has been duly executed by such Buyer, and when delivered by such Buyer in accordance with the terms hereof, will constitute the valid and legally binding obligation of such Buyer, enforceable against it in accordance with its terms, except: (i) as limited by general equitable principles and applicable bankruptcy, insolvency, reorganization, moratorium, administration, judicial management and other laws of general application affecting enforcement of creditors' rights generally, (ii) as limited by laws relating to the availability of specific performance, injunctive relief or other equitable remedies, and (iii) insofar as indemnification and contribution provisions may be limited by applicable law.

(b) Own Account. Such Buyer understands that the Securities are "restricted securities" and have not been registered under the Securities Act or any applicable state securities law and is acquiring the Securities as principal for its own account and not with a view to or for distributing or reselling such Securities or any part thereof in violation of the Securities Act or any applicable state securities law, has no present intention of distributing any of such Securities in violation of the Securities Act or any applicable state securities law and has no direct or indirect arrangement or understandings with any other persons to distribute or regarding the distribution of such Securities in violation of the Securities Act or any applicable state securities law (this representation and warranty not limiting such Buyer's right to sell the Securities pursuant to the Resale Registration Statement or otherwise in compliance with applicable federal and state securities laws).

(c) Buyer Status. At the time such Buyer was offered the Securities, it was, and as of the date hereof it is, and on each date on which it converts any Debentures it will be an “accredited investor” as defined in Rule 501(a)(1), (a)(2), (a)(3), (a)(7), (a)(8), (a)(9), (a)(12), or (a)(13) under the Securities Act.

(d) General Solicitation. Such Buyer is not, to such Buyer’s knowledge, purchasing the Securities as a result of any advertisement, article, notice or other communication regarding the Securities published in any newspaper, magazine or similar media or broadcast over television or radio or presented at any seminar or, to the knowledge of such Buyer, any other general solicitation or general advertisement.

(e) Certain Transactions and Confidentiality. Other than consummating the transactions contemplated hereunder, such Buyer has not, nor has any Person acting on behalf of or pursuant to any understanding with such Buyer, directly or indirectly executed any purchases or sales, including short sales (within the meaning of Regulation SHO), of the securities of the Company during the period commencing as of the time that such Buyer first received a term sheet (written or oral) from the Company or any other Person representing the Company setting forth the material terms of the transactions contemplated hereunder and ending immediately prior to the execution hereof. Notwithstanding the foregoing, in the case of a Buyer that is a multi-managed investment vehicle whereby separate portfolio managers manage separate portions of such Buyer’s assets and the portfolio managers have no direct knowledge of the investment decisions made by the portfolio managers managing other portions of such Buyer’s assets, the representation set forth above shall only apply with respect to the portion of assets managed by the portfolio manager that made the investment decision to purchase the Securities covered by this Agreement. Other than to other Persons party to this Agreement or to such Buyer’s representatives, including, without limitation, its officers, directors, partners, legal and other advisors, employees, agents and Affiliates, such Buyer has maintained the confidentiality of all disclosures made to it in connection with this transaction (including the existence and terms of this transaction). Notwithstanding the foregoing, for the avoidance of doubt, nothing contained herein shall constitute a representation or warranty against, or a prohibition of, any actions with respect to the borrowing of, arrangement to borrow, identification of the availability of, and/or securing of, securities of the Company in order for such Buyer (or its broker or other financial representative) to effect short sales or similar transactions in the future.

(f) Access to Information. Buyer acknowledges and agrees that neither the Placement Agent nor any Affiliate of the Placement Agent has provided such Buyer with any information or advice with respect to the Securities nor is such information or advice necessary or desired. Neither the Placement Agent nor any Affiliate of the Placement Agent has made or makes any representation as to the Company or the quality of the Securities and the Placement Agent and any Affiliate of the Placement Agent may have acquired non-public information with respect to the Company which such Buyer agrees need not be provided to it. In connection with the issuance of the Securities to such Buyer, neither the Placement Agent nor any of its Affiliates has acted as a financial advisor or fiduciary to such Buyer.

The Company acknowledges and agrees that the representations contained in Section 3.2 shall not modify, amend or affect such Buyer's right to rely on the Company's representations and warranties contained in this Agreement or any representations and warranties contained in any other Transaction Document or any other document or instrument executed and/or delivered in connection with this Agreement or the consummation of the transaction contemplated hereby. The Buyers acknowledge and agree that neither the Company nor any Subsidiary makes or has made any representations or warranties with respect to the transactions contemplated hereby other than such representations and warranties.

**ARTICLE IV.
OTHER AGREEMENTS OF THE PARTIES**

4.1 Legends.

(a) Intentionally Omitted.

(b) The Securities may only be disposed of in compliance with state and federal securities laws. In connection with any transfer of the Securities other than pursuant to an effective registration statement or Rule 144, to the Company or to an Affiliate of a Buyer or in connection with a pledge as contemplated in Section 4.1(c), the Company may require the transferor thereof to provide to the Company an opinion of counsel selected by the transferor and reasonably acceptable to the Company, the form and substance of which opinion shall be reasonably satisfactory to the Company, to the effect that such transfer does not require registration of such transferred Securities under the Securities Act. As a condition of transfer, any such transferee shall agree in writing to be bound by the terms of this Agreement and the Registration Rights Agreement and shall have the rights and obligations of a Buyer under this Agreement and the Registration Rights Agreement.

(c) The Buyers agree to the imprinting, so long as is required by this Section 4.1, of a legend on any of the Securities in the following form:

NEITHER THIS SECURITY NOR THE SECURITIES INTO WHICH THIS SECURITY IS CONVERTIBLE HAS BEEN REGISTERED WITH THE SECURITIES AND EXCHANGE COMMISSION OR THE SECURITIES COMMISSION OF ANY STATE IN RELIANCE UPON AN EXEMPTION FROM REGISTRATION UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "SECURITIES ACT"), AND, ACCORDINGLY, MAY NOT BE OFFERED OR SOLD EXCEPT PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT UNDER THE SECURITIES ACT OR PURSUANT TO AN AVAILABLE EXEMPTION FROM, OR IN A TRANSACTION NOT SUBJECT TO, THE REGISTRATION REQUIREMENTS OF THE SECURITIES ACT AND IN ACCORDANCE WITH APPLICABLE STATE SECURITIES LAWS. THIS SECURITY AND THE SECURITIES ISSUABLE UPON CONVERSION OF THIS SECURITY MAY BE PLEDGED IN CONNECTION WITH A BONA FIDE MARGIN ACCOUNT WITH A REGISTERED BROKER-DEALER OR OTHER LOAN WITH A FINANCIAL INSTITUTION THAT IS AN "ACCREDITED INVESTOR" AS DEFINED IN RULE 501(a) UNDER THE SECURITIES ACT OR OTHER LOAN SECURED BY SUCH SECURITIES.

The Company acknowledges and agrees that a Buyer may from time to time pledge pursuant to a bona fide margin agreement with a registered broker-dealer or grant a security interest in some or all of the Securities to a financial institution that is an “accredited investor” as defined in Rule 501(a) under the Securities Act and, if required under the terms of such arrangement, such Buyer may transfer pledged or secured Securities to the pledgees or secured parties. Such a pledge or transfer would not be subject to approval of the Company and no legal opinion of legal counsel of the pledgee, secured party or pledgor shall be required in connection therewith. Further, no notice shall be required of such pledge. At the appropriate Buyer’s expense, the Company will execute and deliver such reasonable documentation as a pledgee or secured party of Securities may reasonably request in connection with a pledge or transfer of the Securities, including, if the Securities are subject to registration pursuant to the Registration Rights Agreement, the preparation and filing of any required prospectus supplement under Rule 424(b)(3) under the Securities Act or other applicable provision of the Securities Act to appropriately amend the list of Selling Stockholders (as defined in the Registration Rights Agreement) thereunder.

(d) Certificates evidencing the Securities shall not contain any legend (including the legend set forth in Section 4.1(c) hereof): (i) while a registration statement (including the Resale Registration Statement) covering the resale of such security is effective under the Securities Act, (ii) following any sale of such Securities pursuant to Rule 144, (iii) if such Securities are eligible for sale under Rule 144 or (iv) if such legend is not required under applicable requirements of the Securities Act (including judicial interpretations and pronouncements issued by the staff of the Commission). Provided one or more of the preceding conditions are met, the Company shall cause its counsel to issue a legal opinion to the Transfer Agent or the Buyer promptly after the Effective Date if required by the Transfer Agent to effect the removal of the legend hereunder, or if requested by a Buyer, respectively. If all or any portion of a Debenture is converted when there is an effective registration statement to cover the resale of the Securities (including the Resale Registration Statement), or if such Securities may be sold under Rule 144 without the requirement for the Company to be in compliance with the current public information required under Rule 144 and without volume or manner-of-sale restrictions, or if such legend is not otherwise required under applicable requirements of the Securities Act (including judicial interpretations and pronouncements issued by the staff of the Commission) then such Securities shall be issued free of all legends. The Company agrees that following the Effective Date or at such time as such legend is no longer required under this Section 4.1(d), it will, no later than the earlier of (i) two (2) Trading Days and (ii) the number of Trading Days comprising the Standard Settlement Period (as defined below) following the delivery by a Buyer to the Company or the Transfer Agent of a certificate representing Securities, as applicable, issued with a restrictive legend (such date, the “**Legend Removal Date**”), deliver or cause to be delivered to such Buyer a certificate representing such shares that is free from all restrictive and other legends. The Company may not make any notation on its records or give instructions to the Transfer Agent that enlarge the restrictions on transfer set forth in this Section 4. Certificates for Securities subject to legend removal hereunder shall be transmitted by the Transfer Agent to the Buyer by crediting the account of the Buyer’s prime broker with the Depository Trust Company System as directed by such Buyer. As used herein, “**Standard Settlement Period**” means the standard settlement period, expressed in a number of Trading Days, on the Company’s primary Trading Market with respect to the Common Stock as in effect on the date of delivery of a certificate representing Securities, as applicable, issued with a restrictive legend.

(e) In addition to such Buyer's other available remedies, the Company shall pay to a Buyer, in cash, if the Company fails to (a) issue and deliver (or cause to be delivered) to a Buyer by the Legend Removal Date a certificate representing the Securities so delivered to the Company by such Buyer that is free from all restrictive and other legends and (b) if after the Legend Removal Date such Buyer purchases (in an open market transaction or otherwise) shares of Common Stock to deliver in satisfaction of a sale by such Buyer of all or any portion of the number of shares of Common Stock, or a sale of a number of shares of Common Stock equal to all or any portion of the number of shares of Common Stock that such Buyer anticipated receiving from the Company without any restrictive legend, then, an amount equal to the excess of such Buyer's total purchase price (including brokerage commissions and other out-of-pocket expenses, if any) for the shares of Common Stock so purchased (including brokerage commissions and other out-of-pocket expenses, if any) (the "**Buy-In Price**") over the product of (A) such number of Securities (or in the case of the Debentures the number of shares of Common Stock issuable upon conversion thereof) that the Company was required to deliver to such Buyer by the Legend Removal Date multiplied by (B) the lowest closing sale price of the Common Stock on any Trading Day during the period commencing on the date of the delivery by such Buyer to the Company of the applicable Securities (as the case may be) and ending on the date of such delivery and payment under this clause (ii).

(f) Each Buyer, severally and not jointly with the other Buyers, agrees with the Company that such Buyer will sell any Securities pursuant to either the registration requirements of the Securities Act, including any applicable prospectus delivery requirements, or an exemption therefrom, and that if Securities are sold pursuant to a Resale Registration Statement, they will be sold in compliance with the plan of distribution set forth therein, and acknowledges that the removal of the restrictive legend from certificates representing Securities as set forth in this Section 4.1 is predicated upon the Company's reliance upon this understanding.

4.2 Reservation of Shares. So long as any Debentures remain outstanding, the Company shall at all times reserve at least the Required Reserve Amount (as defined in the Debentures).

4.3 Integration. The Company shall not sell, offer for sale or solicit offers to buy or otherwise negotiate in respect of any security (as defined in Section 2 of the Securities Act) that would be integrated with the offer or sale of the Securities in a manner that would require the registration under the Securities Act of the sale of the Securities or that would be integrated with the offer or sale of the Securities for purposes of the rules and regulations of any Trading Market such that it would require shareholder approval prior to the closing of such other transaction unless shareholder approval is obtained before the closing of such subsequent transaction.

4.4 Acknowledgment of Dilution. The Company acknowledges that the issuance of the Securities may result in dilution of the outstanding Common Stock, which dilution may be substantial under certain market conditions. The Company further acknowledges that its obligations under the Transaction Documents, including, without limitation, its obligation to issue the Shares and the Conversion Shares pursuant to the Transaction Documents, are unconditional and absolute and not subject to any right of set off, counterclaim, delay or reduction, regardless of the effect of any such dilution or any claim the Company may have against any Buyer and regardless of the dilutive effect that such issuance may have on the ownership of the other shareholders of the Company.

4.5 Redemption and Conversion Procedures. The form of Notice of Conversion included in the Debentures sets forth the totality of the procedures required of the Buyers in order to convert or redeem the Debentures. Without limiting the preceding sentences, no ink-original Notice of Conversion shall be required, nor shall any medallion guarantee (or other type of guarantee or notarization) of any such notice be required in order to convert the Debentures. No additional legal opinion, other information or instructions shall be required of the Buyers to convert their Debentures. The Company shall honor conversions of the Debentures and shall deliver Conversion Shares in accordance with its terms, conditions and time periods set forth therein.

4.6 Securities Laws Disclosure; Publicity. The Company shall by not later than 8:30 a.m. (local time in New York, New York) on May 28, 2024, (a) issue a press release, reasonably acceptable to the Buyers and the Placement Agent, disclosing the material terms of the transactions contemplated hereby (the “**Press Release**”) and (b) file a Current Report on Form 8-K, including copies of the Transaction Documents (or the forms thereof) as exhibits thereto, with the Commission. Upon the issuance of Press Release, the Company represents to the Buyers and the Placement Agent that it shall have publicly disclosed all “material, non-public information” delivered to any of the Buyers by the Company or any of its Subsidiaries, or any of their respective officers, directors, employees or agents in connection with the transactions contemplated by the Transaction Documents. The Company and the Buyers shall consult with each other and the Placement Agent in issuing any other public announcements or press releases with respect to the transactions contemplated hereby, and neither the Company nor the Buyers shall issue any such public announcement or press release nor otherwise make any such public statement or communication without the prior consent of the Company and the Placement Agent, with respect to any disclosure of the Buyers, or without the prior consent of the Required Holders and the Placement Agent, with respect to any disclosure of the Company, which consent shall not unreasonably be withheld or delayed, except if such disclosure is required by law, then the disclosing party shall, to the extent lawful and practicable (having regard to time and in the case of the Company, the Company’s continuous disclosure obligations), promptly provide the other party and the Placement Agent with prior notice of such public announcement, press release, public statement or communication.

4.7 Disclosure of Material Information; No Obligation of Confidentiality.

(a) Except with respect to the material terms and conditions of the transactions contemplated by the Transaction Documents, the Company covenants and agrees that neither it, nor any other Person acting on its behalf including any officer, director, employee or agent of the Company or the Subsidiaries, has provided prior to the date hereof or will in the future provide any Buyer or its agents or counsel with any information that the Company believes constitutes material non-public information unless prior thereto such Buyer shall have entered into a written agreement with the Company regarding the confidentiality and use of such information. The Company understands and confirms that each Buyer shall be relying on the foregoing covenant in effecting transactions in securities of the Company. In the event of a breach of the foregoing covenant by the Company, or any of its Subsidiaries, or any of its or their respective officers, directors, employees and agents, in addition to any other remedy provided herein or in the Transaction Documents, the Company shall, unless otherwise agreed by the Required Holders, publicly disclose any “material, non-public information” in a Current Report on Form 8-K filed with the Commission within one (1) Business Day following the date that it discloses such information to any Buyer or such earlier time as may be required by applicable law. Any Current Report on Form 8-K filed with the Commission by the Company pursuant to this Section 4.7(a) shall be subject to prior review and comment by the applicable Buyers. From and after the filing of any such Current Report on Form 8-K pursuant to this Section 4.7(a), no Buyer shall be deemed to be in possession of any material, nonpublic information regarding the Company existing as of the time of such filing. If the Company fails to file a Current Report on Form 8-K within the time required in this Section 4.7(a), each affected Buyer may, in its sole discretion, make a public disclosure of such information that it believes in its sole discretion constitutes material, non-public information of the Company, without Company or its personnel’s permission. Except as required by law, the Company shall not, without the prior written consent of the relevant Buyer, disclose such Buyer’s name in the Current Report on Form 8-K, or other disclosure, made pursuant to this Section 4.7(a).

(b) Except pursuant to any confidentiality agreement entered into by a Buyer as described in Section 4.7(a), no Buyer shall be deemed to have any obligation of confidentiality with respect to (i) any non-public information of the Company disclosed to such Buyer in breach of Section 4.7(a) (whether or not the Company files a Current Report on Form 8-K as provided above), (ii) the fact that any Buyer has exercised any of its rights and/or remedies under the Transaction Documents, or (iii) any information obtained by any Buyer as a result of exercising any of its rights and/or remedies under the Transaction Documents. In addition, no Buyer shall be deemed to be in breach of any duty to the Company and/or to have misappropriated any non-public information of the Company, if such Buyer engages in transactions of securities of the Company, including, without limitation, any hedging transactions, short sales or any “derivative” transactions while in possession of such non-public information.

4.8 Use of Proceeds. Except as set forth on Schedule 4.7(b) of the Disclosure Schedule, the Company shall use the net proceeds from the sale of the Securities hereunder for general corporate purposes, repayment of Indebtedness and transaction expenses and shall not use such proceeds: (a) for the redemption of any Common Stock or Common Stock Equivalents, or (b) in violation of the Foreign Corrupt Practices Act of 1970, as amended or the equivalent law of any foreign jurisdiction, as applicable, or OFAC regulations or the equivalent law of any foreign jurisdiction, as applicable.

4.9 Indemnification of Buyers. Subject to the provisions of this Section 4.9, the Company will indemnify and hold each Buyer and its directors, officers, shareholders, members, partners, employees and agents (and any other Persons with a functionally equivalent role of a Person holding such titles notwithstanding a lack of such title or any other title), each Person who controls such Buyer (within the meaning of Section 15 of the Securities Act and Section 20 of the Exchange Act), and the directors, officers, shareholders, agents, members, partners or employees (and any other Persons with a functionally equivalent role of a Person holding such titles notwithstanding a lack of such title or any other title) of such controlling persons (each, a “Buyer Party”) harmless from any and all losses, liabilities, obligations, claims, contingencies, damages, costs, awards, orders, penalties and expenses, including all judgments, amounts paid in settlements, court costs, interest and attorneys’ fees and costs of investigation that any such Buyer Party may suffer or incur as a result of or relating to (i) any breach of any of the representations, warranties, covenants or agreements made by the Company in this Agreement or in the other Transaction Documents or (ii) any action instituted against the Buyer Parties in any capacity, or any of them or their respective Affiliates, by the Company, its employees or directors, or any stockholder or creditor of the Company or any other third party who, in each case, is not an Affiliate of such Buyer Party, arising out of or relating to any of the transactions contemplated by the Transaction Documents. If any action shall be brought against any Buyer Party in respect of which indemnity may be sought pursuant to this Agreement, such Buyer Party shall promptly notify the Company in writing, and, except with respect to direct claims brought by the Company, the Company shall have the right to assume the defense thereof with counsel of its own choosing reasonably acceptable to the Buyer Party. Any Buyer Party shall have the right to employ separate counsel in any such action and participate in the defense thereof, but the fees and expenses of such counsel shall be at the expense of such Buyer Party except to the extent that (i) the employment thereof has been specifically authorized by the Company in writing, (ii) the Company has failed after a reasonable period of time to assume such defense and to employ counsel or (iii) in such action there is, in the reasonable opinion of counsel, a material conflict on any material issue between the position of the Company and the position of such Buyer Party, in which case the Company shall be responsible for the reasonable fees and expenses of no more than one such separate counsel, which shall be the case with respect to any direct claims by the Company. The Company will not be liable to any Buyer Party under this Agreement to the extent, but only to the extent that a loss, claim, damage or liability is finally judicially determined to be attributable to any Buyer Party’s breach of any of the representations, warranties, covenants or agreements made by such Buyer Party in this Agreement or in the other Transaction Documents. The indemnification required by this Section 4.9 shall be made by periodic payments of the amount thereof during the course of the investigation or defense, as and when bills are received or are incurred. The indemnity agreements contained herein shall be in addition to any cause of action or similar right of any Buyer Party against the Company or others and any liabilities the Company may be subject to pursuant to law.

4.10 Form D; Blue Sky Filings. The Company agrees to timely file a Form D with respect to the Securities as required under Regulation D and to provide a copy thereof, promptly upon request of any Buyer. The Company shall take such action as the Company shall reasonably determine is necessary in order to obtain an exemption for, or to qualify the Securities for, sale to the Buyers at the Closing under applicable securities or “Blue Sky” laws of the states of the United States and shall provide evidence of such actions promptly upon request of any Buyer.

4.11 Participation in Future Financing.

(a) From the date hereof through the earlier of (i) the Maturity Date (as defined in the Debentures) and (ii) the date on which the all amounts payable by the Company under the Debentures have been paid in full, upon any issuance by the Company or any of its Subsidiaries of any Indebtedness (a “**Subsequent Placement**”), the Buyers shall have the right to participate in up to an aggregate amount of the Subsequent Placement equal to the Participation Maximum, pro rata to each Buyer’s Subscription Amount, on the same terms, conditions and price provided for in the Subsequent Placement. For purposes hereof “**Participation Maximum**” means 100%.

(b) At least five (5) Trading Days prior to any proposed or intended Subsequent Placement, the Company shall deliver to each Buyer a written notice (each such notice, a “**Pre-Notice**”), which Pre-Notice shall not contain any information (including, without limitation, material, non-public information) other than: (A) if the proposed Offer Notice (as defined below) constitutes or contains material, non-public information, a statement asking whether the Investor is willing to accept material non-public information or (B) if the proposed Offer Notice does not constitute or contain material, non-public information, (x) a statement that the Company proposes or intends to effect a Subsequent Placement, (y) a statement that the statement in clause (x) above does not constitute material, non-public information and (z) a statement informing such Buyer that it is entitled to receive an Offer Notice (as defined below) with respect to such Subsequent Placement upon its written request. Upon the written request of a Buyer within three (3) Trading Days after the Company’s delivery to such Buyer of such Pre-Notice, and only upon a written request by such Buyer, the Company shall promptly, but no later than one (1) Trading Day after such request, deliver to such Buyer an irrevocable written notice (the “**Offer Notice**”) of any proposed or intended issuance or sale or exchange (the “**Offer**”) of the securities being offered (the “**Offered Securities**”) in a Subsequent Placement, which Offer Notice shall (A) identify and describe the Offered Securities, (B) describe the price and other terms upon which they are to be issued, sold or exchanged, and the number or amount of the Offered Securities to be issued, sold or exchanged, (C) identify the Persons (if known) to which or with which the Offered Securities are to be offered, issued, sold or exchanged and (D) offer to issue and sell to or exchange with such Buyer in accordance with the terms of the Offer such Buyer’s pro rata portion of Participation Maximum, provided that the number of Offered Securities which such Buyer shall have the right to subscribe for under this Section 4.13 shall be (x) based on such Buyer’s pro rata portion of the aggregate original principal amount of the Debentures purchased hereunder by all Buyers (the “**Basic Amount**”), and (y) with respect to each Buyer that elects to purchase its Basic Amount, any additional portion of the Offered Securities attributable to the Basic Amounts of other Buyers as such Buyer shall indicate it will purchase or acquire should the other Buyers subscribe for less than their Basic Amounts (the “**Undersubscription Amount**”), which process shall be repeated until each Buyer shall have an opportunity to subscribe for any remaining Undersubscription Amount.

(c) To accept an Offer, in whole or in part, such Buyer must deliver a written notice to the Company prior to the end of the fifth (5th) Business Day after such Buyer’s receipt of the Offer Notice (the “**Offer Period**”), setting forth the portion of such Buyer’s Basic Amount that such Buyer elects to purchase and, if such Buyer shall elect to purchase all of its Basic Amount, the Undersubscription Amount, if any, that such Buyer elects to purchase (in either case, the “**Notice of Acceptance**”). If the Basic Amounts subscribed for by all Buyers are less than the total of all of the Basic Amounts, then each Buyer who has set forth an Undersubscription Amount in its Notice of Acceptance shall be entitled to purchase, in addition to the Basic Amounts subscribed for, the Undersubscription Amount it has subscribed for; provided, however, if the Undersubscription Amounts subscribed for exceed the difference between the total of all the Basic Amounts and the Basic Amounts subscribed for (the “**Available Undersubscription Amount**”), each Buyer who has subscribed for any Undersubscription Amount shall be entitled to purchase only that portion of the Available Undersubscription Amount as the Basic Amount of such Buyer bears to the total Basic Amounts of all Buyers that have subscribed for Undersubscription Amounts, subject to rounding by the Company to the extent it deems reasonably necessary. Notwithstanding the foregoing, if the Company desires to modify or amend the terms and conditions of the Offer prior to the expiration of the Offer Period, the Company may deliver to each Buyer a new Offer Notice and the Offer Period shall expire on the fifth (5th) Business Day after such Buyer’s receipt of such new Offer Notice.

(d) The Company shall have five (5) Business Days from the expiration of the Offer Period above (A) to offer, issue, sell or exchange all or any part of such Offered Securities as to which a Notice of Acceptance has not been given by a Buyer (the “**Refused Securities**”) pursuant to a definitive agreement(s) (the “**Subsequent Placement Agreement**”), but only to the offerees described in the Offer Notice (if so described therein) and only upon terms and conditions (including, without limitation, unit prices and interest rates) that are not more favorable to the acquiring Person or Persons or less favorable to the Company than those set forth in the Offer Notice and (B) to publicly announce (x) the execution of such Subsequent Placement Agreement, and (y) either (I) the consummation of the transactions contemplated by such Subsequent Placement Agreement or (II) the termination of such Subsequent Placement Agreement, which shall be filed with the Commission on a Current Report on Form 8-K with such Subsequent Placement Agreement and any documents contemplated therein filed as exhibits thereto.

(e) In the event the Company shall propose to sell less than all the Refused Securities (any such sale to be in the manner and on the terms specified in Section 4.13(d) above), then each Buyer may, at its sole option and in its sole discretion, withdraw its Notice of Acceptance or reduce the number or amount of the Offered Securities specified in its Notice of Acceptance to an amount that shall be not less than the number or amount of the Offered Securities that such Buyer elected to purchase pursuant to Section 4.13(c) above multiplied by a fraction, (i) the numerator of which shall be the number or amount of Offered Securities the Company actually proposes to issue, sell or exchange (including Offered Securities to be issued or sold to Buyers pursuant to this Section 4.13 prior to such reduction) and (ii) the denominator of which shall be the original amount of the Offered Securities. In the event that any Buyer so elects to reduce the number or amount of Offered Securities specified in its Notice of Acceptance, the Company may not issue, sell or exchange more than the reduced number or amount of the Offered Securities unless and until such securities have again been offered to the Buyers in accordance with Section 4.13(b) above.

(f) Upon the closing of the issuance, sale or exchange of all or less than all of the Refused Securities, such Buyer shall acquire from the Company, and the Company shall issue to such Buyer, the number or amount of Offered Securities specified in its Notice of Acceptance, as reduced pursuant to Section 4.13(e) above if such Buyer has so elected, upon the terms and conditions specified in the Offer. The purchase by such Buyer of any Offered Securities is subject in all cases to the preparation, execution and delivery by the Company and such Buyer of a separate purchase agreement relating to such Offered Securities reasonably satisfactory in form and substance to such Buyer and its counsel.

(g) Any Offered Securities not acquired by a Buyer or other Persons in accordance with this Section 4.13 may not be issued, sold or exchanged until they are again offered to such Buyer under the procedures specified in this Agreement.

(h) The Company and each Buyer agree that if any Buyer elects to participate in the Offer, (x) neither the Subsequent Placement Agreement with respect to such Offer nor any other transaction documents related thereto (collectively, the “**Subsequent Placement Documents**”) shall include any term or provision whereby such Buyer shall be required to agree to any restrictions on trading as to any securities of the Company or be required to consent to any amendment to or termination of, or grant any waiver, release or the like under or in connection with, any agreement previously entered into with the Company or any instrument received from the Company, (y) representation and warranties of an Investor in the Subsequent Placement Documents shall not be more restrictive than those of the Buyers in this Agreement (other than such changes as necessary to comply with applicable law, rules and regulations, the manner of sale of such security in such Subsequent Placement and/or the type of such security to be sold in such Subsequent Placement) and (z) any registration rights set forth in such Subsequent Placement Documents shall be similar in all material respects to the registration rights contained in the Registration Rights Agreement.

(i) Notwithstanding anything to the contrary in this Section 4.13 and unless otherwise agreed to by such Buyer, the Company shall either confirm in writing to such Buyer that the transaction with respect to the Subsequent Placement has been abandoned or shall publicly disclose its intention to issue the Offered Securities, in either case, in such a manner such that such Buyer will not be in possession of any material, non-public information, by the fifth (5th) Business Day following delivery of the Offer Notice. If by such fifth (5th) Business Day, no public disclosure regarding a transaction with respect to the Offered Securities has been made, and no notice regarding the abandonment of such transaction has been received by such Buyer, such transaction shall be deemed to have been abandoned and such Buyer shall not be in possession of any material, non-public information with respect to the Company or any of its Subsidiaries. Should the Company decide to pursue such transaction with respect to the Offered Securities, the Company shall provide such Buyer with another Offer Notice and such Buyer will again have the right of participation set forth in this Section 4.13. The Company shall not be permitted to deliver more than one such Offer Notice to such Buyer in any sixty (60) day period, except as expressly contemplated by the last sentence of Section 4.13(c) or otherwise permitted by the Buyer.

(j) The restrictions contained in this Section 4.13 shall not apply in connection with the issuance of any Excluded Securities. The Company shall not circumvent the provisions of this Section 4.13 by providing terms or conditions to one Buyer that are not provided to all.

4.12 Variable Rate Transactions. From the date hereof and for so long as the Debentures remain outstanding, the Company shall be prohibited from effecting or entering into an agreement to effect any issuance by the Company or any of its Subsidiaries of Common Stock or Common Stock Equivalents (or a combination of units thereof) involving a Variable Rate Transaction. “**Variable Rate Transaction**” means a transaction in which the Company agrees to or enters into an agreement to (i) issue or sell any debt or equity securities that are convertible into, exchangeable or exercisable for, or include the right to receive additional shares of Common Stock either (A) at a conversion price, exercise price or exchange rate or other price that is based upon and/or varies with the trading prices of or quotations for the shares of Common Stock at any time after the initial issuance of such debt or equity securities, or (B) with a conversion, exercise or exchange price that is subject to being reset at some future date after the initial issuance of such debt or equity security or upon the occurrence of specified or contingent events directly or indirectly related to the business of the Company or the market for the Common Stock or (ii) enters into, or effects a transaction under, any agreement, including, but not limited to, an equity line of credit, whereby the Company may issue securities at a future determined price. Any Buyer shall be entitled to obtain injunctive relief against the Company to preclude any such issuance, which remedy shall be in addition to any right to collect damages. Notwithstanding the foregoing, this Section 4.12 shall not apply with respect to the Company’s Sales Agreement with Cowen and Company, LLC, pursuant to which the Company may offer and sell from time to time up to \$200.0 million of shares, existing as of the date hereof.

4.13 Collateral Agent. Each Buyer hereby (i) appoints JGB Collateral LLC, as the collateral agent hereunder and under the other Security Documents (in such capacity, the “**Collateral Agent**”), and (ii) authorizes the Collateral Agent (and its officers, directors, employees and agents) to take such action on such Buyer’s behalf in accordance with the terms hereof and thereof. The Collateral Agent shall not have, by reason hereof or of any of the other Security Documents, a fiduciary relationship in respect of any Buyer. Neither the Collateral Agent nor any of its officers, directors, employees or agents shall have any liability to any Buyer for any action taken or omitted to be taken in connection herewith or with any other Security Document except to the extent caused by its own gross negligence or willful misconduct, and each Buyer agrees to defend, protect, indemnify and hold harmless the Collateral Agent and all of its officers, directors, employees and agents (collectively, the “**Collateral Agent Indemnitees**”) from and against any losses, damages, liabilities, obligations, penalties, actions, judgments, suits, fees, costs and expenses (including, without limitation, reasonable attorneys’ fees, costs and expenses) incurred by such Collateral Agent Indemnitee, whether direct, indirect or consequential, arising from or in connection with the performance by such Collateral Agent Indemnitee of the duties and obligations of Collateral Agent pursuant hereto or any of the Security Documents. The Collateral Agent shall not be required to exercise any discretion or take any action, but shall be required to act or to refrain from acting (and shall be fully protected in so acting or refraining from acting) upon the instructions of the Required Holders, and such instructions shall be binding upon all holders of Debentures; provided, however, that the Collateral Agent shall not be required to take any action which, in the reasonable opinion of the Collateral Agent, exposes the Collateral Agent to liability or which is contrary to this Agreement or any other Transaction Document or applicable law. The Collateral Agent shall be entitled to rely upon any written notices, statements, certificates, orders or other documents or any telephone message believed by it in good faith to be genuine and correct and to have been signed, sent or made by the proper Person, and with respect to all matters pertaining to this Agreement or any of the other Transaction Documents and its duties hereunder or thereunder, upon advice of counsel selected by it.

(a) The Collateral Agent may resign from the performance of all its functions and duties hereunder and under the other Transaction Documents at any time by giving at least ten (10) Business Days’ prior written notice to the Company and each holder of Debentures. Such resignation shall take effect upon the acceptance by a successor Collateral Agent of appointment pursuant to clauses (ii) and (iii) below or as otherwise provided below. If at any time the Collateral Agent does not (together with its affiliates) beneficially own any Debentures, the Required Holders may, by written consent, remove the Collateral Agent from all its functions and duties hereunder and under the other Transaction Documents.

(b) Upon any such notice of resignation or removal, the Required Holders shall appoint a successor collateral agent. Upon the acceptance of any appointment as Collateral Agent hereunder by a successor agent, such successor collateral agent shall thereupon succeed to and become vested with all the rights, powers, privileges and duties of the collateral agent, and the Collateral Agent shall be discharged from its duties and obligations under this Agreement and the other Transaction Documents. After the Collateral Agent’s resignation or removal hereunder as the collateral agent, the provisions of this Section 4.13 shall inure to its benefit as to any actions taken or omitted to be taken by it while it was the Collateral Agent under this Agreement and the other Transaction Documents.

(c) If a successor collateral agent shall not have been so appointed within ten (10) Business Days of receipt of a written notice of resignation or removal, the Collateral Agent shall then appoint a successor collateral agent who shall serve as the Collateral Agent until such time, if any, as the Required Holders appoint a successor collateral agent as provided above.

(d) In the event that a successor Collateral Agent is appointed pursuant to the provisions of this Section 4.13 that is not a Buyer or an affiliate of any Buyer (or the Required Holders or the Collateral Agent (or its successor), as applicable, notify the Company that they or it wants to appoint such a successor Collateral Agent pursuant to the terms of this Section 4.13), the Company and each Subsidiary thereof covenants and agrees to promptly take all actions reasonably requested by the Required Holders or the Collateral Agent (or its successor), as applicable, from time to time, to secure a successor Collateral Agent satisfactory to the requesting part(y)(ies), in their sole discretion, including, without limitation, by paying all reasonable and customary fees and expenses of such successor Collateral Agent, by having the Company and each Subsidiary thereof agree to indemnify any successor Collateral Agent pursuant to reasonable and customary terms and by each of the Company and each Subsidiary thereof executing a collateral agency agreement or similar agreement and/or any amendment to the Security Documents reasonably requested or required by the successor Collateral Agent.

4.14 Furnishing of Information.

(a) Until the earlier of the time that (i) no Buyer owns Securities and (ii) the Debentures are no longer outstanding, the Company covenants to timely file (or obtain extensions in respect thereof and file within the applicable grace period) all reports required to be filed by the Company after the date hereof pursuant to the Exchange Act even if the Company is not then subject to the reporting requirements of the Exchange Act.

(b) At any time during the period commencing from the six (6) month anniversary of the date hereof and ending at such time that all of the Securities may be sold without the requirement for the Company to be in compliance with Rule 144(c)(1) and otherwise without restriction or limitation pursuant to Rule 144, if the Company (i) shall fail for any reason to satisfy the current public information requirement under Rule 144(c) or (ii) has ever been an issuer described in Rule 144 (i)(1)(i) or becomes an issuer in the future, and the Company shall fail to satisfy any condition set forth in Rule 144(i)(2) (a “**Public Information Failure**”) then, in addition to such Buyer’s other available remedies, the Company shall pay to a Buyer, in cash, as partial liquidated damages and not as a penalty, by reason of any such delay in or reduction of its ability to sell the Securities, an amount in cash equal to two percent (2.0%) of the aggregate Subscription Amount paid by such Buyer on the day of a Public Information Failure and on every thirtieth (30th) day (pro rated for periods totaling less than thirty days) thereafter until the earlier of (a) the date such Public Information Failure is cured and (b) such time that such public information is no longer required for the Buyers to transfer the Securities pursuant to Rule 144. The payments to which a Buyer shall be entitled pursuant to this Section 4.14 are referred to herein as “**Public Information Failure Payments.**” Public Information Failure Payments shall be paid on the earlier of (i) the last day of the calendar month during which such Public Information Failure Payments are incurred and (ii) the second (2nd) Business Day after the event or failure giving rise to the Public Information Failure Payments is cured. In the event the Company fails to make Public Information Failure Payments in a timely manner, such Public Information Failure Payments shall bear interest at the rate of 1.08333% per month (prorated for partial months) until paid in full. Nothing herein shall limit such Buyer’s right to pursue actual damages for the Public Information Failure, and such Buyer shall have the right to pursue all remedies available to it at law or in equity including, without limitation, a decree of specific performance and/or injunctive relief.

**ARTICLE V.
MISCELLANEOUS**

5.1 Fees and Expenses. At the Closing, the Company has agreed to reimburse the Buyers for their reasonable and documented legal fees and out-of-pocket expenses. Except as expressly set forth in the Transaction Documents to the contrary, each party shall pay the fees and expenses of its advisers, counsel, accountants and other experts, if any, and all other expenses incurred by such party incident to the negotiation, preparation, execution, delivery and performance of this Agreement. For avoidance of doubt, the Company shall be responsible for all fees due to the Placement Agent. The Company shall pay all Transfer Agent fees (including, without limitation, any fees required for same-day processing of any instruction letter delivered by the Company and any conversion or exercise notice delivered by a Buyer), stamp taxes and other taxes and duties levied in connection with the delivery of any Securities to the Buyers.

5.2 Entire Agreement. The Transaction Documents, together with the exhibits and schedules thereto, contain the entire understanding of the parties with respect to the subject matter hereof and thereof and supersede all prior agreements and understandings, oral or written, with respect to such matters, which the parties acknowledge have been merged into such documents, exhibits and schedules.

5.3 Notices. Any and all notices or other communications or deliveries required or permitted to be provided hereunder shall be in writing and shall be deemed given and effective on the earliest of: (a) the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number or email attachment as set forth on the signature pages attached hereto at or prior to 5:30 p.m. (New York City time) on a Business Day, (b) the next Business Day after the date of transmission, if such notice or communication is delivered via facsimile at the facsimile number or email attachment as set forth on the signature pages attached hereto on a day that is not a Business Day or later than 5:30 p.m. (New York City time) on any Business Day, (c) the second Business Day following the date of mailing, if sent by a nationally recognized overnight courier service, or (d) upon actual receipt by the party to whom such notice is required to be given. The address for such notices and communications shall be as set forth on the signature pages attached hereto. To the extent that any notice provided pursuant to any Transaction Document constitutes, or contains material, non-public information regarding the Company or any of the Subsidiaries, the Company shall simultaneously file such notice with the Commission pursuant to a Current Report on Form 8-K.

5.4 Amendments; Waivers. No provision of this Agreement may be waived, modified, supplemented or amended except in a written instrument signed, in the case of an amendment, by the Company and the Required Holders or, in the case of a waiver, by the party against whom enforcement of any such waived provision is sought. No waiver of any default with respect to any provision, condition or requirement of this Agreement shall be deemed to be a continuing waiver in the future or a waiver of any subsequent default or a waiver of any other provision, condition or requirement hereof, nor shall any delay or omission of any party to exercise any right hereunder in any manner impair the exercise of any such right.

5.5 Headings. The headings herein are for convenience only, do not constitute a part of this Agreement and shall not be deemed to limit or affect any of the provisions hereof.

5.6 Successors and Assigns. This Agreement shall be binding upon and inure to the benefit of the parties and their successors and permitted assigns. The Company may not assign this Agreement or any rights or obligations hereunder without the prior written consent of the Required Holders. Any Buyer may assign, with written notice to the Company of such assignment, any or all of its rights under this Agreement to any Person to whom such Buyer assigns or transfers any Securities in compliance with the Transaction Documents, provided that such transferee agrees in writing to be bound, with respect to the transferred Securities, by the provisions of the Transaction Documents that apply to the “Buyers.”

5.7 No Third Party Beneficiaries. This Agreement is intended for the benefit of the parties hereto and their respective successors and permitted assigns and is not for the benefit of, nor may any provision hereof be enforced by, any other Person, except as otherwise set forth in Section 4.8 and this Section 5.7. Notwithstanding the foregoing, the Placement Agent shall be the third party beneficiary of (i) the representations and warranties of the Company in Section 3.1, (ii) the representations and warranties of the Buyer in Section 3.2 and (iii) the representations, warranties and covenants of the Company and Buyer in Section 4.6.

5.8 Governing Law. All questions concerning the construction, validity, enforcement and interpretation of the Transaction Documents shall be governed by and construed and enforced in accordance with the internal laws of the State of New York, without regard to the principles of conflicts of law thereof. Each party agrees that all legal proceedings concerning the interpretations, enforcement and defense of the transactions contemplated by this Agreement and any other Transaction Documents (whether brought against a party hereto or its respective affiliates, directors, officers, shareholders, partners, members, employees or agents) shall be commenced exclusively in the state and federal courts sitting in the City of New York. Each party hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the City of New York, Borough of Manhattan for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein (including with respect to the enforcement of any of the Transaction Documents), and hereby irrevocably waives, and agrees not to assert in any suit, action or proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such suit, action or proceeding is improper or is an inconvenient venue for such proceeding. Each party hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Agreement and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any other manner permitted by law.

5.9 Survival. The representations and warranties contained herein shall survive the Closing and the delivery of the Securities.

5.10 Execution. This Agreement may be executed in two or more counterparts, all of which when taken together shall be considered one and the same agreement and shall become effective when counterparts have been signed by each party and delivered to each other party, it being understood that the parties need not sign the same counterpart. In the event that any signature is delivered by facsimile transmission or by e-mail delivery of a PDF format data file, such signature shall create a valid and binding obligation of the party executing (or on whose behalf such signature is executed) with the same force and effect as if such facsimile or PDF signature page were an original thereof.

5.11 Severability. If any term, provision, covenant or restriction of this Agreement is held by a court of competent jurisdiction to be invalid, illegal, void or unenforceable, the remainder of the terms, provisions, covenants and restrictions set forth herein shall remain in full force and effect and shall in no way be affected, impaired or invalidated, and the parties hereto shall use their commercially reasonable efforts to find and employ an alternative means to achieve the same or substantially the same result as that contemplated by such term, provision, covenant or restriction. It is hereby stipulated and declared to be the intention of the parties that they would have executed the remaining terms, provisions, covenants and restrictions without including any of such that may be hereafter declared invalid, illegal, void or unenforceable.

5.12 Rescission and Withdrawal Right. Notwithstanding anything to the contrary contained in (and without limiting any similar provisions of) any of the other Transaction Documents, whenever any Buyer exercises a right, election, demand or option under a Transaction Document and the Company does not timely perform its related obligations within the periods therein provided, then such Buyer may rescind or withdraw, in its discretion from time to time upon written notice to the Company, any relevant conversion, redemption or exercise notice, demand or election in whole or in part without prejudice to its future actions and rights; provided, however, that in the case of a rescission of a conversion or redemption of a Debenture, the applicable Buyer shall be required to return any Common Stock subject to any such rescinded conversion, redemption or exercise notice concurrently with the return to such Buyer of the aggregate exercise price paid to the Company for such shares and the restoration of such Buyer's right to acquire such shares pursuant to such Buyer's Debenture.

5.13 Replacement of Securities. If any certificate or instrument evidencing any Securities is mutilated, lost, stolen or destroyed, the Company shall issue or cause to be issued in exchange and substitution for and upon cancellation thereof (in the case of mutilation), or in lieu of and substitution therefor, a new certificate or instrument, but only upon receipt of evidence reasonably satisfactory to the Company of such loss, theft or destruction and receipt of a customary lost Security affidavit and indemnity.

5.14 Remedies. In addition to being entitled to exercise all rights provided herein or granted by law, including recovery of damages, each of the Buyers and the Company will be entitled to seek specific performance under the Transaction Documents. The parties agree that monetary damages may not be adequate compensation for any loss incurred by reason of any breach of obligations contained in the Transaction Documents. Notwithstanding anything to the contrary set forth in the Transaction Documents, without the prior consent of the Required Holders, no Purchaser shall commence any action against the Company or any Subsidiary to enforce any provisions of the Transaction Documents and only the Required Holders may initiate any enforcement or rights and remedies against the Company and the Subsidiaries.

5.15 Payment Set Aside; Currency. To the extent that the Company or any Guarantor makes a payment or payments to any Buyer hereunder or pursuant to any of the other Transaction Documents or any of the Buyers enforce or exercise their rights hereunder or thereunder, and such payment or payments or the proceeds of such enforcement or exercise or any part thereof are subsequently invalidated, declared to be fraudulent or preferential, set aside, recovered from, disgorged by or are required to be refunded, repaid or otherwise restored to the Company, any Guarantor, a trustee, receiver or any other Person under any law (including, without limitation, any bankruptcy law, foreign, state or federal law, common law or equitable cause of action), then to the extent of any such restoration the obligation or part thereof originally intended to be satisfied shall be revived and continued in full force and effect as if such payment had not been made or such enforcement or setoff had not occurred. Unless otherwise expressly indicated, all dollar amounts referred to in this Agreement and the other Transaction Documents are in United States Dollars (“**U.S. Dollars**”), and all amounts owing under this Agreement and all other Transaction Documents shall be paid in U.S. Dollars. All amounts denominated in other currencies (if any) shall be converted into the U.S. Dollar equivalent amount in accordance with the Exchange Rate on the date of calculation. “**Exchange Rate**” means, in relation to any amount of currency to be converted into U.S. Dollars pursuant to this Agreement, the U.S. Dollar exchange rate as published in the Wall Street Journal on the relevant date of calculation.

5.16 Usury. To the extent it may lawfully do so, the Company hereby agrees not to insist upon or plead or in any manner whatsoever claim, and will resist any and all efforts to be compelled to take the benefit or advantage of, usury laws wherever enacted, now or at any time hereafter in force, in connection with any claim, action or proceeding that may be brought by any Buyer in order to enforce any right or remedy under any Transaction Document. Notwithstanding any provision to the contrary contained in any Transaction Document, it is expressly agreed and provided that the total liability of the Company under the Transaction Documents for payments in the nature of interest shall not exceed the maximum lawful rate authorized under applicable law (the “**Maximum Rate**”), and, without limiting the foregoing, in no event shall any rate of interest or default interest, or both of them, when aggregated with any other sums in the nature of interest that the Company may be obligated to pay under the Transaction Documents exceed such Maximum Rate. It is agreed that if the maximum contract rate of interest allowed by law and applicable to the Transaction Documents is increased or decreased by statute or any official governmental action subsequent to the date hereof, the new maximum contract rate of interest allowed by law will be the Maximum Rate applicable to the Transaction Documents from the effective date thereof forward, unless such application is precluded by applicable law. If under any circumstances whatsoever, interest in excess of the Maximum Rate is paid by the Company to any Buyer with respect to indebtedness evidenced by the Transaction Documents, such excess shall be applied by such Buyer to the unpaid principal balance of any such indebtedness or be refunded to the Company, the manner of handling such excess to be at such Buyer’s election.

5.17 Independent Nature of Buyers' Obligations and Rights. The obligations of each Buyer under any Transaction Document are several and not joint with the obligations of any other Buyer, and no Buyer shall be responsible in any way for the performance or non-performance of the obligations of any other Buyer under any Transaction Document. Nothing contained herein or in any other Transaction Document, and no action taken by any Buyer pursuant hereto or thereto, shall be deemed to constitute the Buyers as a partnership, an association, a joint venture or any other kind of entity, or create a presumption that the Buyers are in any way acting in concert or as a group with respect to such obligations or the transactions contemplated by the Transaction Documents. Each Buyer shall be entitled to independently protect and enforce its rights, including, without limitation, the rights arising out of this Agreement or out of the other Transaction Documents, and it shall not be necessary for any other Buyer to be joined as an additional party in any proceeding for such purpose. The Company has elected to provide all Buyers with the same terms and Transaction Documents for the convenience of the Company and not because it was required or requested to do so by any of the Buyers.

5.18 Liquidated Damages. The Company's obligations to pay any partial liquidated damages or other amounts owing under the Transaction Documents is a continuing obligation of the Company and shall not terminate until all unpaid partial liquidated damages and other amounts have been paid notwithstanding the fact that the instrument or security pursuant to which such partial liquidated damages or other amounts are due and payable shall have been canceled.

5.19 Saturdays, Sundays, Holidays, etc. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall not be a Business Day, then such action may be taken or such right may be exercised on the next succeeding Business Day.

5.20 Construction. The parties agree that each of them and/or their respective counsel have reviewed and had an opportunity to revise the Transaction Documents and, therefore, the normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of the Transaction Documents or any amendments thereto.

5.21 **WAIVER OF JURY TRIAL, IN ANY ACTION, SUIT, OR PROCEEDING IN ANY JURISDICTION BROUGHT BY ANY PARTY AGAINST ANY OTHER PARTY, THE PARTIES EACH KNOWINGLY AND INTENTIONALLY, TO THE GREATEST EXTENT PERMITTED BY APPLICABLE LAW, HEREBY ABSOLUTELY, UNCONDITIONALLY, IRREVOCABLY AND EXPRESSLY WAIVES FOREVER TRIAL BY JURY.**

5.22 Termination. This Agreement may be terminated by any Buyer, as to such Buyer's obligations hereunder only and without any effect whatsoever on the obligations between the Company and the other Buyers, by written notice to the other parties, if the Closing has not been consummated on or before the fifth (5th) Trading Day following the date hereof, provided, however, that no such termination will affect the right of any party to sue for any breach by any other party (or parties).

[Signature Pages Follow]

IN WITNESS WHEREOF, the parties hereto have caused this Securities Purchase Agreement to be duly executed by their respective authorized signatories as of the date first indicated above.

BIONANO GENOMICS, INC.

Address for Notice:

9540 Towne Centre Drive
Suite 100
San Diego, California 92121

By: /s/ R. Erik Holmlin

E-mail: eholmlin@bionano.com

Name: R. Erik Holmlin

Title: President and Chief Executive Officer

With a copy (which shall not constitute notice) to:

ArentFox Schiff LLP
1717 K Street NW
Washington D.C. 20006
Attention: Jonathan Bagg

E-Mail: Jonathan.Bagg@afslaw.com

*[Remainder of Page Intentionally Left Blank;
Signature Page for Buyer Follows]*

IN WITNESS WHEREOF, the undersigned have caused this Securities Purchase Agreement to be duly executed by their respective authorized signatories as of the date first indicated above.

Name of Buyer: _____

Signature of Authorized Signatory of Buyer: _____

Name of Authorized Signatory: _____

Title of Authorized Signatory: _____

Email Address of Authorized Signatory: _____

Facsimile Number of Authorized Signatory: _____

Address for Notice to Buyer:

Address for Delivery of Securities to Buyer (if not same as address for notice):

Subscription Amount: \$

Shares:

Principal Amount of Debentures:

AGREED AND ACCEPTED:

JGB ADMIN LLC

By: /s/ Brett Cohen

Name: Brett Cohen

Title: President

SECURITY AGREEMENT

This SECURITY AGREEMENT, dated as of May 24, 2024 (this "Agreement"), is among Bionano Genomics, Inc, a Delaware corporation (the "Company"), the Subsidiaries of the Company party hereto (such subsidiaries, the "Guarantors" and together with the Company, the "Debtors") and the holders of the Company's 11.0% Senior Secured Convertible Debentures Due May 24, 2026, in the original aggregate principal amount of \$20,000,000 (collectively, the "Debentures") signatory hereto, their permitted transferees and assigns (collectively, the "Secured Parties").

WITNESSETH:

WHEREAS, pursuant to the Purchase Agreement (as defined in the Debentures), the Secured Parties have severally agreed to extend the loans to the Company evidenced by the Debentures;

WHEREAS, pursuant to a certain Subsidiary Guarantee, dated as of the date hereof (the "Guarantee"), the Guarantors have jointly and severally agreed to guarantee and act as surety for payment of such Debentures; and

WHEREAS, in order to induce the Secured Parties to extend the loans evidenced by the Debentures, each Debtor has agreed to execute and deliver to the Secured Parties this Agreement and to grant the Secured Parties, pari passu with each other Secured Party and through the Agent (as defined in Section 18 hereof), a security interest in certain property of such Debtor to secure the prompt payment, performance and discharge in full of all of the Company's obligations under the Debentures and the Guarantors' obligations under the Guarantee.

NOW, THEREFORE, in consideration of the agreements herein contained and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereto hereby agree as follows:

1. **Certain Definitions.** As used in this Agreement, the following terms shall have the meanings set forth in this Section 1. Terms used but not otherwise defined in this Agreement that are defined in Article 9 of the UCC (such as "account", "chattel paper", "commercial tort claim", "deposit account", "document", "equipment", "fixtures", "general intangibles", "goods", "instruments", "inventory", "investment property", "letter-of-credit rights", "proceeds" and "supporting obligations") shall have the respective meanings given such terms in Article 9 of the UCC.

(a) "Collateral" means the following personal property of the Debtors, whether presently owned or existing or hereafter acquired or coming into existence, wherever situated, and all additions and accessions thereto and all substitutions and replacements thereof, and all proceeds, products and accounts thereof, including, without limitation, all proceeds from the sale or transfer of the Collateral and of insurance covering the same and of any tort claims in connection therewith, and all dividends, interest, cash, notes, securities, equity interest or other property at any time and from time to time acquired, receivable or otherwise distributed in respect of, or in exchange for, any or all of the Pledged Securities (as defined below):

(i) All goods, including, without limitation, (A) all machinery, equipment, computers, motor vehicles, trucks, tanks, boats, ships, appliances, furniture, special and general tools, fixtures, test and quality control devices and other equipment of every kind and nature and wherever situated, together with all documents of title and documents representing the same, all additions and accessions thereto, replacements therefor, all parts therefor, and all substitutes for any of the foregoing and all other items used and useful in connection with any Debtor's businesses and all improvements thereto; and (B) all inventory;

(ii) All contract rights and other general intangibles, including, without limitation, all partnership interests, membership interests, stock or other securities, rights under any of the Organizational Documents, agreements related to the Pledged Securities, licenses, distribution and other agreements, computer software (whether "off-the-shelf", licensed from any third party or developed by any Debtor), computer software development rights, leases, franchises, customer lists, quality control procedures, grants and rights, goodwill, Intellectual Property and income tax refunds;

(iii) All accounts, together with all instruments, all documents of title representing any of the foregoing, all rights in any merchandising, goods, equipment, motor vehicles and trucks which any of the same may represent, and all right, title, security and guaranties with respect to each account, including any right of stoppage in transit;

(iv) All documents, letter-of-credit rights, instruments and chattel paper;

(v) All commercial tort claims;

(vi) All deposit accounts and all cash (whether or not deposited in such deposit accounts);

(vii) All investment property;

(viii) All supporting obligations;

(ix) All files, records, books of account, business papers, and computer programs; and

(x) The products and proceeds of all of the foregoing Collateral set forth in clauses (i) – (ix) above.

Without limiting the generality of the foregoing, the “Collateral” shall include all investment property and general intangibles respecting ownership and/or other equity interests in each Guarantor, including, without limitation, the shares of capital stock and the other equity interests listed on Schedule G hereto (as the same may be modified from time to time pursuant to the terms hereof), and any other shares of capital stock and/or other equity interests of any other direct or indirect subsidiary of any Debtor obtained in the future, and, in each case, all certificates representing such shares and/or equity interests and, in each case, all rights, options, warrants, stock, other securities and/or equity interests that may hereafter be received, receivable or distributed in respect of, or exchanged for, any of the foregoing and all rights arising under or in connection with the Pledged Securities, including, but not limited to, all dividends, interest and cash.

Notwithstanding anything to the contrary contained herein, the “Collateral” shall not include (a) any property that is the subject of a lien securing purchase money indebtedness permitted under the Debentures pursuant to documents that prohibit any Debtor from granting any other liens in such property, (b) any application to register a trademark with the United States Patent and Trademark Office on the basis of an “intent-to-use” until an applicable statement of use has been submitted and accepted by the United States Patent and Trademark Office with respect thereto, (c) any lease, license or other contract of any Debtor if the grant of a security interest in such lease, license or contract in the manner contemplated by this Agreement is prohibited by the terms of such lease, license or contract or by applicable law and would result in the termination of such lease, license or contract or give the other parties thereto the right to terminate, accelerate or otherwise adversely alter any Debtor’s rights, titles and interests thereunder (including upon the giving of notice or the lapse of time or both), (d) motor vehicles and other equipment the perfection of a security interest in which is governed by certificate of title statutes, and (e) any Excluded Account, provided, that (i) any such limitation described in the foregoing clauses (a) and (c) on the security interests granted hereunder shall apply only to the extent that any such prohibition could not be rendered ineffective pursuant to the UCC or any other applicable law (including pursuant to a Bankruptcy Event (as defined in the Debentures)) or principles of equity and (ii) in the event of the termination or elimination of any such prohibition or the requirement for any consent contained in such lease, license or contract or in any Applicable Law, to the extent sufficient to permit any such item to become Collateral hereunder, or upon the granting of any such consent, or waiving or terminating any requirement for such consent, a security interest in such lease, license or contract shall be automatically and simultaneously granted hereunder and shall be included as Collateral hereunder.

(b) “Excluded Account” means in the ordinary course of business in each case: any (a) payroll and other employee wage and benefit accounts and any account used for disbursements, (b) tax accounts, including, without limitation, sales tax accounts, and any tax benefits accounts, (c) escrow accounts, (d) fiduciary and trust accounts, (e) zero balance accounts, (f) accounts into which governmental receivables are directly deposited, (g) foreign accounts maintained by foreign Subsidiaries and (h) other accounts in respect of which the average monthly balance of funds on deposit therein does not exceed (x) for any such account excluded in reliance on this clause (h) individually, \$500,000 and (y) for all such accounts excluded in reliance on this clause (h) in the aggregate, \$1,000,000. Notwithstanding anything to the contrary contained within, the aggregate value of subsections (a) through (h) of Excluded Accounts shall not exceed \$1,500,000 in the aggregate at any one time.

(c) “Intellectual Property” means the collective reference to all rights, priorities and privileges relating to intellectual property, whether arising under United States, multinational or foreign laws or otherwise, including, without limitation, (i) all copyrights arising under the laws of the United States, any other country or any political subdivision thereof, whether registered or unregistered and whether published or unpublished, all registrations and recordings thereof, and all applications in connection therewith, including, without limitation, all registrations, recordings and applications in the United States Copyright Office, (ii) all letters patent of the United States, any other country or any political subdivision thereof, all reissues and extensions thereof, and all applications for letters patent of the United States or any other country and all divisions, continuations and continuations-in-part thereof, (iii) all trademarks, trade names, corporate names, company names, business names, fictitious business names, trade dress, service marks, logos, domain names and other source or business identifiers, and all goodwill associated therewith, now existing or hereafter adopted or acquired, all registrations and recordings thereof, and all applications in connection therewith, whether in the United States Patent and Trademark Office or in any similar office or agency of the United States, any State thereof or any other country or any political subdivision thereof, or otherwise, and all common law rights related thereto, (iv) all trade secrets arising under the laws of the United States, any other country or any political subdivision thereof, (v) all rights to obtain any reissues, renewals or extensions of the foregoing, (vi) all licenses for any of the foregoing, and (vii) all causes of action for infringement of the foregoing.

(d) “Majority in Interest” means, at any time of determination, the majority in interest (based on then-outstanding principal amounts of Debentures at the time of such determination) of the Secured Parties.

(e) “Necessary Endorsement” means undated stock powers endorsed in blank or other proper instruments of assignment duly executed and such other instruments or documents as the Agent (as that term is defined below) may reasonably request.

(f) “Obligations” means all of the liabilities and obligations (primary, secondary, direct, contingent, sole, joint or several) due or to become due, or that are now or may be hereafter contracted or acquired, or owing to, of any Debtor to the Secured Parties, in each case arising under this Agreement, the Debentures, the Guarantees and the other Transaction Documents (as defined in the Purchase Agreement), whether now or hereafter existing, voluntary or involuntary, direct or indirect, absolute or contingent, liquidated or unliquidated, whether or not jointly owed with others, and whether or not from time to time decreased or extinguished and later increased, created or incurred, and all or any portion of such obligations or liabilities that are paid, to the extent all or any part of such payment is avoided or recovered directly or indirectly from any of the Secured Parties as a preference, fraudulent transfer or otherwise as such obligations may be amended, supplemented, converted, extended or modified from time to time. Without limiting the generality of the foregoing, the term “Obligations” shall include, without limitation: (i) principal of, and interest on the Debentures and the loans extended pursuant thereto; (ii) any and all other fees, indemnities, costs, obligations and liabilities of the Debtors from time to time under or in connection with this Agreement, the Debentures, the Guarantees and any other instruments, agreements or other documents executed and/or delivered in connection herewith or therewith; and (iii) all amounts (including but not limited to post-petition interest) in respect of the foregoing that would be payable but for the fact that the obligations to pay such amounts are unenforceable or not allowable due to the existence of a bankruptcy, reorganization or similar proceeding involving any Debtor.

(g) “Organizational Documents” means with respect to any Debtor, the documents by which such Debtor was organized (such as a certificate of incorporation, certificate of limited partnership or articles of organization, and including, without limitation, any certificates of designation for preferred stock or other forms of preferred equity) and which relate to the internal governance of such Debtor (such as bylaws, a partnership agreement or an operating, limited liability or members agreement).

(h) “Pledged Interests” shall have the meaning ascribed to such term in Section 4(j).

(i) “Pledged Securities” shall have the meaning ascribed to such term in Section 4(i).

(j) “UCC” means the Uniform Commercial Code of the State of New York and or any other applicable law of any state or states which has jurisdiction with respect to all, or any portion of, the Collateral or this Agreement, from time to time. It is the intent of the parties that defined terms in the UCC should be construed in their broadest sense so that the term “Collateral” will be construed in its broadest sense. Accordingly if there are, from time to time, changes to defined terms in the UCC that broaden the definitions, they are incorporated herein and if existing definitions in the UCC are broader than the amended definitions, the existing ones shall be controlling.

2. **Grant of Security Interest in Collateral.** As an inducement for the Secured Parties to extend the loans as evidenced by the Debentures and to secure the complete and timely payment, performance and discharge in full, as the case may be, of all of the Obligations, each Debtor hereby unconditionally and irrevocably pledges, grants and hypothecates to the Agent for the benefit of the Secured Parties a security interest in and to, a lien upon and a right of set-off against all of their respective right, title and interest of whatsoever kind and nature in and to, the Collateral (a "Security Interest" and, collectively, the "Security Interests").

3. **Delivery of Certain Collateral.** Contemporaneously or prior to the execution of this Agreement, each Debtor shall deliver or cause to be delivered to the Agent (a) any and all certificates and other instruments representing or evidencing the Pledged Securities, and (b) any and all certificates and other instruments or documents representing any of the other Collateral, in each case, together with all Necessary Endorsements. The Debtors are, contemporaneously with the execution hereof, delivering to Agent, or have previously delivered to Agent, a true and correct copy of each Organizational Document governing any of the Pledged Securities.

4. **Representations, Warranties, Covenants and Agreements of the Debtors.** Except as set forth under the corresponding section of the disclosure schedules delivered to the Secured Parties concurrently herewith (the "Disclosure Schedules"), which Disclosure Schedules shall be deemed a part hereof, each Debtor represents and warrants to, and covenants and agrees with, the Secured Parties as follows:

(a) Each Debtor has the requisite corporate, partnership, limited liability company or other power and authority to enter into this Agreement and otherwise to carry out its obligations hereunder. The execution, delivery and performance by each Debtor of this Agreement and the filings contemplated therein have been duly authorized by all necessary action on the part of such Debtor and no further action is required by such Debtor. This Agreement has been duly executed by each Debtor. This Agreement constitutes the legal, valid and binding obligation of each Debtor, enforceable against each Debtor in accordance with its terms except as such enforceability may be limited by applicable bankruptcy, insolvency, reorganization and similar laws of general application relating to or affecting the rights and remedies of creditors and by general principles of equity.

(b) The Debtors have no place of business or offices where their respective books of account and records are kept (other than temporarily at the offices of its attorneys or accountants) or places where Collateral having a value in excess of \$250,000 is stored or located, except as set forth on Schedule A attached hereto. Except as specifically set forth on Schedule A, each Debtor is the lessee or record owner of the real property where such Collateral is located, and there exist no mortgages or other liens on any such real property except for Permitted Liens (as defined in the Debentures). Except as disclosed on Schedule A, none of such Collateral is in the possession of any consignee, bailee, warehouseman, agent or processor.

(c) Except for Permitted Liens (as defined in the Debentures) and except as set forth on Schedule B attached hereto, the Debtors are the sole owner of the Collateral (except for licenses granted by any Debtor in the ordinary course of business), free and clear of any liens, security interests, encumbrances, rights or claims, and are fully authorized through all corporate or limited liability company power, as applicable, to grant the Security Interests. Except as set forth on Schedule C attached hereto, there is not on file in any governmental or regulatory authority, agency or recording office an effective financing statement, security agreement, license or transfer or any notice of any of the foregoing (other than those that will be filed in favor of the Secured Parties pursuant to this Agreement) covering or affecting any of the Collateral. Except as set forth on Schedule C attached hereto, as long as this Agreement shall be in effect, the Debtors shall not execute and shall not knowingly permit to be on file in any such office or agency any other financing statement or other document or instrument (except to the extent filed or recorded in favor of the Secured Parties pursuant to the terms of this Agreement or in connection with any Permitted Lien).

(d) No written claim has been received that any Collateral or any Debtor's use of any Collateral violates the rights of any third party in any material respect. There has been no adverse decision to any Debtor's claim of ownership rights in or exclusive rights to use the Collateral in any jurisdiction or to any Debtor's right to keep and maintain such Collateral in full force and effect, and there is no proceeding involving said rights pending or, to the best knowledge of any Debtor, threatened before any court, judicial body, administrative or regulatory agency, arbitrator or other governmental authority that could reasonably be expected to have a Material Adverse Effect.

(e) Each Debtor shall at all times maintain its books of account and records relating to the Collateral at its principal place of business and its Collateral having a value in excess of \$250,000 at the locations set forth on Schedule A attached hereto and may not relocate such books of account and records or tangible Collateral unless it delivers to the Secured Parties at least 10 days prior to such relocation (i) written notice of such relocation and the new location thereof (which must be within the United States) and (ii) evidence that appropriate financing statements under the UCC and other necessary documents, if any, have been filed and recorded and other steps have been taken to perfect the Security Interests to create in favor of the Agent for the benefit of the Secured Parties a valid, perfected and continuing perfected first priority lien in the Collateral.

(f) This Agreement creates in favor of the Agent for the benefit of the Secured Parties a valid security interest in the Collateral, subject only to Permitted Liens (as defined in the Debentures), securing the payment and performance of the Obligations. Upon making the filings described in the immediately following paragraph, all security interests created hereunder in any Collateral which may be perfected by filing Uniform Commercial Code financing statements shall have been duly perfected. Except for the filing of the Uniform Commercial Code financing statements referred to in the immediately following paragraph, the recordation of the Intellectual Property Security Agreement (as defined in Section 4(p) hereof) with respect to copyrights and copyright applications in the United States Copyright Office referred to in paragraph (m), the execution and delivery of deposit account control agreements satisfying the requirements of Section 9-104(a)(2) of the UCC with respect to each deposit account of the Debtors constituting Collateral, and the delivery of the certificates and other instruments provided in Section 3, no action is necessary to create, perfect or protect the security interests created hereunder. Without limiting the generality of the foregoing, except for the filing of said financing statements, the recordation of said Intellectual Property Security Agreement and the execution and delivery of said deposit account control agreements, no consent of any third parties and no authorization, approval or other action by, and no notice to or filing with, any governmental authority or regulatory body is required for (i) the execution, delivery and performance of this Agreement, (ii) the creation or perfection of the Security Interests created hereunder in the Collateral or (iii) the enforcement of the rights of the Agent and the Secured Parties hereunder.

(g) Each Debtor hereby authorizes the Agent to file one or more financing statements under the UCC, with respect to the Security Interests, with the proper filing and recording agencies in any jurisdiction reasonably deemed proper by it.

(h) The execution, delivery and performance of this Agreement by the Debtors does not (i) violate any of the provisions of any Organizational Documents of any Debtor or any judgment, decree, order or award of any court, governmental body or arbitrator or any applicable law, rule or regulation applicable to any Debtor or (ii) conflict with, or constitute a default (or an event that with notice or lapse of time or both would become a default) under, or give to others any rights of termination, amendment, acceleration or cancellation (with or without notice, lapse of time or both) of, any agreement, credit facility, debt or other instrument (evidencing any Debtor's debt or otherwise) or other understanding to which any Debtor is a party or by which any property or asset of any Debtor is bound or affected, in each case, that could reasonably be expected to have a Material Adverse Effect. If any, all required consents (including, without limitation, from stockholders or creditors of any Debtor) necessary for any Debtor to enter into and perform its obligations hereunder have been obtained.

(i) The capital stock and other equity interests listed on Schedule G hereto (the “Pledged Securities”) represent all of the capital stock and other equity interests of the Guarantors, and represent all capital stock and other equity interests owned, directly or indirectly, by the Company in its domestic Subsidiaries. All of the Pledged Securities are validly issued, fully paid and nonassessable, and the Company is the legal and beneficial owner of the Pledged Securities, free and clear of any lien, security interest or other encumbrance except for the security interests created by this Agreement and other Permitted Liens (as defined in the Debentures).

(j) The ownership and other equity interests in partnerships and limited liability companies (if any) included in the Collateral (the “Pledged Interests”) by their express terms do not provide that they are securities governed by Article 8 of the UCC and are not held in a securities account or by any financial intermediary.

(k) Except for Permitted Liens (as defined in the Debentures), each Debtor shall at all times maintain the liens and Security Interests provided for hereunder as valid and perfected first priority liens and security interests in the Collateral in favor of the Secured Parties until this Agreement and the Security Interest hereunder shall be terminated pursuant to Section 14 hereof. Each Debtor hereby agrees to defend the same against the claims of any and all persons and entities. Each Debtor shall safeguard and protect all Collateral for the account of the Secured Parties. At the request of the Agent, each Debtor will sign and deliver to the Agent on behalf of the Secured Parties at any time or from time to time one or more financing statements pursuant to the UCC in form reasonably satisfactory to the Agent and will pay the cost of filing the same in all public offices wherever filing is, or is reasonably deemed by the Agent to be, necessary or desirable to effect the rights and obligations provided for herein. Without limiting the generality of the foregoing, each Debtor shall pay all fees, taxes and other amounts necessary to maintain the Collateral and the Security Interests hereunder, and each Debtor shall obtain and furnish to the Agent from time to time, upon demand, such releases and/or subordinations of claims and liens which may be required to maintain the priority of the Security Interests hereunder.

(l) No Debtor will transfer, pledge, hypothecate, encumber, license, sell or otherwise dispose of any of the Collateral (except as permitted under the Debentures) without the prior written consent of a Majority in Interest.

(m) Each Debtor shall keep and preserve its equipment, inventory and other tangible Collateral in good condition, repair and order (ordinary war and tear excluded).

(n) Each Debtor shall maintain with financially sound and reputable insurers, insurance with respect to the Collateral, including Collateral hereafter acquired, against loss or damage of the kinds and in the amounts customarily insured against by entities of established reputation having similar properties similarly situated and in such amounts as are customarily carried under similar circumstances by other such entities and otherwise as is prudent for entities engaged in similar businesses but in any event sufficient to cover the full replacement cost thereof. Each Debtor shall cause each insurance policy issued in connection herewith to provide, and the insurer issuing such policy to certify to the Agent, that (a) the Agent will be named as lender loss payee and additional insured under each such insurance policy; (b) if such insurance be proposed to be cancelled or materially changed for any reason whatsoever, such insurer will promptly notify the Agent and such cancellation or change shall not be effective as to the Agent for at least thirty (30) days after receipt by the Agent of such notice, unless the effect of such change is to extend or increase coverage under the policy; and (c) the Agent will have the right (but no obligation) at its election to remedy any default in the payment of premiums within ten (10) days of notice from the insurer of such default. If no Event of Default (as defined in the Debentures) exists and if the proceeds arising out of any claim or series of related claims do not exceed \$250,000, loss payments in each instance will be applied by the applicable Debtor to the repair and/or replacement of property with respect to which the loss was incurred to the extent reasonably feasible, and any loss payments or the balance thereof remaining, to the extent not so applied, shall be payable to the applicable Debtor; provided, however, that payments received by any Debtor after an Event of Default occurs and is continuing or in excess of \$250,000 for any occurrence or series of related occurrences shall be paid to the Agent on behalf of the Secured Parties and, if received by such Debtor, shall be held in trust for the Secured Parties and immediately paid over to the Agent unless otherwise directed in writing by the Agent. Copies of such policies or the related certificates, in each case, naming the Agent as lender loss payee and additional insured shall be delivered to the Agent at least annually.

(o) Each Debtor shall, within ten (10) days of obtaining knowledge thereof, advise the Secured Parties promptly, in sufficient detail, of any material adverse change in the Collateral, and of the occurrence of any event which would have a material adverse effect on the value of the Collateral or on the Secured Parties' security interest, through the Agent, therein.

(p) Each Debtor shall promptly execute and deliver to the Agent such further deeds, mortgages, assignments, security agreements, financing statements or other instruments, documents, certificates and assurances and take such further action as the Agent may from time to time reasonably request and may in its sole discretion deem necessary to perfect, protect or enforce the Secured Parties' security interest in the Collateral including, without limitation, if applicable, the execution and delivery of a separate security agreement with respect to each Debtor's Intellectual Property ("Intellectual Property Security Agreement") in which the Agent has been granted a security interest hereunder, substantially in a form reasonably acceptable to the Agent, which Intellectual Property Security Agreement, other than as stated therein, shall be subject to all of the terms and conditions hereof.

(q) Each Debtor shall permit the Agent and its representatives and agents to inspect the Collateral during normal business hours and upon reasonable prior notice, and to make copies of records pertaining to the Collateral as may be reasonably requested by the Agent from time to time; provided, that unless an Event of Default has occurred and is continuing, Debtors shall not be obligated to reimburse the Agent for more than one such inspection in any calendar year.

(r) Each Debtor shall take all steps reasonably necessary to diligently pursue and seek to preserve, enforce and collect any rights, claims, causes of action and accounts receivable in respect of the Collateral except as otherwise permitted in accordance with the terms of the Debentures.

(s) Each Debtor shall promptly notify the Secured Parties in sufficient detail upon becoming aware of any attachment, garnishment, execution or other legal process levied against any Collateral and of any other information received by such Debtor that may materially affect the value of the Collateral, the Security Interest or the rights and remedies of the Secured Parties hereunder.

(t) All information heretofore, herein or hereafter supplied to the Secured Parties by or on behalf of any Debtor with respect to the Collateral is accurate and complete in all material respects as of the date furnished.

(u) The Debtors shall at all times preserve and keep in full force and effect their respective valid existence and good standing in its jurisdiction of organization and any rights and franchises material to its business.

(v) No Debtor will change its name, type of organization, jurisdiction of organization, organizational identification number (if it has one), legal or corporate structure, or identity, or add any new fictitious name unless it provides at least 30 days prior written notice to the Secured Parties of such change and, at the time of such written notification, such Debtor provides any financing statements or fixture filings necessary to perfect and continue the perfection of the Security Interests granted and evidenced by this Agreement.

(w) Except in the ordinary course of business, no Debtor may consign any of its inventory or sell any of its inventory on bill and hold, sale or return, sale on approval, or other conditional terms of sale without the consent of the Agent which shall not be unreasonably withheld.

(x) No Debtor may relocate its chief executive office to a new location without providing 30 days prior written notification thereof to the Secured Parties and so long as, at the time of such written notification, such Debtor provides any financing statements or fixture filings necessary to perfect and continue the perfection of the Security Interests granted and evidenced by this Agreement.

(y) Each Debtor was organized and remains organized solely under the laws of the state set forth next to such Debtor's name in Schedule D attached hereto, which Schedule D sets forth each Debtor's organizational identification number or, if any Debtor does not have one, states that one does not exist.

(z) (i) The actual name of each Debtor is the name set forth in Schedule D attached hereto; (ii) no Debtor has any trade names except as set forth on Schedule E attached hereto; (iii) no Debtor has used any name other than that stated in the preamble hereto or as set forth on Schedule E for the preceding five years; and (iv) no entity has merged into any Debtor or been acquired by any Debtor within the past five years except as set forth on Schedule E.

(aa) At any time and from time to time that any Collateral consists of instruments, certificated securities or other items that require or permit possession by the secured party to perfect the security interest created hereby, the applicable Debtor shall deliver such Collateral to the Agent.

(bb) Each Debtor, in its capacity as issuer, hereby agrees, to comply with any and all orders and instructions of Agent regarding the Pledged Interests consistent with the terms of this Agreement without the further consent of any Debtor as contemplated by Section 8-106 (or any successor section) of the UCC. Further, each Debtor agrees that it shall not enter into a similar agreement (or one that would confer "control" within the meaning of Article 8 of the UCC) with any other person or entity.

(cc) Each Debtor shall cause all tangible chattel paper constituting Collateral with a value in excess of \$250,000 to be delivered to the Agent, or, if such delivery is not possible, then to cause such tangible chattel paper to contain a legend noting that it is subject to the security interest created by this Agreement. To the extent that any Collateral consists of electronic chattel paper with a value in excess of \$250,000, the applicable Debtor shall cause the underlying chattel paper to be "marked" within the meaning of Section 9-105 of the UCC (or successor section thereto).

(dd) If there is any investment property or deposit account included as Collateral that can be perfected by "control" through an account control agreement, the applicable Debtor shall cause such an account control agreement, in form and substance in each case reasonably satisfactory to the Agent, to be entered into and delivered to the Agent for the benefit of the Secured Parties within 30 days of the Closing Date (with respect to deposit accounts included in Collateral as of the Closing Date) or creation or acquisition thereof (with respect to deposit accounts created or acquired after the Closing Date).

(ee) To the extent that any Collateral consists of letter-of-credit rights with a value in excess of \$250,000, the applicable Debtor shall cause the issuer of each underlying letter of credit with respect thereto to consent to an assignment of the proceeds thereof to the Secured Parties.

(ff) To the extent that any Collateral with a value in excess of \$250,000 is in the possession of any third party, the applicable Debtor shall join with the Agent in notifying such third party of the Secured Parties' security interest in such Collateral and shall use its commercially reasonable efforts to obtain an acknowledgement and agreement from such third party with respect to the Collateral, in form and substance reasonably satisfactory to the Agent.

(gg) If any Debtor shall at any time hold or acquire a commercial tort claim, such Debtor shall promptly notify the Secured Parties in a writing signed by such Debtor of the particulars thereof and grant to the Secured Parties in such writing a security interest therein and in the proceeds thereof, all upon the terms of this Agreement, with such writing to be in form and substance satisfactory to the Agent.

(hh) [reserved].

(ii) Each Debtor shall cause each domestic subsidiary of such Debtor to immediately become a party hereto (an “Additional Debtor”), by executing and delivering an Additional Debtor Joinder in substantially the form of Annex A attached hereto and comply with the provisions hereof applicable to the Debtors. Concurrent therewith, the Additional Debtor shall deliver replacement schedules for, or supplements to all other Schedules to (or referred to in) this Agreement, as applicable, which replacement schedules shall supersede, or supplements shall modify, the Schedules then in effect. The Additional Debtor shall also deliver such opinions of counsel, authorizing resolutions, good standing certificates, incumbency certificates, organizational documents, financing statements and other information and documentation as the Agent may reasonably request. Upon delivery of the foregoing to the Agent, the Additional Debtor shall be and become a party to this Agreement with the same rights and obligations as the Debtors, for all purposes hereof as fully and to the same extent as if it were an original signatory hereto and shall be deemed to have made the representations, warranties and covenants set forth herein as of the date of execution and delivery of such Additional Debtor Joinder, and all references herein to the “Debtors” shall be deemed to include each Additional Debtor.

(jj) Each Debtor shall vote the Pledged Securities to comply with the covenants and agreements set forth herein and in the Debentures.

(kk) Each Debtor shall register the pledge of the applicable Pledged Securities on the books of such Debtor. Each Debtor shall notify each issuer of Pledged Securities to register the pledge of the applicable Pledged Securities in the name of the Secured Parties on the books of such issuer.

(ll) In the event that, upon an occurrence and during the continuance of an Event of Default, Agent shall sell all or any of the Pledged Securities to another party or parties (herein called the "Transferee") or shall purchase or retain all or any of the Pledged Securities, each Debtor shall, to the extent applicable: (i) deliver to Agent or the Transferee, as the case may be, the articles of incorporation, bylaws, minute books, stock certificate books, corporate seals, deeds, leases, indentures, agreements, evidences of indebtedness, books of account, financial records and all other Organizational Documents and records of the Debtors and their direct and indirect subsidiaries; (ii) use its reasonable efforts to obtain resignations of the persons then serving as officers and directors of the Debtors and their direct and indirect subsidiaries, if so requested; and (iii) use its reasonable efforts to obtain any approvals that are required by any governmental or regulatory body in order to permit the sale of the Pledged Securities to the Transferee or the purchase or retention of the Pledged Securities by Agent and allow the Transferee or Agent to continue the business of the Debtors and their direct and indirect subsidiaries.

(mm) Without limiting the generality of the other obligations of the Debtors hereunder, each Debtor shall promptly (i) cause to be registered at the United States Copyright Office all of its material copyrights, (ii) cause the security interest contemplated hereby with respect to all Intellectual Property registered at the United States Copyright Office or United States Patent and Trademark Office to be duly recorded at the applicable office, and (iii) give the Agent notice whenever it acquires (whether absolutely or by license) or creates any additional material Intellectual Property.

(nn) Each Debtor will from time to time, at the joint and several expense of the Debtors, promptly execute and deliver all such further instruments and documents, and take all such further action as may be necessary or desirable, or as the Agent may reasonably request, in order to perfect and protect any security interest granted or purported to be granted hereby or to enable the Secured Parties to exercise and enforce their rights and remedies hereunder and with respect to any Collateral or to otherwise carry out the purposes of this Agreement.

(oo) Schedule F attached hereto lists all of the registered patents, patent applications, registered trademarks, trademark applications, registered copyrights, and domain names owned by any of the Debtors as of the date hereof. Schedule F lists all material licenses in favor of any Debtor for the use of any patents, trademarks, copyrights and domain names as of the date hereof

(pp) [Reserved]

(qq) Until the Obligations shall have been paid and performed in full, the Company covenants that it shall promptly direct any direct or indirect domestic subsidiary of the Company formed or acquired after the date hereof to enter into a Subsidiary Guarantee in favor of the Secured Party, in the form of Exhibit D to the Purchase Agreement.

5. **Effect of Pledge on Certain Rights.** If any of the Collateral subject to this Agreement consists of nonvoting equity or ownership interests (regardless of class, designation, preference or rights) that may be converted into voting equity or ownership interests upon the occurrence of certain events (including, without limitation, upon the transfer of all or any of the other stock or assets of the issuer), it is agreed that the pledge of such equity or ownership interests pursuant to this Agreement or the enforcement of any of Agent's rights hereunder shall not be deemed to be the type of event which would trigger such conversion rights notwithstanding any provisions in the Organizational Documents or agreements to which any Debtor is subject or to which any Debtor is party.

6. **Defaults.** The following events shall be "Events of Default":

- (a) The occurrence of an Event of Default (as defined in the Debentures) under the Debentures;
- (b) Any representation or warranty of any Debtor in this Agreement shall prove to have been incorrect in any material respect when made;
- (c) The failure by any Debtor to observe or perform any of its obligations hereunder for ten (10) business days after delivery to such Debtor of notice of such failure by or on behalf of a Secured Party unless such default is capable of cure but cannot be cured within such time frame and such Debtor is using best efforts to cure same in a timely fashion; or
- (d) If any material provision of this Agreement shall at any time for any reason be declared to be null and void, or the validity or enforceability thereof shall be contested by any Debtor, or a proceeding shall be commenced by any Debtor, or by any governmental authority having jurisdiction over any Debtor, seeking to establish the invalidity or unenforceability thereof, or any Debtor shall deny that any Debtor has any liability or obligation purported to be created under this Agreement.

7. **Duty To Hold In Trust.**

- (a) Upon the occurrence of any Event of Default and at any time thereafter, each Debtor shall, upon receipt of any revenue, income, dividend, interest or other sums subject to the Security Interests, whether payable pursuant to the Debentures or otherwise, or of any check, draft, note, trade acceptance or other instrument evidencing an obligation to pay any such sum, hold the same in trust for the Secured Parties and shall forthwith endorse and transfer any such sums or instruments, or both, to the Secured Parties, pro-rata in proportion to their respective then-currently outstanding principal amount of Debentures for application to the satisfaction of the Obligations (and if any Debenture is not outstanding, pro-rata in proportion to the initial purchases of the remaining Debentures).
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(b) If any Debtor shall become entitled to receive or shall receive any securities or other property (including, without limitation, shares of Pledged Securities or instruments representing Pledged Securities acquired after the date hereof, or any options, warrants, rights or other similar property or certificates representing a dividend, or any distribution in connection with any recapitalization, reclassification or increase or reduction of capital, or issued in connection with any reorganization of such Debtor or any of its direct or indirect subsidiaries) in respect of the Pledged Securities (whether as an addition to, in substitution of, or in exchange for, such Pledged Securities or otherwise), such Debtor agrees to (i) accept the same as the agent of the Secured Parties; (ii) hold the same in trust on behalf of and for the benefit of the Secured Parties; and (iii) to deliver any and all certificates or instruments evidencing the same to Agent on or before the close of business on the fifth business day following the receipt thereof by such Debtor, in the exact form received together with the Necessary Endorsements, to be held by Agent subject to the terms of this Agreement as Collateral.

8. Rights and Remedies Upon Default.

(a) Upon the occurrence of any Event of Default and at any time thereafter, the Secured Parties, acting through the Agent, shall have the right to exercise all of the remedies conferred hereunder and under the Debentures, and the Secured Parties shall have all the rights and remedies of a secured party under the UCC. Without limitation, the Agent, for the benefit of the Secured Parties, shall have the following rights and powers:

(i) The Agent shall have the right to take possession of the Collateral and, for that purpose, enter, with the aid and assistance of any person, any premises where the Collateral, or any part thereof, is or may be placed and remove the same, and each Debtor shall assemble the Collateral and make it available to the Agent at places which the Agent shall reasonably select, whether at such Debtor's premises or elsewhere, and make available to the Agent, without rent, all of such Debtor's respective premises and facilities for the purpose of the Agent taking possession of, removing or putting the Collateral in saleable or disposable form.

(ii) Upon notice to the Debtors by Agent, all rights of each Debtor to exercise the voting and other consensual rights which it would otherwise be entitled to exercise and all rights of each Debtor to receive the dividends and interest which it would otherwise be authorized to receive and retain, shall cease. Upon the giving of such notice, Agent shall have the right to receive, for the benefit of the Secured Parties, any interest, cash dividends or other payments on the Collateral and, at the option of Agent, to exercise in such Agent's discretion all voting rights pertaining thereto. Without limiting the generality of the foregoing, Agent shall have the right (but not the obligation) to exercise all rights with respect to the Collateral as it were the sole and absolute owner thereof, including, without limitation, to vote and/or to exchange, at its sole discretion, any or all of the Collateral in connection with a merger, reorganization, consolidation, recapitalization or other readjustment concerning or involving the Collateral or any Debtor or any of its direct or indirect subsidiaries.

(iii) The Agent shall have the right to operate the business of each Debtor using the Collateral and shall have the right to assign, sell, lease or otherwise dispose of and deliver all or any part of the Collateral, at public or private sale or otherwise, either with or without special conditions or stipulations, for cash or on credit or for future delivery, in such parcel or parcels and at such time or times and at such place or places, and upon such terms and conditions as the Agent may deem commercially reasonable, all without (except as shall be required by applicable statute and cannot be waived) advertisement or demand upon or notice to any Debtor or right of redemption of a Debtor, which are hereby expressly waived. Upon each such sale, lease, assignment or other transfer of Collateral, the Agent, for the benefit of the Secured Parties, may, unless prohibited by applicable law which cannot be waived, purchase all or any part of the Collateral being sold, free from and discharged of all trusts, claims, right of redemption and equities of any Debtor, which are hereby waived and released.

(iv) The Agent shall have the right (but not the obligation) to notify any account debtors and any obligors under instruments or accounts to make payments directly to the Agent, on behalf of the Secured Parties, and to enforce the Debtors' rights against such account debtors and obligors.

(v) The Agent, for the benefit of the Secured Parties, may (but is not obligated to) direct any financial intermediary or any other person or entity holding any investment property to transfer the same to the Agent, on behalf of the Secured Parties, or its designee.

(vi) The Agent may (but is not obligated to) transfer any or all Intellectual Property registered in the name of any Debtor at the United States Patent and Trademark Office and/or Copyright Office into the name of the Secured Parties or any designee or any purchaser of any Collateral.

(b) The Agent shall comply with any applicable law in connection with a disposition of Collateral and such compliance will not be considered adversely to affect the commercial reasonableness of any sale of the Collateral. The Agent may sell the Collateral without giving any warranties and may specifically disclaim such warranties. If the Agent sells any of the Collateral on credit, the Debtors will only be credited with payments actually made by the purchaser. In addition, each Debtor waives any and all rights that it may have to a judicial hearing in advance of the enforcement of any of the Agent's rights and remedies hereunder, including, without limitation, its right following an Event of Default to take immediate possession of the Collateral and to exercise its rights and remedies with respect thereto.

(c) For the purpose of enabling the Agent to further exercise rights and remedies under this Section 8 or elsewhere provided by agreement or applicable law, each Debtor hereby grants to the Agent, for the benefit of the Agent and the Secured Parties, an irrevocable, nonexclusive license (exercisable without payment of royalty or other compensation to such Debtor) to use, license or sublicense following an Event of Default, any Intellectual Property now owned or hereafter acquired by such Debtor, and wherever the same may be located, and including in such license access to all media in which any of the licensed items may be recorded or stored and to all computer software and programs used for the compilation or printout thereof.

9. **Applications of Proceeds.** The proceeds of any such sale, lease or other disposition of the Collateral hereunder or from payments made on account of any insurance policy insuring any portion of the Collateral shall be applied first, to the expenses of retaking, holding, storing, processing and preparing for sale, selling, and the like (including, without limitation, any taxes, fees and other costs incurred in connection therewith) of the Collateral, to the reasonable attorneys' fees and expenses incurred by the Agent in enforcing the Secured Parties' rights hereunder and in connection with collecting, storing and disposing of the Collateral, and then to satisfaction of the Obligations pro rata among the Secured Parties (based on then-outstanding principal amounts of Debentures at the time of any such determination), and to the payment of any other amounts required by applicable law, after which the Secured Parties shall pay to the applicable Debtor any surplus proceeds. If, upon the sale, license or other disposition of the Collateral, the proceeds thereof are insufficient to pay all amounts to which the Secured Parties are legally entitled, the Debtors will be liable for the deficiency, together with interest thereon, at the rate of 18.0% per annum or the lesser amount permitted by applicable law (the "Default Rate"), and the reasonable fees of any attorneys employed by the Secured Parties to collect such deficiency. To the extent permitted by applicable law, each Debtor waives all claims, damages and demands against the Secured Parties arising out of the repossession, removal, retention or sale of the Collateral, unless due solely to the gross negligence or willful misconduct of the Secured Parties as determined by a final judgment (not subject to further appeal) of a court of competent jurisdiction.

10. **Securities Law Provision.** Each Debtor recognizes that Agent may be limited in its ability to effect a sale to the public of all or part of the Pledged Securities by reason of certain prohibitions in the Securities Act of 1933, as amended, or other federal or state securities laws (collectively, the "Securities Laws"), and may be compelled to resort to one or more sales to a restricted group of purchasers who may be required to agree to acquire the Pledged Securities for their own account, for investment and not with a view to the distribution or resale thereof. Each Debtor agrees that sales so made may be at prices and on terms less favorable than if the Pledged Securities were sold to the public, and that Agent has no obligation to delay the sale of any Pledged Securities for the period of time necessary to register the Pledged Securities for sale to the public under the Securities Laws. Each Debtor shall cooperate with Agent in its attempt to satisfy any requirements under the Securities Laws (including, without limitation, registration thereunder if requested by Agent) applicable to the sale of the Pledged Securities by Agent.

11. **Costs and Expenses.** Each Debtor agrees to pay all reasonable and documented out-of-pocket fees, costs and expenses incurred in connection with any filing required hereunder, including without limitation, any financing statements pursuant to the UCC, continuation statements, partial releases and/or termination statements related thereto or any expenses of any searches reasonably required by the Agent. The Debtors shall also pay all other claims and charges which in the reasonable opinion of the Agent is reasonably likely to prejudice, imperil or otherwise affect the Collateral or the Security Interests therein. The Debtors will also, upon demand, pay to the Agent the amount of any and all reasonable and documented expenses, including the reasonable and documented fees and expenses of its counsel and of any experts and agents, which the Agent, for the benefit of the Secured Parties, may incur in connection with the creation, perfection, protection, satisfaction, foreclosure, collection or enforcement of the Security Interest and the preparation, administration, continuance, amendment or enforcement of this Agreement and pay to the Agent the amount of any and all reasonable and documented expenses, including the reasonable fees and expenses of its counsel and of any experts and agents, which the Agent, for the benefit of the Secured Parties, and the Secured Parties may incur in connection with (i) the enforcement of this Agreement, (ii) the custody or preservation of, or the sale of, collection from, or other realization upon, any of the Collateral, or (iii) the exercise or enforcement of any of the rights of the Secured Parties under the Debentures. Until so paid, any fees payable hereunder shall be added to the principal amount of the Debentures and shall bear interest at the Default Rate.

12. **Responsibility for Collateral.** The Debtors assume all liabilities and responsibility in connection with all Collateral, and the Obligations shall in no way be affected or diminished by reason of the loss, destruction, damage or theft of any of the Collateral or its unavailability for any reason. Without limiting the generality of the foregoing, (a) neither the Agent nor any Secured Party (i) has any duty (either before or after an Event of Default) to collect any amounts in respect of the Collateral or to preserve any rights relating to the Collateral, or (ii) has any obligation to clean-up or otherwise prepare the Collateral for sale, and (b) each Debtor shall remain obligated and liable under each contract or agreement included in the Collateral to be observed or performed by such Debtor thereunder. Neither the Agent nor any Secured Party shall have any obligation or liability under any such contract or agreement by reason of or arising out of this Agreement or the receipt by the Agent or any Secured Party of any payment relating to any of the Collateral, nor shall the Agent or any Secured Party be obligated in any manner to perform any of the obligations of any Debtor under or pursuant to any such contract or agreement, to make inquiry as to the nature or sufficiency of any payment received by the Agent or any Secured Party in respect of the Collateral or as to the sufficiency of any performance by any party under any such contract or agreement, to present or file any claim, to take any action to enforce any performance or to collect the payment of any amounts which may have been assigned to the Agent or to which the Agent or any Secured Party may be entitled at any time or times.

13. **Security Interests Absolute.** All rights of the Secured Parties and all obligations of the Debtors hereunder, shall be absolute and unconditional, irrespective of: (a) any lack of validity or enforceability of this Agreement, the Debentures or any agreement entered into in connection with the foregoing, or any portion hereof or thereof; (b) any change in the time, manner or place of payment or performance of, or in any other term of, all or any of the Obligations, or any other amendment or waiver of or any consent to any departure from the Debentures or any other agreement entered into in connection with the foregoing; (c) any exchange, release or nonperfection of any of the Collateral, or any release or amendment or waiver of or consent to departure from any other collateral for, or any guarantee, or any other security, for all or any of the Obligations; (d) any action by the Secured Parties to obtain, adjust, settle and cancel in its sole discretion any insurance claims or matters made or arising in connection with the Collateral; or (e) any other circumstance which might otherwise constitute any legal or equitable defense available to a Debtor, or a discharge of all or any part of the Security Interests granted hereby. Until the Obligations shall have been paid in full in cash (other than inchoate reimbursement obligations for which no demand has been made), the rights of the Secured Parties shall continue even if the Obligations are barred for any reason, including, without limitation, the running of the statute of limitations or bankruptcy. Each Debtor expressly waives presentment, protest, notice of protest, demand, notice of nonpayment and demand for performance. In the event that at any time any transfer of any Collateral or any payment received by the Secured Parties hereunder shall be deemed by final order of a court of competent jurisdiction to have been a voidable preference or fraudulent conveyance under the bankruptcy or insolvency laws of the United States, or shall be deemed to be otherwise due to any party other than the Secured Parties, then, in any such event, each Debtor's obligations hereunder shall survive cancellation of this Agreement, and shall not be discharged or satisfied by any prior payment thereof and/or cancellation of this Agreement, but shall remain a valid and binding obligation enforceable in accordance with the terms and provisions hereof. Each Debtor waives all right to require the Secured Parties to proceed against any other person or entity or to apply any Collateral which the Secured Parties may hold at any time, or to marshal assets, or to pursue any other remedy. Each Debtor waives any defense arising by reason of the application of the statute of limitations to any obligation secured hereby.

14. **Term of Agreement.** This Agreement and the Security Interests shall terminate on the date on which all payments under the Debentures and all other Obligations have been paid in full in cash (other than inchoate reimbursement obligations for which no demand has been made); provided, however, that all indemnities of the Debtors contained in this Agreement (including, without limitation, Annex B hereto) shall survive and remain operative and in full force and effect regardless of the termination of this Agreement.

15. **Power of Attorney; Further Assurances.**

(a) Each Debtor authorizes the Agent, and does hereby make, constitute and appoint the Agent and its officers, agents, successors or assigns with full power of substitution, as such Debtor's true and lawful attorney-in-fact, with power, in the name of the Agent or such Debtor, to, after the occurrence and during the continuance of an Event of Default, (i) endorse any note, checks, drafts, money orders or other instruments of payment (including payments payable under or in respect of any policy of insurance) in respect of the Collateral that may come into possession of the Agent; (ii) to sign and endorse any financing statement pursuant to the UCC or any invoice, freight or express bill, bill of lading, storage or warehouse receipts, drafts against debtors, assignments, verifications and notices in connection with accounts, and other documents relating to the Collateral; (iii) to pay or discharge taxes, liens, security interests or other encumbrances at any time levied or placed on or threatened against the Collateral; (iv) to demand, collect, receipt for, compromise, settle and sue for monies due in respect of the Collateral; (v) to transfer any Intellectual Property or provide licenses respecting any Intellectual Property; and (vi) generally, at the option of the Agent, and at the expense of the Debtors, at any time, or from time to time, to execute and deliver any and all documents and instruments and to do all acts and things which the Agent deems necessary to protect, preserve and realize upon the Collateral and the Security Interests granted therein in order to effect the intent of this Agreement and the Debentures all as fully and effectually as the Debtors might or could do; and each Debtor hereby ratifies all that said attorney shall lawfully do or cause to be done by virtue hereof. This power of attorney is coupled with an interest and shall be irrevocable for the term of this Agreement and thereafter as long as any of the Obligations shall be outstanding. The designation set forth herein shall be deemed to amend and supersede any inconsistent provision in the Organizational Documents or other documents or agreements to which any Debtor is subject or to which any Debtor is a party. Without limiting the generality of the foregoing, after the occurrence and during the continuance of an Event of Default, each Secured Party is specifically authorized to execute and file any applications for or instruments of transfer and assignment of any patents, trademarks, copyrights or other Intellectual Property with the United States Patent and Trademark Office and the United States Copyright Office.

(b) On a continuing basis, each Debtor will make, execute, acknowledge, deliver, file and record, as the case may be, with the proper filing and recording agencies in any jurisdiction, including, without limitation, the jurisdictions indicated on Schedule C attached hereto, all such instruments, and take all such action as may reasonably be deemed necessary or advisable, or as reasonably requested by the Agent, to perfect the Security Interests granted hereunder and otherwise to carry out the intent and purposes of this Agreement, or for assuring and confirming to the Agent the grant or perfection of a perfected security interest in all the Collateral under the UCC.

(c) Each Debtor hereby irrevocably appoints the Agent as such Debtor's attorney-in-fact, with full authority in the place and instead of such Debtor and in the name of such Debtor, from time to time in the Agent's discretion, to take any action and to execute any instrument which the Agent may deem necessary or advisable to perfect the security interests granted pursuant to this Agreement, including the filing, in its sole discretion, of one or more financing or continuation statements and amendments thereto, relative to any of the Collateral without the signature of such Debtor where permitted by law, which financing statements may (but need not) describe the Collateral as "all assets" or "all personal property" or words of like import, and ratifies all such actions taken by the Agent. This power of attorney is coupled with an interest and shall be irrevocable for the term of this Agreement and thereafter as long as any of the Obligations shall be outstanding.

16. **Notices.** All notices, requests, demands and other communications hereunder shall be subject to the notice provision of the Purchase Agreement (as such term is defined in the Debentures).

17. **Other Security.** To the extent that the Obligations are now or hereafter secured by property other than the Collateral or by the guarantee, endorsement or property of any other person, firm, corporation or other entity, then the Agent shall have the right, in its sole discretion, to pursue, relinquish, subordinate, modify or take any other action with respect thereto, without in any way modifying or affecting any of the Secured Parties' rights and remedies hereunder.

18. **Appointment of Agent.** Pursuant to Section 4.13 of the Purchase Agreement, the Secured Parties have appointed JGB Collateral LLC to act as their collateral agent ("JGB" or "Agent") for purposes of exercising any and all rights and remedies of the Secured Parties hereunder.

19. **Miscellaneous.**

(a) No course of dealing between the Debtors and the Secured Parties, nor any failure to exercise, nor any delay in exercising, on the part of the Secured Parties, any right, power or privilege hereunder or under the Debentures shall operate as a waiver thereof; nor shall any single or partial exercise of any right, power or privilege hereunder or thereunder preclude any other or further exercise thereof or the exercise of any other right, power or privilege.

(b) All of the rights and remedies of the Secured Parties with respect to the Collateral, whether established hereby or by the Debentures or by any other agreements, instruments or documents or by law shall be cumulative and may be exercised singly or concurrently.

(c) This Agreement, together with the exhibits and schedules hereto, contain the entire understanding of the parties with respect to the subject matter hereof and supersede all prior agreements and understandings, oral or written, with respect to such matters, which the parties acknowledge have been merged into this Agreement and the exhibits and schedules hereto. No provision of this Agreement may be waived, modified, supplemented or amended except in a written instrument signed, in the case of an amendment, by the Debtors and the Secured Parties holding 67% or more of the principal amount of Debentures then outstanding, or, in the case of a waiver, by the party against whom enforcement of any such waived provision is sought.

(d) If any term, provision, covenant or restriction of this Agreement is held by a court of competent jurisdiction to be invalid, illegal, void or unenforceable, the remainder of the terms, provisions, covenants and restrictions set forth herein shall remain in full force and effect and shall in no way be affected, impaired or invalidated, and the parties hereto shall use their commercially reasonable efforts to find and employ an alternative means to achieve the same or substantially the same result as that contemplated by such term, provision, covenant or restriction. It is hereby stipulated and declared to be the intention of the parties that they would have executed the remaining terms, provisions, covenants and restrictions without including any of such that may be hereafter declared invalid, illegal, void or unenforceable.

(e) No waiver of any default with respect to any provision, condition or requirement of this Agreement shall be deemed to be a continuing waiver in the future or a waiver of any subsequent default or a waiver of any other provision, condition or requirement hereof, nor shall any delay or omission of any party to exercise any right hereunder in any manner impair the exercise of any such right.

(f) This Agreement shall be binding upon and inure to the benefit of the parties and their successors and permitted assigns. The Company and the Guarantors may not assign this Agreement or any rights or obligations hereunder without the prior written consent of the Agent (other than by merger). Any Secured Party may assign any or all of its rights under this Agreement to any Person (as defined in the Purchase Agreement) to whom such Secured Party assigns or transfers any Obligations, provided such transferee agrees in writing to be bound, with respect to the transferred Obligations, by the provisions of this Agreement that apply to the "Secured Parties."

(g) Each party shall take such further action and execute and deliver such further documents as may be necessary or appropriate in order to carry out the provisions and purposes of this Agreement.

(h) Except to the extent mandatorily governed by the jurisdiction or situs where the Collateral is located, all questions concerning the construction, validity, enforcement and interpretation of this Agreement shall be governed by and construed and enforced in accordance with the internal laws of the State of New York, without regard to the principles of conflicts of law thereof. Except to the extent mandatorily governed by the jurisdiction or situs where the Collateral is located, each Debtor agrees that all proceedings concerning the interpretations, enforcement and defense of the transactions contemplated by this Agreement and the Debentures (whether brought against a party hereto or its respective affiliates, directors, officers, shareholders, partners, members, employees or agents) shall be commenced exclusively in the state and federal courts sitting in the City of New York, Borough of Manhattan. Except to the extent mandatorily governed by the jurisdiction or situs where the Collateral is located, each Debtor hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the City of New York, Borough of Manhattan for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, and hereby irrevocably waives, and agrees not to assert in any proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such proceeding is improper. Each party hereto hereby irrevocably waives personal service of process and consents to process being served in any such proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Agreement and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law. EACH PARTY HERETO 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 AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY.

(i) This Agreement may be executed in any number of counterparts, each of which when so executed shall be deemed to be an original and, all of which taken together shall constitute one and the same Agreement. In the event that any signature is delivered by .pdf via email transmission, such signature shall create a valid binding obligation of the party executing (or on whose behalf such signature is executed) the same with the same force and effect as if such .pdf via email signature were the original thereof.

(j) All Debtors shall jointly and severally be liable for the obligations of each Debtor to the Secured Parties hereunder.

(k) Each Debtor shall indemnify, reimburse and hold harmless the Agent and the Secured Parties and their respective partners, members, shareholders, officers, directors, employees and agents (and any other persons with other titles that have similar functions) (collectively, “**Indemnitees**”) from and against any and all losses, claims, liabilities, damages, penalties, suits, costs and expenses, of any kind or nature, (including fees relating to the cost of investigating and defending any of the foregoing) imposed on, incurred by or asserted against such Indemnitee in any way related to or arising from or alleged to arise from this Agreement or the Collateral, except any such losses, claims, liabilities, damages, penalties, suits, costs and expenses which result from the gross negligence or willful misconduct of the Indemnitee as determined by a final, nonappealable decision of a court of competent jurisdiction. This indemnification provision is in addition to, and not in limitation of, any other indemnification provision in the Debentures, the Purchase Agreement (as such term is defined in the Debentures) or any other agreement, instrument or other document executed or delivered in connection herewith or therewith.

(l) Nothing in this Agreement shall be construed to subject Agent or any Secured Party to liability as a partner in any Debtor or any of its direct or indirect subsidiaries that is a partnership or as a member in any Debtor or any of its direct or indirect subsidiaries that is a limited liability company, nor shall Agent or any Secured Party be deemed to have assumed any obligations under any partnership agreement or limited liability company agreement, as applicable, of any such Debtor or any of its direct or indirect subsidiaries or otherwise, unless and until any such Secured Party exercises its right to be substituted for such Debtor as a partner or member, as applicable, pursuant hereto.

(m) To the extent that the grant of the security interest in the Collateral and the enforcement of the terms hereof require the consent, approval or action of any partner or member, as applicable, of any Debtor or any direct or indirect subsidiary of any Debtor or compliance with any provisions of any of the Organizational Documents, the Debtors hereby grant such consent and approval and waive any such noncompliance with the terms of said documents.

[SIGNATURE PAGES FOLLOW]

BIONANO GENOMICS, INC.

By: /s/ R. Erik Holmlin
Name: R. Erik Holmlin
Title: President and CEO

BIODISCOVERY, LLC

By: /s/ R. Erik Holmlin
Name: R. Erik Holmlin
Title: Manager

LINEAGEN, INC.

By: /s/ R. Erik Holmlin
Name: R. Erik Holmlin
Title: President and CEO

PURIGEN BIOSYSTEMS, INC.

By: /s/ R. Erik Holmlin
Name: R. Erik Holmlin
Title: President and CEO

[SIGNATURE PAGE OF HOLDERS FOLLOWS]

AGENT:

JGB COLLATERAL LLC

By /s/ Brett Cohen

Name: Brett Cohen

Title: President

Name of Investing
Entity: _____

Signature of Authorized Signatory of Investing
Entity: _____

Name of Authorized
Signatory: _____

Title of Authorized
Signatory: _____

[SIGNATURE PAGE OF HOLDERS FOLLOWS]

ANNEX A
to
SECURITY
AGREEMENT

FORM OF ADDITIONAL DEBTOR JOINDER

Security Agreement dated as of [_____, 200__ made by
[_____
and its subsidiaries party thereto from time to time, as Debtors
to and in favor of
the Secured Parties identified therein (the "Security Agreement")

Reference is made to the Security Agreement as defined above; capitalized terms used herein and not otherwise defined herein shall have the meanings given to such terms in, or by reference in, the Security Agreement.

The undersigned hereby agrees that upon delivery of this Additional Debtor Joinder to the Secured Parties referred to above, the undersigned shall (a) be an Additional Debtor under the Security Agreement, (b) have all the rights and obligations of the Debtors under the Security Agreement as fully and to the same extent as if the undersigned was an original signatory thereto and (c) be deemed to have made the representations and warranties set forth therein as of the date of execution and delivery of this Additional Debtor Joinder. WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, THE UNDERSIGNED SPECIFICALLY GRANTS TO THE SECURED PARTIES A SECURITY INTEREST IN THE COLLATERAL AS MORE FULLY SET FORTH IN THE SECURITY AGREEMENT AND ACKNOWLEDGES AND AGREES TO THE WAIVER OF JURY TRIAL PROVISIONS SET FORTH THEREIN.

Attached hereto are supplemental and/or replacement Schedules to the Security Agreement, as applicable.

An executed copy of this Joinder shall be delivered to the Secured Parties, and the Secured Parties may rely on the matters set forth herein on or after the date hereof. This Joinder shall not be modified, amended or terminated without the prior written consent of the Secured Parties.

IN WITNESS WHEREOF, the undersigned has caused this Joinder to be executed in the name and on behalf of the undersigned.

Name of Additional Debtor

By:

Name:

Title:

Address:

Dated:

SUBSIDIARY GUARANTEE

SUBSIDIARY GUARANTEE, dated as of May 24, 2024 (this “Guarantee”), made by each of the signatories hereto (together with any other entity that may become a party hereto as provided herein, the “Guarantors”), in favor of the purchasers signatory (together with their permitted assigns, the “Purchasers”) to that certain Securities Purchase Agreement, dated as of the date hereof, between Bionano Genomics, Inc, a Delaware corporation (the “Company”) and the Purchasers (the “Purchase Agreement”).

WITNESSETH:

WHEREAS, pursuant to the Purchase Agreement, the Company has agreed to sell and issue to the Purchasers, and the Purchasers have agreed to purchase from the Company the Debentures, subject to the terms and conditions set forth therein; and

WHEREAS, each Guarantor will directly benefit from the extension of credit to the Company represented by the issuance of the Debentures; and

NOW, THEREFORE, in consideration of the premises and to induce the Purchasers to enter into the Purchase Agreement and to carry out the transactions contemplated thereby, each Guarantor hereby agrees with the Purchasers as follows:

1. **Definitions.** Unless otherwise defined herein, terms defined in the Purchase Agreement and used herein shall have the meanings given to them in the Purchase Agreement. The words “hereof,” “herein,” “hereto” and “hereunder” and words of similar import when used in this Guarantee shall refer to this Guarantee as a whole and not to any particular provision of this Guarantee, and Section and Schedule references are to this Guarantee unless otherwise specified. The meanings given to terms defined herein shall be equally applicable to both the singular and plural forms of such terms. The following terms shall have the following meanings:

“Guarantee” means this Subsidiary Guarantee, as the same may be amended, supplemented or otherwise modified from time to time.

“Obligations” means, in addition to all other costs and expenses of collection incurred by Purchasers in enforcing any of such Obligations and/or this Guarantee, all of the liabilities and obligations (primary, secondary, direct, contingent, sole, joint or several) due or to become due, or that are now or may be hereafter contracted or acquired, or owing to, of the Company or any Guarantor to the Purchasers, in each case arising under this Guarantee, the Debentures and any other Transaction Documents, whether now or hereafter existing, voluntary or involuntary, direct or indirect, absolute or contingent, liquidated or unliquidated, whether or not jointly owed with others, and whether or not from time to time decreased or extinguished and later increased, created or incurred, and all or any portion of such obligations or liabilities that are paid, to the extent all or any part of such payment is avoided or recovered directly or indirectly from any of the Purchasers as a preference, fraudulent transfer or otherwise as such obligations may be amended, supplemented, converted, extended or modified from time to time. Without limiting the generality of the foregoing, the term “Obligations” shall include, without limitation: (i) principal of, and interest on the Debentures and the loans extended pursuant thereto; (ii) any and all other fees, indemnities, costs, obligations and liabilities of the Company or any Guarantor from time to time under or in connection with this Guarantee, the Debentures and any other instruments, agreements or other documents executed and/or delivered in connection herewith or therewith; and (iii) all amounts (including but not limited to post-petition interest) in respect of the foregoing that would be payable but for the fact that the obligations to pay such amounts are unenforceable or not allowable due to the existence of a bankruptcy, reorganization or similar proceeding involving the Company or any Guarantor.

2. Guarantee.

(a) Guarantee.

(i) The Guarantors hereby, jointly and severally, unconditionally and irrevocably, guarantee to the Purchasers and their respective successors, indorsees, transferees and assigns, the prompt and complete payment and performance when due (whether at the stated maturity, by acceleration or otherwise) of the Obligations.

(ii) Anything herein or in any other Transaction Document to the contrary notwithstanding, the maximum liability of each Guarantor hereunder and under the other Transaction Documents shall in no event exceed the amount which can be guaranteed by such Guarantor under applicable federal and state laws, including laws relating to the insolvency of debtors, fraudulent conveyance or transfer or laws affecting the rights of creditors generally (after giving effect to the right of contribution established in Section 2(b)).

(iii) Each Guarantor agrees that the Obligations may at any time and from time to time exceed the amount of the liability of such Guarantor hereunder without impairing the guarantee contained in this Section 2 or affecting the rights and remedies of the Purchasers hereunder.

(iv) The guarantee contained in this Section 2 shall remain in full force and effect until all the Obligations and the obligations of each Guarantor under the guarantee contained in this Section 2 shall have been paid in full in cash (excluding inchoate reimbursement obligations for which no demand has been made).

(v) No payment made by the Company, any of the Guarantors, any other guarantor or any other Person or received or collected by the Purchasers from the Company, any of the Guarantors, any other guarantor or any other Person by virtue of any action or proceeding or any set-off or appropriation or application at any time or from time to time in reduction of or in payment of the Obligations shall be deemed to modify, reduce, release or otherwise affect the liability of any Guarantor hereunder which shall, notwithstanding any such payment (other than any payment made by such Guarantor in respect of the Obligations or any payment received or collected from such Guarantor in respect of the Obligations), remain liable for the Obligations up to the maximum liability of such Guarantor hereunder until the Obligations are paid in full in cash (excluding inchoate reimbursement obligations for which no demand has been made).

(vi) Notwithstanding anything to the contrary in this Guarantee, with respect to any defaulted non-monetary Obligations the specific performance of which by the Guarantors is not reasonably possible (e.g. the issuance of the Company's Common Stock), the Guarantors shall only be liable for making the Purchasers whole on a monetary basis for the Company's failure to perform such Obligations in accordance with the Transaction Documents.

(b) Right of Contribution. Subject to Section 2(c), each Guarantor hereby agrees that to the extent that a Guarantor shall have paid more than its proportionate share of any payment made hereunder, such Guarantor shall be entitled to seek and receive contribution from and against any other Guarantor hereunder which has not paid its proportionate share of such payment. Each Guarantor's right of contribution shall be subject to the terms and conditions of Section 2(c). The provisions of this Section 2(b) shall in no respect limit the obligations and liabilities of any Guarantor to the Purchasers and each Guarantor shall remain liable to the Purchasers for the full amount guaranteed by such Guarantor hereunder.

(c) No Subrogation. Notwithstanding any payment made by any Guarantor hereunder or any set-off or application of funds of any Guarantor by the Purchasers, no Guarantor shall be entitled to be subrogated to any of the rights of the Purchasers against the Company or any other Guarantor or any collateral security or guarantee or right of offset held by the Purchasers for the payment of the Obligations, nor shall any Guarantor seek or be entitled to seek any contribution or reimbursement from the Company or any other Guarantor in respect of payments made by such Guarantor hereunder, until all amounts owing to the Purchasers by the Company on account of the Obligations are paid in full in cash (excluding inchoate reimbursement obligations for which no demand has been made). If any amount shall be paid to any Guarantor on account of such subrogation rights at any time when all of the Obligations shall not have been paid in full, such amount shall be held by such Guarantor in trust for the Purchasers, segregated from other funds of such Guarantor, and shall, forthwith upon receipt by such Guarantor, be turned over to the Purchasers in the exact form received by such Guarantor (duly indorsed by such Guarantor to the Purchasers, if required), to be applied against the Obligations, whether matured or unmatured, in such order as the Purchasers may determine.

(d) Amendments, Etc. With Respect to the Obligations. Each Guarantor shall remain obligated hereunder notwithstanding that, without any reservation of rights against any Guarantor and without notice to or further assent by any Guarantor, any demand for payment of any of the Obligations made by the Purchasers may be rescinded by the Purchasers and any of the Obligations continued, and the Obligations, or the liability of any other Person upon or for any part thereof, or any collateral security or guarantee therefor or right of offset with respect thereto, may, from time to time, in whole or in part, be renewed, extended, amended, modified, accelerated, compromised, waived, surrendered or released by the Purchasers, and the Purchase Agreement and the other Transaction Documents and any other documents executed and delivered in connection therewith may be amended, modified, supplemented or terminated, in whole or in part, as the Purchasers may deem advisable from time to time, and any collateral security, guarantee or right of offset at any time held by the Purchasers for the payment of the Obligations may be sold, exchanged, waived, surrendered or released. The Purchasers shall have no obligation to protect, secure, perfect or insure any Lien at any time held by them as security for the Obligations or for the guarantee contained in this Section 2 or any property subject thereto.

(e) Guarantee Absolute and Unconditional. Each Guarantor waives any and all notice of the creation, renewal, extension or accrual of any of the Obligations and notice of or proof of reliance by the Purchasers upon the guarantee contained in this Section 2 or acceptance of the guarantee contained in this Section 2; the Obligations, and any of them, shall conclusively be deemed to have been created, contracted or incurred, or renewed, extended, amended or waived, in reliance upon the guarantee contained in this Section 2; and all dealings between the Company and any of the Guarantors, on the one hand, and the Purchasers, on the other hand, likewise shall be conclusively presumed to have been had or consummated in reliance upon the guarantee contained in this Section 2. Each Guarantor waives to the extent permitted by law diligence, presentment, protest, demand for payment and notice of default or nonpayment to or upon the Company or any of the Guarantors with respect to the Obligations. Each Guarantor understands and agrees that the guarantee contained in this Section 2 shall be construed as a continuing, absolute and unconditional guarantee of payment and performance without regard to (a) the validity or enforceability of the Purchase Agreement or any other Transaction Document, any of the Obligations or any other collateral security therefor or guarantee or right of offset with respect thereto at any time or from time to time held by the Purchasers, (b) any defense, set-off or counterclaim (other than a defense of payment or performance or fraud by Purchasers) which may at any time be available to or be asserted by the Company or any other Person against the Purchasers, or (c) any other circumstance whatsoever (with or without notice to or knowledge of the Company or such Guarantor) which constitutes, or might be construed to constitute, an equitable or legal discharge of the Company for the Obligations, or of such Guarantor under the guarantee contained in this Section 2, in bankruptcy or in any other instance. When making any demand hereunder or otherwise pursuing its rights and remedies hereunder against any Guarantor, the Purchasers may, but shall be under no obligation to, make a similar demand on or otherwise pursue such rights and remedies as they may have against the Company, any other Guarantor or any other Person or against any collateral security or guarantee for the Obligations or any right of offset with respect thereto, and any failure by the Purchasers to make any such demand, to pursue such other rights or remedies or to collect any payments from the Company, any other Guarantor or any other Person or to realize upon any such collateral security or guarantee or to exercise any such right of offset, or any release of the Company, any other Guarantor or any other Person or any such collateral security, guarantee or right of offset, shall not relieve any Guarantor of any obligation or liability hereunder, and shall not impair or affect the rights and remedies, whether express, implied or available as a matter of law, of the Purchasers against any Guarantor. For the purposes hereof, "demand" shall include the commencement and continuance of any legal proceedings.

(f) Reinstatement. The guarantee contained in this Section 2 shall continue to be effective, or be reinstated, as the case may be, if at any time payment, or any part thereof, of any of the Obligations is rescinded or must otherwise be restored or returned by the Purchasers upon the insolvency, bankruptcy, dissolution, liquidation or reorganization of the Company or any Guarantor, or upon or as a result of the appointment of a receiver, intervenor or conservator of, or trustee or similar officer for, the Company or any Guarantor or any substantial part of its property, or otherwise, all as though such payments had not been made.

(g) Payments. Each Guarantor hereby guarantees that payments hereunder will be paid to the Purchasers without set-off or counterclaim in U.S. dollars at the address set forth or referred to in the Signature Pages to the Purchase Agreement.

3. Representations and Warranties. Each Guarantor hereby makes the following representations and warranties to Purchasers as of the date hereof:

(a) Organization and Qualification. The Guarantor is a corporation or limited liability company, as applicable, duly organized, validly existing and in good standing under the laws of the applicable jurisdiction set forth on Schedule 1, with the requisite power and authority to own and use its properties and assets and to carry on its business as currently conducted. The Guarantor has no subsidiaries other than those identified as such on the Disclosure Schedules to the Purchase Agreement. The Guarantor is duly qualified to do business and is in good standing as a foreign corporation or limited liability company, as applicable, in each jurisdiction in which the nature of the business conducted or property owned by it makes such qualification necessary, except where the failure to be so qualified or in good standing, as the case may be, could not, individually or in the aggregate, (x) adversely affect the legality, validity or enforceability of any of this Guaranty in any material respect, (y) have a material adverse effect on the results of operations, assets, prospects or financial condition of the Guarantor or (z) adversely impair in any material respect the Guarantor's ability to perform fully on a timely basis its obligations under this Guaranty (a "Material Adverse Effect").

(b) Authorization; Enforcement. The Guarantor has the requisite power and authority to enter into and to consummate the transactions contemplated by this Guaranty, and otherwise to carry out its obligations hereunder. The execution and delivery of this Guaranty by the Guarantor and the consummation by it of the transactions contemplated hereby have been duly authorized by all requisite action on the part of the Guarantor. This Guaranty has been duly executed and delivered by the Guarantor and constitutes the valid and binding obligation of the Guarantor enforceable against the Guarantor in accordance with its terms, except as such enforceability may be limited by applicable bankruptcy, insolvency, reorganization, moratorium, liquidation or similar laws relating to, or affecting generally the enforcement of, creditors' rights and remedies or by other equitable principles of general application.

(c) No Conflicts. The execution, delivery and performance of this Guaranty by the Guarantor and the consummation by the Guarantor of the transactions contemplated thereby do not and will not (i) conflict with or violate any provision of its Certificate of Incorporation or By-laws or (ii) conflict with, constitute a default (or an event which with notice or lapse of time or both would become a default) under, or give to others any rights of termination, amendment, acceleration or cancellation of, any agreement, indenture or instrument to which the Guarantor is a party, or (iii) result in a violation of any law, rule, regulation, order, judgment, injunction, decree or other restriction of any court or governmental authority to which the Guarantor is subject (including Federal and State securities laws and regulations), or by which any material property or asset of the Guarantor is bound or affected, except in the case of each of clauses (ii) and (iii), such conflicts, defaults, terminations, amendments, accelerations, cancellations and violations as could not, individually or in the aggregate, have or result in a Material Adverse Effect. The business of the Guarantor is not being conducted in violation of any law, ordinance or regulation of any governmental authority, except for violations which, individually or in the aggregate, do not have a Material Adverse Effect.

(d) Consents and Approvals. The Guarantor is not required to obtain any consent, waiver, authorization or order of, or make any filing or registration with, any court or other federal, state, local, foreign or other governmental authority or other person in connection with the execution, delivery and performance by the Guarantor of this Guaranty.

(e) Purchase Agreement. The representations and warranties of the Company set forth in the Purchase Agreement as they relate to such Guarantor, each of which is hereby incorporated herein by reference, are true and correct in all material respects as of each time such representations are deemed to be made pursuant to such Purchase Agreement, and the Purchasers shall be entitled to rely on each of them as if they were fully set forth herein, provided that each reference in each such representation and warranty to the Company's knowledge shall, for the purposes of this Section 3, be deemed to be a reference to such Guarantor's knowledge.

4. Covenants.

(a) Each Guarantor covenants and agrees with the Purchasers that, from and after the date of this Guarantee until the Obligations shall have been paid in full in cash (excluding inchoate reimbursement obligations for which no demand has been made), such Guarantor shall take, and/or shall refrain from taking, as the case may be, each commercially reasonable action that is necessary to be taken or not taken, as the case may be, so that no Event of Default (as defined in the Debentures) is caused by the failure to take such action or to refrain from taking such action by such Guarantor.

(b) Until the Obligations shall have been paid in full in cash (excluding inchoate reimbursement obligations for which no demand has been made), each Guarantor will not directly or indirectly on or after the date of this Guarantee, except in each case to the extent permitted by the Purchase Agreement or the Debentures:

- i. enter into, create, incur, assume or suffer to exist any indebtedness for borrowed money of any kind, including but not limited to, a guarantee, on or with respect to any of its property or assets now owned or hereafter acquired or any interest therein or any income or profits therefrom;
- ii. enter into, create, incur, assume or suffer to exist any liens of any kind, on or with respect to any of its property or assets now owned or hereafter acquired or any interest therein or any income or profits therefrom;
- iii. amend its certificate of incorporation, bylaws or other charter documents so as to adversely affect any rights of any Purchaser;
- iv. repay, repurchase or offer to repay, repurchase or otherwise acquire more than a de minimis number of shares of its securities or debt obligations;
- v. pay cash dividends on any equity securities of the Company;

vi. enter into any transaction with any Affiliate of the Guarantor which would be required to be disclosed in any public filing of the Company with the Commission, unless such transaction is made on an arm's-length basis and expressly approved by a majority of the disinterested directors of the Company (even if less than a quorum otherwise required for board approval); or

vii. enter into any agreement with respect to any of the foregoing.

5. Miscellaneous.

(a) Amendments in Writing. None of the terms or provisions of this Guarantee may be waived, amended, supplemented or otherwise modified except in writing by the Purchasers.

(b) Notices. All notices, requests and demands to or upon the Purchasers or any Guarantor hereunder shall be effected in the manner provided for in the Purchase Agreement, provided that any such notice, request or demand to or upon any Guarantor shall be addressed to such Guarantor at its notice address set forth on Schedule 5(b).

(c) No Waiver By Course Of Conduct; Cumulative Remedies. The Purchasers shall not by any act (except by a written instrument pursuant to Section 5(a)), delay, indulgence, omission or otherwise be deemed to have waived any right or remedy hereunder or to have acquiesced in any default under the Transaction Documents or Event of Default. No failure to exercise, nor any delay in exercising, on the part of the Purchasers, any right, power or privilege hereunder shall operate as a waiver thereof. No single or partial exercise of any right, power or privilege hereunder shall preclude any other or further exercise thereof or the exercise of any other right, power or privilege. A waiver by the Purchasers of any right or remedy hereunder on any one occasion shall not be construed as a bar to any right or remedy which the Purchasers would otherwise have on any future occasion. The rights and remedies herein provided are cumulative, may be exercised singly or concurrently and are not exclusive of any other rights or remedies provided by law.

(d) Enforcement Expenses; Indemnification.

(i) Each Guarantor agrees to pay, or reimburse the Purchasers for, all their reasonable and documented costs and expenses incurred in collecting against such Guarantor under the guarantee contained in Section 2 or otherwise enforcing or preserving any rights under this Guarantee and the other Transaction Documents to which such Guarantor is a party, including, without limitation, the reasonable fees and disbursements of counsel to the Purchasers.

(ii) Each Guarantor agrees to pay, and to save the Purchasers harmless from, any and all liabilities with respect to, or resulting from any delay in paying, any and all stamp, excise, sales or other taxes which may be payable or determined to be payable in connection with any of the transactions contemplated by this Guarantee.

(iii) Each Guarantor agrees to pay, and to save the Purchasers harmless from, any and all liabilities, obligations, losses, damages, penalties, actions, judgments, suits, costs, expenses or disbursements of any kind or nature whatsoever with respect to the execution, delivery, enforcement, performance and administration of this Guarantee, in each case to the extent the Company would be required to do so pursuant to the Purchase Agreement.

(iv) The agreements in this Section shall survive repayment of the Obligations and all other amounts payable under the Purchase Agreement and the other Transaction Documents.

(e) Successor and Assigns. This Guarantee shall be binding upon the successors and assigns of each Guarantor and shall inure to the benefit of the Purchasers and their respective successors and assigns; provided that no Guarantor may assign, transfer or delegate any of its rights or obligations under this Guarantee without the prior written consent of the Purchasers.

(f) Set-Off. Each Guarantor hereby irrevocably authorizes the Purchasers at any time and from time to time while an Event of Default under any of the Transaction Documents shall have occurred and be continuing, without notice to such Guarantor or any other Guarantor, any such notice being expressly waived by each Guarantor, to set-off and appropriate and apply any and all deposits, credits, indebtedness or claims, in any currency, in each case whether direct or indirect, absolute or contingent, matured or unmatured, at any time held or owing by the Purchasers to or for the credit or the account of such Guarantor, or any part thereof in such amounts as the Purchasers may elect, against and on account of the obligations and liabilities of such Guarantor to the Purchasers hereunder and claims of every nature and description of the Purchasers against such Guarantor, in any currency, whether arising hereunder, under the Purchase Agreement, any other Transaction Document or otherwise, as the Purchasers may elect, whether or not the Purchasers have made any demand for payment and although such obligations, liabilities and claims may be contingent or unmatured. The Purchasers shall notify such Guarantor promptly of any such set-off and the application made by the Purchasers of the proceeds thereof, provided that the failure to give such notice shall not affect the validity of such set-off and application. The rights of the Purchasers under this Section are in addition to other rights and remedies (including, without limitation, other rights of set-off) which the Purchasers may have.

(g) Counterparts. This Guarantee may be executed by one or more of the parties to this Guarantee on any number of separate counterparts (including by telecopy), and all of said counterparts taken together shall be deemed to constitute one and the same instrument.

(h) Severability. Any provision of this Guarantee which is prohibited or unenforceable in any jurisdiction shall, as to such jurisdiction, be ineffective to the extent of such prohibition or unenforceability without invalidating the remaining provisions hereof, and any such prohibition or unenforceability in any jurisdiction shall not invalidate or render unenforceable such provision in any other jurisdiction.

(i) Section Headings. The Section headings used in this Guarantee are for convenience of reference only and are not to affect the construction hereof or be taken into consideration in the interpretation hereof.

(j) Integration. This Guarantee and the other Transaction Documents represent the agreement of the Guarantors and the Purchasers with respect to the subject matter hereof and thereof, and there are no promises, undertakings, representations or warranties by the Purchasers relative to subject matter hereof and thereof not expressly set forth or referred to herein or in the other Transaction Documents.

(k) Governing Laws. All questions concerning the construction, validity, enforcement and interpretation of this Guarantee shall be governed by and construed and enforced in accordance with the internal laws of the State of New York, without regard to the principles of conflicts of law thereof. Each of the Company and the Guarantors agree that all proceedings concerning the interpretations, enforcement and defense of the transactions contemplated by this Guarantee (whether brought against a party hereto or its respective affiliates, directors, officers, shareholders, partners, members, employees or agents) shall be commenced exclusively in the state and federal courts sitting in the City of New York, Borough of Manhattan. Each of the Company and the Guarantors hereby irrevocably submits to the exclusive jurisdiction of the state and federal courts sitting in the City of New York, Borough of Manhattan for the adjudication of any dispute hereunder or in connection herewith or with any transaction contemplated hereby or discussed herein, and hereby irrevocably waives, and agrees not to assert in any proceeding, any claim that it is not personally subject to the jurisdiction of any such court, that such proceeding is improper. Each party hereto hereby irrevocably waives personal service of process and consents to process being served in any such proceeding by mailing a copy thereof via registered or certified mail or overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Guarantee and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law. Each party hereto 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 Guarantee or the transactions contemplated hereby.

(l) Acknowledgements. Each Guarantor hereby acknowledges that:

(i) it has been advised by counsel in the negotiation, execution and delivery of this Guarantee and the other Transaction Documents to which it is a party;

(ii) the Purchasers have no fiduciary relationship with or duty to any Guarantor arising out of or in connection with this Guarantee or any of the other Transaction Documents, and the relationship between the Guarantors, on the one hand, and the Purchasers, on the other hand, in connection herewith or therewith is solely that of debtor and creditor; and

(iii) no joint venture is created hereby or by the other Transaction Documents or otherwise exists by virtue of the transactions contemplated hereby among the Guarantors and the Purchasers.

(m) Additional Guarantors. The Company shall cause each of its domestic subsidiaries formed or acquired on or subsequent to the date hereof to become a Guarantor for all purposes of this Guarantee by executing and delivering an Assumption Agreement in the form of Annex 1 hereto.

(n) Release of Guarantors. Each Guarantor will be released from all liability hereunder concurrently with the repayment in full in cash of all amounts owed under the Purchase Agreement, the Debentures and the other Transaction Documents (excluding inchoate reimbursement obligations for which no demand has been made).

(o) Seniority. The Obligations of each of the Guarantors hereunder rank senior in priority to any other Indebtedness (as defined in the Purchase Agreement) of such Guarantor.

(p) WAIVER OF JURY TRIAL. **EACH GUARANTOR AND, BY ACCEPTANCE OF THE BENEFITS HEREOF, THE PURCHASERS, HEREBY IRREVOCABLY AND UNCONDITIONALLY WAIVE TRIAL BY JURY IN ANY LEGAL ACTION OR PROCEEDING RELATING TO THIS GUARANTEE AND FOR ANY COUNTERCLAIM THEREIN.**

(Signature Pages Follow)

BIODISCOVERY, LLC

By: /s/ R. Erik Holmlin
Name: R. Erik Holmlin
Title: Manager

LINEAGEN, INC.

By: /s/ R. Erik Holmlin
Name: R. Erik Holmlin
Title: President and CEO

PURIGEN BIOSYSTEMS, INC.

By: /s/ R. Erik Holmlin
Name: R. Erik Holmlin
Title: President and CEO

GUARANTORS

The following are the names, notice addresses and jurisdiction of organization of each Guarantor.

GUARANTOR	JURISDICTION OF INCORPORATION	COMPANY OWNED BY PERCENTAGE (Directly or Indirectly)
BioDiscovery, LLC	California	100%
Lineagen, Inc.	Delaware	100%
Purigen Biosystems, Inc.	Delaware	100%

Annex 1 to
SUBSIDIARY GUARANTEE

ASSUMPTION AGREEMENT, dated as of ____, ____ made by _____, a _____ corporation (the "Additional Guarantor"), in favor of the Purchasers pursuant to the Purchase Agreement referred to below. All capitalized terms not defined herein shall have the meaning ascribed to them in such Purchase Agreement.

WITNESSETH:

WHEREAS, Bionano Genomics, Inc., a Delaware corporation (the "Company") and the Purchasers have entered into a Securities Purchase Agreement, dated as of May __, 2024 (as amended, supplemented or otherwise modified from time to time, the "Purchase Agreement");

WHEREAS, in connection with the Purchase Agreement, the Subsidiaries of the Company (other than the Additional Guarantor) have entered into the Subsidiary Guarantee, dated as of May __, 2024 (as amended, supplemented or otherwise modified from time to time, the "Guarantee") in favor of the Purchasers;

WHEREAS, the Purchase Agreement requires the Additional Guarantor to become a party to the Guarantee; and

WHEREAS, the Additional Guarantor has agreed to execute and deliver this Assumption Agreement in order to become a party to the Guarantee;

NOW, THEREFORE, IT IS AGREED:

1. Guarantee. By executing and delivering this Assumption Agreement, the Additional Guarantor, as provided in Section 5(m) of the Guarantee, hereby becomes a party to the Guarantee as a Guarantor thereunder with the same force and effect as if originally named therein as a Guarantor and, without limiting the generality of the foregoing, hereby expressly assumes all obligations and liabilities of a Guarantor thereunder. The information set forth in Annex 1 hereto is hereby added to the information set forth in Schedule 1 to the Guarantee. The Additional Guarantor hereby represents and warrants that each of the representations and warranties contained in Section 3 of the Guarantee is true and correct on and as the date hereof as to such Additional Guarantor (after giving effect to this Assumption Agreement) as if made on and as of such date.

2. Governing Law. THIS ASSUMPTION AGREEMENT SHALL BE GOVERNED BY, AND CONSTRUED AND INTERPRETED IN ACCORDANCE WITH, THE LAW OF THE STATE OF NEW YORK.

IN WITNESS WHEREOF, the undersigned has caused this Assumption Agreement to be duly executed and delivered as of the date first above written.

[ADDITIONALGUARANTOR]

By: _____
Name:
Title:

PLACEMENT AGENCY AGREEMENT

May 24, 2024

Bionano Genomics, Inc.
9540 Towne Centre Drive
Suite 100
San Diego, California 92121

Ladies and Gentlemen:

This agreement (the "Agreement") constitutes the agreement between Canaccord Genuity LLC (the "Placement Agent") and Bionano Genomics, Inc., a Delaware corporation (the "Company"), pursuant to which the Placement Agent shall serve as the exclusive placement agent for the Company, on a "reasonable best efforts" basis, in connection with the proposed placement (the "Placement" or the "Financing") of shares of common stock (the "Shares") of the Company and Senior Secured Convertible Debentures (the "Debentures" and together with the Shares, the "Securities") of the Company. The terms of the Placement and the Securities shall be mutually agreed upon by the Company and the purchasers (each, a "Purchaser" and collectively, the "Purchasers") and nothing herein constitutes that the Placement Agent would have the power or authority to bind the Company or any Purchaser or an obligation for the Company to issue any Securities or complete the Placement. This Agreement and the documents executed and delivered by the Company and the Purchasers in connection with the Placement, including but not limited to the Purchase Agreement (as defined below), shall be collectively referred to herein as the "Transaction Documents." The date of the closing of the Placement shall be referred to herein as the "Closing Date." The Company expressly acknowledges and agrees that the Placement Agent's obligations hereunder are on a reasonable best efforts basis only and that the execution of this Agreement does not constitute a commitment by the Placement Agent to purchase the Securities and does not ensure the successful placement of the Securities or any portion thereof or the success of the Placement Agent with respect to securing any other financing on behalf of the Company. The sale of the Securities to any Purchaser will be evidenced by a securities purchase agreement (the "Purchase Agreement") between the Company and such Purchaser in a form reasonably acceptable to the Company and the Placement Agent. Capitalized terms that are not otherwise defined herein have the meanings given to such terms in the Purchase Agreement. Prior to the signing of any Purchase Agreement, officers of the Company will be available to answer inquiries from prospective Purchasers.

SECTION 1. REPRESENTATIONS AND WARRANTIES OF THE COMPANY; COVENANTS OF THE COMPANY.

A. Representations and Warranties of the Company. Each of the representations and warranties (together with any related disclosure schedules thereto) and covenants made by the Company to the Purchasers in the Purchase Agreement in connection with the Placement is hereby incorporated herein by reference into this Agreement (as though fully restated herein) and is, as of the date of this Agreement and as of the Closing Date, hereby made to, and in favor of, the Placement Agent. In addition to the foregoing, the Company represents and warrants that:

1. The Company acknowledges and agrees that in rendering its services hereunder, the Placement Agent will be using and relying upon, without any independent investigation or verification thereof, all information that is or will be furnished to the Placement Agent by or on behalf of the Company and on publicly available information, and the Placement Agent will not in any respect be responsible for the accuracy or completeness of any of the foregoing kinds of information, and that the Placement Agent will not undertake to make an independent appraisal of any of the assets of the Company. The Company understands that in rendering services hereunder the Placement Agent does not provide accounting, legal or tax advice and will rely upon the advice of counsel to the Company and other advisors to the Company as to accounting, legal, tax and other matters relating to the Financing or any other transaction contemplated by this Agreement.

2. The Company has prepared an investor presentation relating to the offering of the Securities (the "Offering Presentation"). The Offering Presentation, together with any amendments

or supplements thereto, documents incorporated therein by reference and any other information provided by the Company in due diligence or otherwise, is hereinafter referred to as the "Offering Materials". The Company acknowledges and agrees that the Offering Materials are its own work product, that the Placement Agent and its affiliates may rely, without independent verification, upon the accuracy and completeness of all information furnished by the Company to the Placement Agent for use in connection with the Placement and that neither the Placement Agent nor any of its affiliates assumes any responsibility therefor. The Offering Materials will not, as of each date the Offering Materials are delivered to a potential purchaser, contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements made therein, in the light of the circumstances under which they were made, not misleading.

3. This Agreement has been duly authorized, executed and delivered by the Company.

4. The Company's public reports filed with the Securities and Exchange Commission (the "Commission"), and all subsequent reports (collectively, the "Exchange Act Reports") that have been filed with the Commission or sent to stockholders, pursuant to Section 13 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), did not when filed, and taken as a whole and as amended to the date hereof do not as of the date hereof contain any untrue statement of a material fact or omit to state a material fact necessary in order to make the statements made therein, in the light of the circumstances under which they were made, not misleading. Such documents, when they were filed with the Commission, conformed to the requirements of the Exchange Act and the rules and regulations of the Commission thereunder.

5. Neither the Company nor any person acting on its behalf has made any offers or sales of securities of the same or a similar class as the Securities during the six-month period ending as of the date hereof and no such offers or sales are currently being made, in each case that would be integrated with the offer and sale of the Securities pursuant to Rule 502(a) under the Securities Act. Neither the Company nor any other person acting on its behalf will, directly or indirectly, offer or sell any securities of the same or similar class as the Securities, or take any other action, so as to cause the offer and sale of the Securities to fail to be entitled to an exemption from the registration requirements of the Securities Act.

6. The Company shall not, directly or indirectly (except through the Placement Agent), sell or offer to sell any of the Securities or any substantially similar security during the term of the Placement Agent's appointment. Any sale or disposition of such Securities or similar securities during the term of such appointment will be deemed to be as if such sale or disposition were undertaken by the Placement Agent directly.

B. Covenants of the Company. The Company covenants and agrees with the Placement Agent that:

1. The Company (i) will not solicit offers to buy, or offer or sell, the Securities by any form of general solicitation or general advertising (as those terms are used in Regulation D under the Securities Act), or in any manner involving a public offering within the meaning of Section 4(a)(2) of the Securities Act, and (ii) will solicit offers for Securities only from, and will offer Securities only to, investors that it reasonably believes are institutional "accredited investors" within the meaning of Rule 501(a) under the Securities Act or "qualified institutional buyers" within the meaning of Rule 144A under the Securities Act. In addition, the Company will take all other necessary steps to ensure that the offering and sale of the Securities are exempt from the registration requirements of the Securities Act and in compliance with all applicable state securities laws.

2. The Company shall extend to all prospective purchasers the opportunity, prior to the Closing Date, to ask questions of, and receive answers from, the Company concerning the Securities and the terms and conditions of the offering thereof and to obtain any information that such prospective purchasers may consider reasonably necessary in making an informed investment decision or to verify the accuracy of the information set forth in the Offering Materials, to the extent the Company possesses the same or can acquire it without unreasonable effort or expense.

3. If any event occurs or condition exists as a result of which the Offering Materials or the information contained in the Company's Exchange Act Reports would include an 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 when the Offering

Materials are delivered to a Purchaser or such filings were made, as the case may be, not misleading, or if, in the opinion of the Placement Agent or the Company, it is necessary at any time to amend or supplement the Offering Materials or file a subsequent Exchange Act Report, as the case may be, to comply with applicable law, the Company will immediately notify the Placement Agent of any such event, condition or opinion of the Company and shall prepare an amendment or supplement to the Offering Materials or Exchange Act Report, as the case may be, that will correct such statement or omission or effect such compliance and will supply such amended or supplemented Offering Materials or Exchange Act Report, as the case may be, to the Placement Agent.

4. Neither this Agreement nor any written or oral advice rendered by the Placement Agent in connection with this Agreement or the Placement may be disclosed to any third party or circulated or referred to publicly without the prior written consent of the Placement Agent.

5. If requested by the Placement Agent, the Company will deliver to the Placement Agent (or its agent), on the date of execution of this Agreement, a properly completed and executed Certification Regarding Beneficial Owners of Legal Entity Customers, together with copies of identifying documentation, and the Company undertakes to provide such additional supporting documentation as the Placement Agent may reasonably request in connection with the verification of the foregoing Certification.

SECTION 2. COMPENSATION/PAYMENT FOR SERVICES PERFORMED; EXPENSES. In consideration for the Placement Agent's services hereunder, the Company shall compensate the Placement Agent as follows:

A. The Placement Agent will charge the Company a placement fee (the "Placement Fee") of 6.0% of the aggregate face value of the Debentures issued by the Company from the sale of the Securities in the Placement. The Placement Fee shall be payable in immediately available funds on the Closing Date.

B. The Company understands that a Purchaser may be interested in providing other financing for the benefit of the Company. The Company agrees to compensate the Placement Agent in the same manner and in the same percentage as the Placement Fee provided in Section 2(A) above of the amount of any financing from such Purchaser or any affiliate of such Purchaser which, within 12 months from the closing of the Financing, may be committed to or paid to the Company, or to any other person or entity that currently is or hereafter may be affiliated with, associated with, owned by or owning, or controlled by, controlling or under common control with the Company.

C. The Company shall, whether or not any sale of Securities is consummated, reimburse the Placement Agent for any out-of-pocket expenses incurred in connection with the Placement Agent's obligations hereunder, including without limitation, (1) travel expenses and (2) the professional fees and expenses incurred by the Placement Agent, including reasonable fees and expenses of counsel and fees related to background checks and review, including fees for professional advice obtained in connection therewith; provided that such professional fees and expenses reimbursable under this Section 2(C) shall not exceed \$100,000 in the aggregate without the Company's prior written consent, which consent shall not be unreasonably withheld.

D. The right of the Placement Agent to receive the fees and reimbursements set forth in this Section 2 shall survive the termination of this Agreement.

SECTION 3. INDEMNIFICATION. The Company agrees to the indemnification and other agreements set forth in the Indemnification Provisions (the "Indemnification") attached hereto as Attachment A, the provisions of which are incorporated herein by reference and shall survive the termination or expiration of this Agreement.

SECTION 4. CLOSING.

A. On each Closing Date, the Company shall deliver to the Placement Agent:

1. A copy of each officer's certificate delivered by the Company to a Purchaser on the Closing Date pursuant to the applicable Purchase Agreement.

2. The opinion of counsel to the Company delivered to any Purchaser in connection with the closing contemplated by each Purchase Agreement and addressed to the Placement Agent.

3. Copies of any other documents delivered to a Purchaser on the Closing Date as the Placement Agent may reasonably request in form reasonably satisfactory to the Placement Agent.

B. The Purchase Agreement entered into between the Company and each of the Purchasers shall be in full force and effect.

SECTION 5. GOVERNING LAW. This Agreement will be governed by, and construed in accordance with, the laws of the State of New York applicable to agreements made and to be performed entirely in such State, without regard to the conflicts of laws principles thereof. This Agreement may not be assigned by either party without the prior written consent of the other party. This Agreement shall be binding upon and inure to the benefit of the parties hereto, and their respective successors and permitted assigns. Any right to trial by jury with respect to any dispute arising under this Agreement or any transaction or conduct in connection herewith is waived. Any dispute arising under this Agreement may be brought into the courts of the State of New York or into the federal court located in New York, New York and, by execution and delivery of this Agreement, the Company hereby accepts for itself and in respect of its property, generally and unconditionally, the jurisdiction of aforesaid courts. Each party hereto hereby irrevocably waives personal service of process and consents to process being served in any such suit, action or proceeding by delivering a copy thereof via overnight delivery (with evidence of delivery) to such party at the address in effect for notices to it under this Agreement and agrees that such service shall constitute good and sufficient service of process and notice thereof. Nothing contained herein shall be deemed to limit in any way any right to serve process in any manner permitted by law. The Company agrees that a final judgment in any such action, proceeding or counterclaim brought in any such court shall be conclusive and binding upon the Company and may be enforced in any other courts to the jurisdiction of which the Company is or may be subject, by suit upon such judgment. If either party shall commence an action or proceeding to enforce any provisions of a Transaction Document, then the prevailing party in such action or proceeding shall be reimbursed by the other party for its attorney's fees and other costs and expenses incurred with the investigation, preparation and prosecution of such action or proceeding. This paragraph shall survive any termination of this Agreement, in whole or in part.

SECTION 6. PATRIOT ACT COMPLIANCE. The Placement Agent hereby notifies the Company that pursuant to the requirements of the USA PATRIOT ACT (Title III of Pub. L. 107-56 (signed into law October 26, 2001)) (the "Patriot Act"), the Placement Agent is required to obtain, verify and record information that identifies the Company, which information includes the name and address of the Company and other information that will allow the Placement Agent to identify the Company in accordance with the Patriot Act. In that connection, the Placement Agent may also request corporate formation documents, or other forms of identification, to verify information provided.

SECTION 7. TERMINATION. The Placement Agent's services hereunder may be terminated with or without cause by either the Company or the Placement Agent at any time and without liability or continuing obligation to the Placement Agent or the Company, except (a) for any compensation earned or expenses incurred by the Placement Agent in connection with this Agreement to the date of termination, and (b) for the Placement Agent's right to fees pursuant to this Agreement for any private placement of any securities substantially similar to the Securities effected within one (1) year of such termination of this Agreement with investors introduced to the Company during the term of this Agreement, and solely to the extent there has been no closing of the Placement prior to the termination of this Agreement.

SECTION 8. MISCELLANEOUS.

A. If any provision of this Agreement is determined to be invalid or unenforceable in any respect, such determination will not affect such provision in any other respect or any other provision of this Agreement, which will remain in full force and effect. This Agreement may not be amended or otherwise modified or waived except by an instrument in writing signed by both Placement Agent and the Company. The representations, warranties, agreements

and covenants contained herein shall survive the closing of the Placement and delivery of the Securities. This Agreement may be executed in two or more counterparts, all of which when taken together shall be considered one and the same agreement and shall become effective when counterparts have been signed by each party and delivered to the other party, it being understood that both parties need not sign the same counterpart. In the event that any signature is delivered by facsimile transmission or a .pdf format file, such signature shall create a valid and binding obligation of the party executing (or on whose behalf such signature is executed) with the same force and effect as if such facsimile or .pdf signature page were an original thereof.

B. The Placement Agent is being retained to serve as placement agent solely to the Company, and it is agreed that the engagement of the Placement Agent is not, and shall not be deemed to be, on behalf of, and is not intended to, and will not, confer rights or benefits upon any shareholder or creditor of the Company or upon any other person or entity. No one other than the Company is authorized to rely upon this engagement of the Placement Agent or any statements, conduct or advice of the Placement Agent, and no one other than the Company is intended to be a beneficiary of this engagement. All opinions, advice or other assistance (whether written or oral) given by the Placement Agent in connection with this engagement are intended solely for the benefit and use of the Company and will be treated by the Company as confidential, and no opinion, advice or other assistance of the Placement Agent shall be used for any other purpose or reproduced, disseminated, quoted or referred to at any time, in any manner or for any purpose, nor shall any public or other references to the Placement Agent (or to such opinions, advice or other assistance) be made without the express prior written consent of the Placement Agent. The Company covenants and agrees that it will include a provision in the Purchase Agreement whereby each Purchase a party thereto shall: (a) disclaim any reliance upon the Placement Agent or its officers, directors, employees, attorneys or affiliates with respect to the negotiation, execution or performance of such Purchase Agreement or any representation or warranty made in, in connection with, or as an inducement to such Purchase Agreement; (b) agree that all claims, obligations, liabilities, demands or causes of action that may be based upon, arise under or relate to the Purchase Agreement or its negotiation, execution or performance may be made only against the Company; (c) waive and release all liabilities, claims, demands, causes of action and obligations against the Placement Agent or its officers, directors, employees, attorneys or affiliates in connection with the Purchase Agreement and any transaction contemplated thereby; and (d) agree that the Placement Agent will be a third party beneficiary of such provision.

C. The Company agrees that, following the closing or consummation of a Financing, the Placement Agent has the right to place an announcement on its website and/or advertisements in financial and other newspapers and journals at its own expense, describing its services to the Company and a general description of the Financing. In addition, the Company agrees to include in any press release or public announcement announcing a Financing a reference to the Placement Agent's role as placement agent to the Company with respect to such Financing, provided that the Company will submit a copy of any such press release or public announcement to the Placement Agent for its prior approval, which approval shall not be unreasonably withheld or delayed.

D. The Company represents and warrants that there are no brokers, representatives or other persons that have an interest in any compensation due to the Placement Agent from any transaction contemplated herein. The Company acknowledges and agrees that the Placement Agent is a full-service securities firm which may be engaged at various times, either directly or through its affiliates, in various activities including, without limitation, securities trading, investment management, financing and brokerage activities and financial advisory services for companies, governments and individuals. In the ordinary course of these activities, which may conflict with the interests of the Company, the Placement Agent and its affiliates from time-to-time may: (i) effect transactions for its own account or the accounts of its clients and hold long or short positions in debt or equity securities or other financial instruments (or related derivative instruments) of the Company or other parties which may be the subject of this engagement or any transaction contemplated hereby; (ii) have had confidential discussions with, and provided information to, clients, potential clients, financial investors or other parties in the Company's industry (including competitors) regarding various market and strategic matters (including potential strategic alternatives or transactions that may involve the Company); and/or (iii) have performed, or sought to perform, various investment banking, financial advisory or other services for clients who may have conflicting interests with respect to the Company.

If the foregoing correctly sets forth the entire understanding and agreement between the Placement Agent and the Company, please so indicate in the space provided for that purpose below and return an executed copy to us, whereupon this Agreement shall constitute a binding agreement as of the date first above written.

CANACCORD GENUITY LLC

By: /s/ Jennifer Pardi

Name: Jennifer Pardi

Title: Managing Director

The foregoing Agreement is hereby confirmed and accepted as of the date first above written.

BIONANO GENOMICS, INC.

By: /s/ R. Erik Holmlin

Name: R. Erik Holmlin

Title: President and CEO

**INDEMNIFICATION, CONTRIBUTION AND
LIMITATION OF LIABILITY PROVISIONS**

In the event that Canaccord Genuity LLC or any of its affiliates (“Canaccord Genuity”), the respective shareholders, directors, officers, agents or employees of Canaccord Genuity, or any other person controlling Canaccord Genuity (collectively, together with Canaccord Genuity, “Indemnified Persons”) becomes involved in any capacity in any action, claim, suit, investigation or proceeding, actual or threatened, brought by or against any person, including stockholders of Bionano Genomics, Inc. (the “Company”), in connection with or as a result of the engagement contemplated by the letter agreement to which this Attachment A is attached (the “engagement”), the Company will reimburse such Indemnified Person for its legal and other expenses (including without limitation the costs and expenses incurred in connection with investigating, preparing for and responding to third party subpoenas or enforcing the engagement) incurred in connection therewith as such expenses are incurred; provided, however, that if it is finally determined by a court or arbitral tribunal in any such action, claim, suit, investigation or proceeding that any loss, claim damage or liability of Canaccord Genuity or any other Indemnified Person has resulted primarily and directly from the gross negligence or willful misconduct of Canaccord Genuity in performing the services that are the subject of the engagement, then Canaccord Genuity will repay such portion of reimbursed amounts that is attributable to expenses incurred in relation to the act or omission of Canaccord Genuity or any other Indemnified Person which is the subject of such determination. The Company will also indemnify and hold harmless each Indemnified Person from and against any losses, claims, damages or liabilities (including actions or proceedings in respect thereof) (collectively, “Losses”) related to or arising out of the engagement, except to the extent any such Losses are finally determined by a court or arbitral tribunal to have resulted primarily and directly from the willful misconduct or gross negligence of Canaccord Genuity in performing the services that are the subject of the engagement.

If such indemnification is for any reason not available or insufficient to hold an Indemnified Person harmless (except by reason of the gross negligence or willful misconduct of Canaccord Genuity), the Company and Canaccord Genuity shall contribute to the Losses involved in such proportion as is appropriate to reflect the relative benefits received (or anticipated to be received) by the Company, on the one hand, and by Canaccord Genuity, on the other hand, with respect to the engagement or, if such allocation is determined by a court or arbitral tribunal to be unavailable, in such proportion as is appropriate to reflect other equitable considerations such as the relative fault of the Company on the one hand and of Canaccord Genuity on the other hand; provided, however, that in no event shall the amounts to be contributed by Canaccord Genuity exceed the fees actually received by Canaccord Genuity in the engagement. Relative benefits to the Company, on the one hand, and Canaccord Genuity, on the other hand, shall be deemed to be in the same proportion as (i) the total value paid or proposed to be paid or received or proposed to be received by the Company or its security holders, as the case may be, pursuant to the transaction(s), whether or not consummated, contemplated by the engagement, bears to (ii) all fees actually received by Canaccord Genuity in the engagement.

The Company also agrees that neither Canaccord Genuity nor any other Indemnified Person shall have any liability to the Company or any person asserting claims on behalf or in right of the Company in connection with or as a result of the engagement or any matter referred to in the engagement, except to the extent that any Losses incurred by the Company are finally determined by a court or arbitral tribunal to have resulted primarily and directly from the willful misconduct or gross negligence of Canaccord Genuity in performing the services that are the subject of the engagement. In no event shall Canaccord Genuity or any other Indemnified Person be responsible for any indirect, special or consequential damages, even if advised of the possibility thereof.

In the event that an Indemnified Person is requested or required to appear as a witness in any action brought by or on behalf of or against the Company relating to the engagement in which such Indemnified Person is not named as a defendant, the Company agrees to promptly reimburse Canaccord on a monthly basis for all expenses incurred by it in connection with such Indemnified Person’s appearing and preparing to appear as such a witness, including, without limitation, the reasonable fees and disbursements of its legal counsel.

The Company’s obligations hereunder shall be in addition to any rights that any Indemnified Person may have at common law or otherwise. The letter to which this Attachment A is attached, including this Attachment A, and any other agreements relating to the engagement shall be governed by and construed in accordance with the laws of the State of New York, applicable to contracts made and to be performed therein and, in connection therewith, the parties

hereto consent to the exclusive jurisdiction of the state and federal courts of the State of New York, located in Manhattan. Notwithstanding the foregoing, solely for purposes of enforcing the Company's obligations hereunder, the Company consents to personal jurisdiction, service and venue in any court proceeding in which any claim subject to this Attachment A is brought by or against any Indemnified Person. CANACCORD GENUITY HEREBY AGREES, AND THE COMPANY HEREBY AGREES ON ITS OWN BEHALF AND, TO THE EXTENT PERMITTED BY APPLICABLE LAW, ON BEHALF OF ITS SECURITY HOLDERS, TO WAIVE ANY RIGHT TO TRIAL BY JURY WITH RESPECT TO ANY CLAIM, COUNTER-CLAIM OR ACTION ARISING OUT OF THE ENGAGEMENT OR CANACCORD GENUITY'S PERFORMANCE OF SERVICES THAT ARE THE SUBJECT THEREOF.

The provisions of this Attachment A shall apply to the engagement (including related activities prior to the date hereof) and any modification thereof and shall remain in full force and effect regardless of the completion or termination of the engagement. If any term, provision, covenant or restriction herein is held by a court of competent jurisdiction to be invalid, void or unenforceable or against public policy, the remainder of the terms, provisions and restrictions contained herein shall remain in full force and effect and shall in no way be affected, impaired or invalidated.

REGISTRATION RIGHTS AGREEMENT

This Registration Rights Agreement (this “Agreement”) is made and entered into as of May 24, 2024, between Bionano Genomics, Inc., a Delaware corporation (the “Company”), and each of the several purchasers signatory hereto (each such purchaser, a “Purchaser” and, collectively, the “Purchasers”).

This Agreement is made pursuant to the Securities Purchase Agreement, dated as of the date hereof, between the Company and each Purchaser (the “Purchase Agreement”).

The Company and each Purchaser hereby agrees as follows:

1. Definitions.

Capitalized terms used and not otherwise defined herein that are defined in the Purchase Agreement shall have the meanings given such terms in the Purchase Agreement. As used in this Agreement, the following terms shall have the following meanings:

“Advice” shall have the meaning set forth in Section 6(c).

“Effectiveness Date” means, with respect to the Initial Registration Statement required to be filed hereunder, the 45th calendar day following the date hereof (or, in the event of a review by the Commission, the 60th calendar day following the date hereof) and with respect to any additional Registration Statements which may be required pursuant to Section 2(c) or Section 3(c), the 30th calendar day following the date on which an additional Registration Statement is required to be filed hereunder (or, in the event of a review by the Commission, the 45th calendar day following the date such additional Registration Statement is required to be filed hereunder); provided, however, that in the event the Company is notified by the Commission that one or more of the above Registration Statements will not be reviewed or is no longer subject to further review and comments, the Effectiveness Date as to such Registration Statement shall be the tenth Trading Day following the date on which the Company is so notified if such date precedes the dates otherwise required above, provided, further, if such Effectiveness Date falls on a day that is not a Trading Day, then the Effectiveness Date shall be the next succeeding Trading Day.

“Effectiveness Period” shall have the meaning set forth in Section 2(a).

“Event” shall have the meaning set forth in Section 2(d).

“Event Date” shall have the meaning set forth in Section 2(d).

“Filing Date” means, with respect to the Initial Registration Statement required hereunder, the 15th calendar day following the date hereof and, with respect to any additional Registration Statements which may be required pursuant to Section 2(c) or Section 3(c), the earliest practical date on which the Company is permitted by SEC Guidance to file such additional Registration Statement related to the Registrable Securities.

“Holder” or “Holders” means the holder or holders, as the case may be, from time to time of Registrable Securities.

“Indemnified Party” shall have the meaning set forth in Section 5(c).

“Indemnifying Party” shall have the meaning set forth in Section 5(c).

“Initial Registration Statement” means the initial Registration Statement filed pursuant to this Agreement.

“Losses” shall have the meaning set forth in Section 5(a).

“Plan of Distribution” shall have the meaning set forth in Section 2(a).

“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 promulgated by the Commission pursuant to the Securities Act), as amended or supplemented by any prospectus supplement, with respect to the terms of the offering of any portion of the Registrable Securities covered by a Registration Statement, 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.

“Registrable Securities” means, as of any date of determination, (a) all of the Shares, (b) all of the shares of Common Stock then issued and issuable upon conversion in full of the Debentures (assuming on such date the Debentures are converted in full without regard to any conversion limitations therein), (c) any additional shares of Common Stock issued and issuable in connection with any anti-dilution provisions in the Debentures (without giving effect to any limitations on conversion set forth in the Debentures) and (d) any securities issued or then issuable upon any stock split, dividend or other distribution, recapitalization or similar event with respect to the foregoing; provided, however, that any such Registrable Securities shall cease to be Registrable Securities (and the Company shall not be required to maintain the effectiveness of any, or file another, Registration Statement hereunder with respect thereto) for so long as (a) a Registration Statement with respect to the sale of such Registrable Securities is declared effective by the Commission under the Securities Act and such Registrable Securities have been disposed of by the Holder in accordance with such effective Registration Statement, (b) such Registrable Securities have been previously sold in accordance with Rule 144, or (c) such securities become eligible for resale without volume or manner-of-sale restrictions and without current public information pursuant to Rule 144 as set forth in a written opinion letter to such effect, addressed, delivered and acceptable to the Transfer Agent and the affected Holders (assuming that such securities and any securities issuable upon exercise, conversion or exchange of which, or as a dividend upon which, such securities were issued or are issuable, were at no time held by any Affiliate of the Company), as reasonably determined by the Company, upon the written advice of outside counsel to the Company.

“Registration Statement” means any registration statement required to be filed hereunder pursuant to Section 2(a) and any additional registration statements contemplated by Section 2(c) or Section 3(c), including (in each case) the Prospectus, amendments and supplements to any 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 any such registration statement.

“Rule 415” means Rule 415 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended or interpreted from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same purpose and effect as such Rule.

“Rule 424” means Rule 424 promulgated by the Commission pursuant to the Securities Act, as such Rule may be amended or interpreted from time to time, or any similar rule or regulation hereafter adopted by the Commission having substantially the same purpose and effect as such Rule.

“Selling Stockholder Questionnaire” shall have the meaning set forth in Section 3(a).

“SEC Guidance” means (i) any publicly-available written or oral guidance of the Commission staff, or any comments, requirements or requests of the Commission staff and (ii) the Securities Act.

2. Shelf Registration.

(a) On or prior to each Filing Date, the Company shall prepare and file with the Commission a Registration Statement covering the resale of all of the Registrable Securities that are not then registered on an effective Registration Statement for an offering to be made on a continuous basis pursuant to Rule 415. Each Registration Statement filed hereunder shall be on Form S-3 (except if the Company is not then eligible to register for resale the Registrable Securities on Form S-3, in which case such registration shall be on another appropriate form in accordance herewith, subject to the provisions of Section 2(e)) and shall contain (unless otherwise directed by at least 85% in interest of the Holders) substantially the “Plan of Distribution” attached hereto as Annex A and substantially the “Selling Stockholder” section attached hereto as Annex B; provided, however, that no Holder shall be required to be named as an “underwriter” without such Holder’s express prior written consent. Subject to the terms of this Agreement, the Company shall use its best efforts to cause a Registration Statement filed under this Agreement (including, without limitation, under Section 3(c)) to be declared effective under the Securities Act as promptly as possible after the filing thereof, but in any event no later than the applicable Effectiveness Date, and shall use its best efforts to keep such Registration Statement continuously effective under the Securities Act until the date that all Registrable Securities covered by such Registration Statement (i) have been sold, thereunder or pursuant to Rule 144, or (ii) may be sold without volume or manner-of-sale restrictions pursuant to Rule 144 and without the requirement for the Company to be in compliance with the current public information requirement under Rule 144, as determined by the counsel to the Company pursuant to a written opinion letter to such effect, addressed and acceptable to the Transfer Agent and the affected Holders (the “Effectiveness Period”). The Company shall telephonically request effectiveness of a Registration Statement as of 5:00 p.m. (New York City time) on a Trading Day. The Company shall immediately notify the Holders via e-mail of the effectiveness of a Registration Statement on the same Trading Day that the Company telephonically confirms effectiveness with the Commission, which shall be the date requested for effectiveness of such Registration Statement. The Company shall, by 9:30 a.m. (New York City time) on the Trading Day after the effective date of such Registration Statement, file a final Prospectus with the Commission as required by Rule 424. Failure to so notify the Holder within one (1) Trading Day of such notification of effectiveness or failure to file a final Prospectus as foresaid shall be deemed an Event under Section 2(d).

(b) Notwithstanding the registration obligations set forth in Section 2(a), if the Commission informs the Company that all of the Registrable Securities cannot, as a result of the application of Rule 415, be registered for resale as a secondary offering on a single registration statement, the Company agrees to promptly inform each of the Holders thereof and use its commercially reasonable efforts to file amendments to the Initial Registration Statement as required by the Commission, covering the maximum number of Registrable Securities permitted to be registered by the Commission, on Form S-3 or such other form available to register for resale the Registrable Securities as a secondary offering, subject to the provisions of Section 2(e); with respect to filing on Form S-3 or other appropriate form, and subject to the provisions of Section 2(d) with respect to the payment of liquidated damages; provided, however, that prior to filing such amendment, the Company shall be obligated to use diligent efforts to advocate with the Commission for the registration of all of the Registrable Securities in accordance with the SEC Guidance, including without limitation, Compliance and Disclosure Interpretation 612.09.

(c) Notwithstanding any other provision of this Agreement and subject to the payment of liquidated damages pursuant to Section 2(d), if the Commission or any SEC Guidance sets forth a limitation on the number of Registrable Securities permitted to be registered on a particular Registration Statement as a secondary offering (and notwithstanding that the Company used diligent efforts to advocate with the Commission for the registration of all or a greater portion of Registrable Securities), unless otherwise directed in writing by a Holder as to its Registrable Securities, the number of Registrable Securities to be registered on such Registration Statement will be reduced as follows:

- (i) First, the Company shall reduce or eliminate any securities to be included other than Registrable Securities;
- (ii) Second, the Company shall reduce Registrable Securities represented by Conversion Shares (applied, in the case that some Conversion Shares may be registered, to the Holders on a pro rata basis based on the total number of unregistered Conversion Shares held by such Holders); and
- (iii) Third, the Company shall reduce Registrable Securities represented by the Shares (applied, in the case that some Shares may be registered, to the Holders on a pro rata basis based on the total number of unregistered Shares held by such Holders).

In the event of a cutback hereunder, the Company shall give the Holder at least three (3) Trading Days prior written notice along with the calculations as to such Holder's allotment. In the event the Company amends the Initial Registration Statement in accordance with the foregoing, the Company will use its best efforts to file with the Commission, as promptly as allowed by Commission or SEC Guidance provided to the Company or to registrants of securities in general, one or more registration statements on Form S-3 or such other form available to register for resale those Registrable Securities that were not registered for resale on the Initial Registration Statement, as amended.

(d) If: (i) the Initial Registration Statement is not filed on or prior to its Filing Date (if the Company files the Initial Registration Statement without affording the Holders the opportunity to review and comment on the same as required by Section 3(a) herein or the Company subsequent withdraws the filing of the Registration Statement, the Company shall be deemed to have not satisfied this clause as of the Filing Date (i)), or (ii) the Company fails to file with the Commission a request for acceleration of a Registration Statement in accordance with Rule 461 promulgated by the Commission pursuant to the Securities Act, within ten Trading Days of the date that the Company is notified (orally or in writing, whichever is earlier) by the Commission that such Registration Statement will not be “reviewed” or will not be subject to further review, or (iii) prior to the effective date of a Registration Statement, the Company fails to file a pre-effective amendment and otherwise respond in writing to comments made by the Commission in respect of such Registration Statement within fifteen (15) calendar days after the receipt of comments by or notice from the Commission that such amendment is required in order for such Registration Statement to be declared effective, or (iv) a Registration Statement registering for resale all of the Registrable Securities is not declared effective by the Commission by the Effectiveness Date of the Initial Registration Statement (provided if the Registration Statement does not allow for the resale of Registrable Securities at prevailing market prices (i.e., only allows for fixed price sales), the Company shall have been deemed to have not satisfied this clause) or (v) after the effective date of a Registration Statement, such Registration Statement ceases for any reason to remain continuously effective as to all Registrable Securities included in such Registration Statement, or the Holders are otherwise not permitted to utilize the Prospectus therein to resell such Registrable Securities, for more than ten (10) consecutive calendar days or more than an aggregate of fifteen (15) calendar days (which need not be consecutive calendar days) during any 12-month period (any such failure or breach being referred to as an “Event”, and for purposes of clauses (i) and (iv), the date on which such Event occurs, and for purpose of clause (ii) the date on which such five (5) Trading Day period is exceeded, and for purpose of clause (iii) the date which such ten (10) calendar day period is exceeded, and for purpose of clause (v) the date on which such ten (10) or fifteen (15) calendar day period, as applicable, is exceeded being referred to as “Event Date”), then, in addition to any other rights the Holders may have hereunder or under applicable law, on each such Event Date and on each monthly anniversary of each such Event Date (if the applicable Event shall not have been cured by such date) until the applicable Event is cured, the Company shall pay to each Holder an amount in cash, as partial liquidated damages and not as a penalty, equal to the product of 2.0% multiplied by the aggregate Subscription Amount paid by such Holder pursuant to the Purchase Agreement. If the Company fails to pay any partial liquidated damages pursuant to this Section in full within seven days after the date payable, the Company will pay interest thereon at a rate of 18% per annum (or such lesser maximum amount that is permitted to be paid by applicable law) to the Holder, accruing daily from the date such partial liquidated damages are due until such amounts, plus all such interest thereon, are paid in full. The partial liquidated damages pursuant to the terms hereof shall apply on a daily pro rata basis for any portion of a month prior to the cure of an Event.

(e) If Form S-3 is not available for the registration of the resale of Registrable Securities hereunder, the Company shall (i) register the resale of the Registrable Securities on another appropriate form and (ii) undertake to register the Registrable Securities on Form S-3 as soon as such form is available, provided that the Company shall maintain the effectiveness of the Registration Statement then in effect until such time as a Registration Statement on Form S-3 covering the Registrable Securities has been declared effective by the Commission.

(f) Notwithstanding anything to the contrary contained herein, in no event shall the Company be permitted to name any Holder or affiliate of a Holder as any “underwriter” without the prior written consent of such Holder.

3. Registration Procedures.

In connection with the Company's registration obligations hereunder, the Company shall:

(a) Not less than five (5) Trading Days prior to the filing of each Registration Statement and not less than one (1) Trading Day prior to the filing of any related Prospectus or any amendment or supplement thereto (including any document that would be incorporated or deemed to be incorporated therein by reference), the Company shall (i) furnish to each Holder copies of all such documents proposed to be filed, which documents (other than those incorporated or deemed to be incorporated by reference) will be subject to the review of such Holders, and (ii) cause its officers and directors, counsel and independent registered public accountants to respond to such inquiries as shall be necessary, in the reasonable opinion of respective counsel to each Holder, to conduct a reasonable investigation within the meaning of the Securities Act. The Company shall not file a Registration Statement or any such Prospectus or any amendments or supplements thereto to which the Holders of a majority of the Registrable Securities shall reasonably object in good faith, provided that, the Company is notified of such objection in writing no later than five (5) Trading Days after the Holders have been so furnished copies of a Registration Statement or one (1) Trading Day after the Holders have been so furnished copies of any related Prospectus or amendments or supplements thereto. Each Holder agrees to furnish to the Company a completed questionnaire in the form attached to this Agreement as Annex C (a "Selling Stockholder Questionnaire") on a date that is not less than two (2) Trading Days prior to the Filing Date or by the end of the fourth (4th) Trading Day following the date on which such Holder receives draft materials in accordance with this Section.

(b) (i) Prepare and file with the Commission such amendments, including post-effective amendments, to a Registration Statement and the Prospectus used in connection therewith as may be necessary to keep a Registration Statement continuously effective as to the applicable Registrable Securities for the Effectiveness Period and prepare and file with the Commission such additional Registration Statements in order to register for resale under the Securities Act all of the Registrable Securities, (ii) cause the related Prospectus to be amended or supplemented by any required Prospectus supplement (subject to the terms of this Agreement), and, as so supplemented or amended, to be filed pursuant to Rule 424, (iii) respond as promptly as reasonably possible to any comments received from the Commission with respect to a Registration Statement or any amendment thereto and provide as promptly as reasonably possible to the Holders true and complete copies of all correspondence from and to the Commission relating to a Registration Statement (provided that, the Company shall excise any information contained therein which would constitute material non-public information regarding the Company or any of its Subsidiaries), and (iv) comply in all material respects with the applicable provisions of the Securities Act and the Exchange Act with respect to the disposition of all Registrable Securities covered by a Registration Statement during the applicable period in accordance (subject to the terms of this Agreement) with the intended methods of disposition by the Holders thereof set forth in such Registration Statement as so amended or in such Prospectus as so supplemented.

(c) If during the Effectiveness Period, the number of Registrable Securities at any time exceeds 100% of the number of shares of Common Stock then registered in a Registration Statement, then the Company shall file as soon as reasonably practicable, but in any case prior to the applicable Filing Date, an additional Registration Statement covering the resale by the Holders of not less than the number of such Registrable Securities.

(d) Notify the Holders of Registrable Securities to be sold (which notice shall, pursuant to clauses (iii) through (vi) hereof, be accompanied by an instruction to suspend the use of the Prospectus until the requisite changes have been made) as promptly as reasonably possible (and, in the case of (i)(A) below, not less than one (1) Trading Day prior to such filing) and (if requested by any such Person) confirm such notice in writing no later than one (1) Trading Day following the day (i)(A) when a Prospectus or any Prospectus supplement or post-effective amendment to a Registration Statement is proposed to be filed, (B) when the Commission notifies the Company whether there will be a “review” of such Registration Statement and whenever the Commission comments in writing on such Registration Statement, and (C) with respect to a Registration Statement or any post-effective amendment, when the same has become effective, (ii) of any request by the Commission or any other federal or state governmental authority for amendments or supplements to a Registration Statement or Prospectus or for additional information, (iii) of the issuance by the Commission or any other federal or state governmental authority of any stop order suspending the effectiveness of a Registration Statement covering any or all of the Registrable Securities or the initiation of any Proceedings for that purpose, (iv) of the receipt by the Company of any notification with respect to the suspension of the qualification or exemption from qualification of any of the Registrable Securities for sale in any jurisdiction, or the initiation or threatening of any Proceeding for such purpose, (v) of the occurrence of any event or passage of time that makes the financial statements included in a Registration Statement ineligible for inclusion therein or any statement made in a Registration Statement or Prospectus or any document incorporated or deemed to be incorporated therein by reference untrue in any material respect or that requires any revisions to a Registration Statement, Prospectus or other documents so that, in the case of a Registration Statement or the Prospectus, as the case may be, it will not contain any untrue statement of a material fact or omit to state any 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 (vi) of the occurrence or existence of any pending corporate development with respect to the Company that the Company believes may be material and that, in the determination of the Company, makes it not in the best interest of the Company to allow continued availability of a Registration Statement or Prospectus; provided, however, that in no event shall any such notice contain any information which would constitute material, non-public information regarding the Company or any of its Subsidiaries, and the Company agrees that the Holders shall not have any duty of confidentiality to the Company or any of its Subsidiaries and shall not have any duty to the Company or any of its Subsidiaries not to trade on the basis of such information.

(e) Use its best efforts to avoid the issuance of, or, if issued, obtain the withdrawal of (i) any order stopping or suspending the effectiveness of a Registration Statement, or (ii) any suspension of the qualification (or exemption from qualification) of any of the Registrable Securities for sale in any jurisdiction, at the earliest practicable moment.

(f) Furnish to each Holder, without charge, at least one conformed copy of each such Registration Statement and each amendment thereto, including financial statements and schedules, all documents incorporated or deemed to be incorporated therein by reference to the extent requested by such Person, and all exhibits to the extent requested by such Person (including those previously furnished or incorporated by reference) promptly after the filing of such documents with the Commission, provided that any such item which is available on the EDGAR system (or successor thereto) need not be furnished in physical form.

(g) Subject to the terms of this Agreement, the Company hereby consents to the use of such Prospectus and each amendment or supplement thereto by each of the selling Holders in connection with the offering and sale of the Registrable Securities covered by such Prospectus and any amendment or supplement thereto, except after the giving of any notice pursuant to Section 3(d).

(h) Prior to any resale of Registrable Securities by a Holder, use its commercially reasonable efforts to register or qualify or cooperate with the selling Holders in connection with the registration or qualification (or exemption from the registration or qualification) of such Registrable Securities for the resale by the Holder under the securities or Blue Sky laws of such jurisdictions within the United States as any Holder reasonably requests in writing, to keep each registration or qualification (or exemption therefrom) effective during the Effectiveness Period and to do any and all other acts or things reasonably necessary to enable the disposition in such jurisdictions of the Registrable Securities covered by each Registration Statement, provided that the Company shall not be required to qualify generally to do business in any jurisdiction where it is not then so qualified, subject the Company to any material tax in any such jurisdiction where it is not then so subject or file a general consent to service of process in any such jurisdiction.

(i) If requested by a Holder, cooperate with such Holder to facilitate the timely preparation and delivery of certificates representing Registrable Securities to be delivered to a transferee pursuant to a Registration Statement, which certificates shall be free, to the extent permitted by the Purchase Agreement, of all restrictive legends, and to enable such Registrable Securities to be in such denominations and registered in such names as any such Holder may request.

(j) Upon the occurrence of any event contemplated by Section 3(d), as promptly as reasonably possible under the circumstances taking into account the Company's good faith assessment of any adverse consequences to the Company and its stockholders of the premature disclosure of such event, prepare a supplement or amendment, including a post-effective amendment, to a Registration Statement or a supplement to the related Prospectus or any document incorporated or deemed to be incorporated therein by reference, and file any other required document so that, as thereafter delivered, neither a Registration Statement nor such Prospectus will 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 were made, not misleading. If the Company notifies the Holders in accordance with clauses (iii) through (vi) of Section 3(d) above to suspend the use of any Prospectus until the requisite changes to such Prospectus have been made, then the Holders shall suspend use of such Prospectus. The Company will use its best efforts to ensure that the use of the Prospectus may be resumed as promptly as is practicable. The Company shall be entitled to exercise its right under this Section 3(j) to suspend the availability of a Registration Statement and Prospectus, subject to the payment of partial liquidated damages otherwise required pursuant to Section 2(d), for a period not to exceed 60 calendar days (which need not be consecutive days) in any 12-month period.

(k) Otherwise use commercially reasonable efforts to comply with all applicable rules and regulations of the Commission under the Securities Act and the Exchange Act, including, without limitation, Rule 172 under the Securities Act, file any final Prospectus, including any supplement or amendment thereof, with the Commission pursuant to Rule 424 under the Securities Act, promptly inform the Holders in writing if, at any time during the Effectiveness Period, the Company does not satisfy the conditions specified in Rule 172 and, as a result thereof, the Holders are required to deliver a Prospectus in connection with any disposition of Registrable Securities and take such other actions as may be reasonably necessary to facilitate the registration of the Registrable Securities hereunder.

(l) The Company shall use its best efforts to maintain eligibility for use of Form S-3 (or any successor form thereto) for the registration of the resale of Registrable Securities.

(m) The Company may require each selling Holder to furnish to the Company a certified statement as to the number of shares of Common Stock beneficially owned by such Holder and, if required by the Commission, the natural persons thereof that have voting and dispositive control over the shares. During any periods that the Company is unable to meet its obligations hereunder with respect to the registration of the Registrable Securities solely because any Holder fails to furnish such information within three Trading Days of the Company's request, any liquidated damages that are accruing at such time as to such Holder only shall be tolled and any Event that may otherwise occur solely because of such delay shall be suspended as to such Holder only, until such information is delivered to the Company.

4. Registration Expenses. All fees and expenses incident to the performance of or compliance with, this Agreement by the Company shall be borne by the Company whether or not any Registrable Securities are sold pursuant to a Registration Statement. The fees and expenses referred to in the foregoing sentence shall include, without limitation, (i) all registration and filing fees (including, without limitation, fees and expenses of the Company's counsel and independent registered public accountants) (A) with respect to filings made with the Commission, (B) with respect to filings required to be made with any Trading Market on which the Common Stock is then listed for trading, and (C) in compliance with applicable state securities or Blue Sky laws reasonably agreed to by the Company in writing (including, without limitation, fees and disbursements of counsel for the Company in connection with Blue Sky qualifications or exemptions of the Registrable Securities), (ii) printing expenses (including, without limitation, expenses of printing certificates for Registrable Securities), (iii) messenger, telephone and delivery expenses, (iv) fees and disbursements of counsel for the Company, (v) Securities Act liability insurance, if the Company so desires such insurance, and (vi) fees and expenses of all other Persons retained by the Company in connection with the consummation of the transactions contemplated by this Agreement. In addition, the Company shall be responsible for all of its internal expenses incurred in connection with the consummation of the transactions contemplated by this Agreement (including, without limitation, all salaries and expenses of its officers and employees performing legal or accounting duties), the expense of any annual audit and the fees and expenses incurred in connection with the listing of the Registrable Securities on any securities exchange as required hereunder. In no event shall the Company be responsible for any broker or similar commissions of any Holder or, except to the extent provided for in the Transaction Documents, any legal fees or other costs of the Holders.

5. Indemnification.

(a) Indemnification by the Company. The Company shall, notwithstanding any termination of this Agreement, indemnify and hold harmless each Holder, the officers, directors, members, partners, agents, brokers (including brokers who offer and sell Registrable Securities as principal as a result of a pledge or any failure to perform under a margin call of Common Stock), investment advisors and employees (and any other Persons with a functionally equivalent role of a Person holding such titles, notwithstanding a lack of such title or any other title) of each of them, each Person who controls any such Holder (within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act) and the officers, directors, members, stockholders, partners, agents and employees (and any other Persons with a functionally equivalent role of a Person holding such titles, notwithstanding a lack of such title or any other title) of each such controlling Person, to the fullest extent permitted by applicable law, from and against any and all losses, claims, damages, liabilities, costs (including, without limitation, reasonable attorneys' fees) and expenses (collectively, "Losses"), as incurred, arising out of or relating to (1) any untrue or alleged untrue statement of a material fact contained in a Registration Statement, any Prospectus or any form of prospectus or in any amendment or supplement thereto or in any preliminary prospectus, or arising out of or relating to any omission or alleged omission of a material fact required to be stated therein or necessary to make the statements therein (in the case of any Prospectus or supplement thereto, in light of the circumstances under which they were made) not misleading or (2) any violation or alleged violation by the Company of the Securities Act, the Exchange Act or any state securities law, or any rule or regulation thereunder, in connection with the performance of its obligations under this Agreement, except to the extent, but only to the extent, that (i) such untrue statements or omissions are based solely upon information regarding such Holder furnished in writing to the Company by such Holder expressly for use therein, or to the extent that such information relates to such Holder or such Holder's proposed method of distribution of Registrable Securities and was reviewed and expressly approved in writing by such Holder expressly for use in a Registration Statement, such Prospectus or in any amendment or supplement thereto (it being understood that the Holder has approved Annex A hereto for this purpose) or (ii) in the case of an occurrence of an event of the type specified in Section 3(d)(iii)-(vi), the use by such Holder of an outdated, defective or otherwise unavailable Prospectus after the Company has notified such Holder in writing that the Prospectus is outdated, defective or otherwise unavailable for use by such Holder and prior to the receipt by such Holder of the Advice contemplated in Section 6(c). The Company shall notify the Holders promptly of the institution, threat or assertion of any Proceeding arising from or in connection with the transactions contemplated by this Agreement of which the Company is aware. Such indemnity shall remain in full force and effect regardless of any investigation made by or on behalf of such indemnified person and shall survive the transfer of any Registrable Securities by any of the Holders in accordance with Section 6(f).

(b) Indemnification by Holders. Each Holder shall, severally and not jointly, indemnify and hold harmless the Company, its directors, officers, agents and employees, each Person who controls the Company (within the meaning of Section 15 of the Securities Act and Section 20 of the Exchange Act), and the directors, officers, agents or employees of such controlling Persons, to the fullest extent permitted by applicable law, from and against all Losses, as incurred, to the extent arising out of or based solely upon: any untrue or alleged untrue statement of a material fact contained in any Registration Statement, any Prospectus, or in any amendment or supplement thereto or in any preliminary prospectus, or arising out of or relating to any omission or alleged omission of a material fact required to be stated therein or necessary to make the statements therein (in the case of any Prospectus or supplement thereto, in light of the circumstances under which they were made) not misleading (i) to the extent, but only to the extent, that such untrue statement or omission is contained in any information so furnished in writing by such Holder to the Company expressly for inclusion in such Registration Statement or such Prospectus or (ii) to the extent, but only to the extent, that such information relates to such Holder's information provided in the Selling Stockholder Questionnaire or the proposed method of distribution of Registrable Securities and was reviewed and expressly approved in writing by such Holder expressly for use in a Registration Statement (it being understood that the Holder has approved Annex A hereto for this purpose), such Prospectus or in any amendment or supplement thereto. In no event shall the liability of a selling Holder be greater in amount than the dollar amount of the proceeds (net of all expenses paid by such Holder in connection with any claim relating to this Section 5 and the amount of any damages such Holder has otherwise been required to pay by reason of such untrue statement or omission) received by such Holder upon the sale of the Registrable Securities included in the Registration Statement giving rise to such indemnification obligation.

(c) Conduct of Indemnification Proceedings. If any Proceeding shall be brought or asserted against any Person entitled to indemnity hereunder (an "Indemnified Party"), such Indemnified Party shall promptly notify the Person from whom indemnity is sought (the "Indemnifying Party") in writing, and the Indemnifying Party shall have the right to assume the defense thereof, including the employment of counsel reasonably satisfactory to the Indemnified Party and the payment of all fees and expenses incurred in connection with defense thereof, provided that the failure of any Indemnified Party to give such notice shall not relieve the Indemnifying Party of its obligations or liabilities pursuant to this Agreement, except (and only) to the extent that it shall be finally determined by a court of competent jurisdiction (which determination is not subject to appeal or further review) that such failure shall have materially and adversely prejudiced the Indemnifying Party.

An Indemnified Party shall have the right to employ separate counsel in any such Proceeding and to participate in the defense thereof, but the fees and expenses of such counsel shall be at the expense of such Indemnified Party or Parties unless: (1) the Indemnifying Party has agreed in writing to pay such fees and expenses, (2) the Indemnifying Party shall have failed promptly to assume the defense of such Proceeding and to employ counsel reasonably satisfactory to such Indemnified Party in any such Proceeding, or (3) the named parties to any such Proceeding (including any impleaded parties) include both such Indemnified Party and the Indemnifying Party, and counsel to the Indemnified Party shall reasonably believe that a material conflict of interest is likely to exist if the same counsel were to represent such Indemnified Party and the Indemnifying Party (in which case, if such Indemnified Party notifies the Indemnifying Party in writing that it elects to employ separate counsel at the expense of the Indemnifying Party, the Indemnifying Party shall not have the right to assume the defense thereof and the reasonable fees and expenses of no more than one separate counsel shall be at the expense of the Indemnifying Party). The Indemnifying Party shall not be liable for any settlement of any such Proceeding effected without its written consent, which consent shall not be unreasonably withheld or delayed. No Indemnifying Party shall, without the prior written consent of the Indemnified Party, effect any settlement of any pending Proceeding in respect of which any Indemnified Party is a party, unless such settlement includes an unconditional release of such Indemnified Party from all liability on claims that are the subject matter of such Proceeding.

Subject to the terms of this Agreement, all reasonable fees and expenses of the Indemnified Party (including reasonable fees and expenses to the extent incurred in connection with investigating or preparing to defend such Proceeding in a manner not inconsistent with this Section) shall be paid to the Indemnified Party, as incurred, within ten Trading Days of written notice thereof to the Indemnifying Party, provided that the Indemnified Party shall promptly reimburse the Indemnifying Party for that portion of such fees and expenses applicable to such actions for which such Indemnified Party is finally determined by a court of competent jurisdiction (which determination is not subject to appeal or further review) not to be entitled to indemnification hereunder.

(d) Contribution. If the indemnification under Section 5(a) or 5(b) is unavailable to an Indemnified Party or insufficient to hold an Indemnified Party harmless for any Losses, then each Indemnifying Party shall contribute to the amount paid or payable by such Indemnified Party, in such proportion as is appropriate to reflect the relative fault of the Indemnifying Party and Indemnified Party in connection with the actions, statements or omissions that resulted in such Losses as well as any other relevant equitable considerations. The relative fault of such Indemnifying Party and Indemnified Party shall be determined by reference to, among other things, whether any action in question, including any untrue or alleged untrue statement of a material fact or omission or alleged omission of a material fact, has been taken or made by, or relates to information supplied by, such Indemnifying Party or Indemnified Party, and the parties' relative intent, knowledge, access to information and opportunity to correct or prevent such action, statement or omission. The amount paid or payable by a party as a result of any Losses shall be deemed to include, subject to the limitations set forth in this Agreement, any reasonable attorneys' or other fees or expenses incurred by such party in connection with any Proceeding to the extent such party would have been indemnified for such fees or expenses if the indemnification provided for in this Section was available to such party in accordance with its terms.

The parties hereto agree that it would not be just and equitable if contribution pursuant to this Section 5(d) were determined by pro rata allocation or by any other method of allocation that does not take into account the equitable considerations referred to in the immediately preceding paragraph. In no event shall the contribution obligation of a Holder of Registrable Securities be greater in amount than the dollar amount of the proceeds (net of all expenses paid by such Holder in connection with any claim relating to this Section 5 and the amount of any damages such Holder has otherwise been required to pay by reason of such untrue or alleged untrue statement or omission or alleged omission) received by it upon the sale of the Registrable Securities giving rise to such contribution obligation.

The indemnity and contribution agreements contained in this Section are in addition to any liability that the Indemnifying Parties may have to the Indemnified Parties.

6. Miscellaneous.

(a) Remedies. In the event of a breach by the Company or by a Holder of any of their respective obligations under this Agreement, each Holder or the Company, as the case may be, in addition to being entitled to exercise all rights granted by law and under this Agreement, including recovery of damages, shall be entitled to specific performance of its rights under this Agreement. Each of the Company and each Holder agrees that monetary damages would not provide adequate compensation for any losses incurred by reason of a breach by it of any of the provisions of this Agreement and hereby further agrees that, in the event of any action for specific performance in respect of such breach, it shall not assert or shall waive the defense that a remedy at law would be adequate.

(b) No Piggyback on Registrations; Prohibition on Filing Other Registration Statements. Neither the Company nor any of its security holders (other than the Holders in such capacity pursuant hereto) may include securities of the Company in any Registration Statements other than the Registrable Securities.

(c) Discontinued Disposition. By its acquisition of Registrable Securities, each Holder agrees that, upon receipt of a notice from the Company of the occurrence of any event of the kind described in Section 3(d)(iii) through (vi), such Holder will forthwith discontinue disposition of such Registrable Securities under a Registration Statement until it is advised in writing (the "Advice") by the Company that the use of the applicable Prospectus (as it may have been supplemented or amended) may be resumed. The Company will use its best efforts to ensure that the use of the Prospectus may be resumed as promptly as is practicable. The Company agrees and acknowledges that any periods during which the Holder is required to discontinue the disposition of the Registrable Securities hereunder shall be subject to the provisions of Section 2(d).

(d) Amendments and Waivers. The provisions of this Agreement, including the provisions of this sentence, may not be amended, modified or supplemented, and waivers or consents to departures from the provisions hereof may not be given, unless the same shall be in writing and signed by the Company and the Holders of 50.1% or more of the then outstanding Registrable Securities (for purposes of clarification, this includes any Registrable Securities issuable upon exercise or conversion of any Security), provided that, if any amendment, modification or waiver disproportionately and adversely impacts a Holder (or group of Holders), the consent of such disproportionately impacted Holder (or group of Holders) shall be required. If a Registration Statement does not register all of the Registrable Securities pursuant to a waiver or amendment done in compliance with the previous sentence, then the number of Registrable Securities to be registered for each Holder shall be reduced pro rata among all Holders and each Holder shall have the right to designate which of its Registrable Securities shall be omitted from such Registration Statement. Notwithstanding the foregoing, a waiver or consent to depart from the provisions hereof with respect to a matter that relates exclusively to the rights of a Holder or some Holders and that does not directly or indirectly affect the rights of other Holders may be given only by such Holder or Holders of all of the Registrable Securities to which such waiver or consent relates; provided, however, that the provisions of this sentence may not be amended, modified, or supplemented except in accordance with the provisions of the first sentence of this Section 6(d). No consideration shall be offered or paid to any Person to amend or consent to a waiver or modification of any provision of this Agreement unless the same consideration also is offered to all of the parties to this Agreement.

- (e) Notices. Any and all notices or other communications or deliveries required or permitted to be provided hereunder shall be delivered as set forth in the Purchase Agreement.
- (f) Successors and Assigns. This Agreement shall inure to the benefit of and be binding upon the successors and permitted assigns of each of the parties and shall inure to the benefit of each Holder. The Company may not assign (except by merger) its rights or obligations hereunder without the prior written consent of all of the Holders of the then outstanding Registrable Securities. Each Holder may assign their respective rights hereunder in the manner and to the Persons as permitted under the Purchase Agreement.
- (g) No Inconsistent Agreements. Neither the Company nor any of its Subsidiaries has entered, as of the date hereof, nor shall the Company or any of its Subsidiaries, on or after the date of this Agreement, enter into any agreement with respect to its securities, that would have the effect of impairing the rights granted to the Holders in this Agreement or otherwise conflicts with the provisions hereof. Except as set forth on Schedule 6(i), neither the Company nor any of its Subsidiaries has previously entered into any agreement granting any registration rights with respect to any of its securities to any Person that have not been satisfied in full.
- (h) Execution and Counterparts. This Agreement may be executed in two or more counterparts, all of which when taken together shall be considered one and the same agreement and shall become effective when counterparts have been signed by each party and delivered to the other party, it being understood that both parties need not sign the same counterpart. In the event that any signature is delivered by e-mail delivery of a “.pdf” format data file or any electronic signature complying with the U.S. federal E-SIGN Act of 2000 (e.g., www.docusign.com), such signature shall create a valid and binding obligation of the party executing (or on whose behalf such signature is executed) with the same force and effect as if such “.pdf” signature page were an original thereof.
- (i) Governing Law. All questions concerning the construction, validity, enforcement and interpretation of this Agreement shall be determined in accordance with the provisions of the Purchase Agreement.
- (j) Cumulative Remedies. The remedies provided herein are cumulative and not exclusive of any other remedies provided by law.

(k) Severability. If any term, provision, covenant or restriction of this Agreement is held by a court of competent jurisdiction to be invalid, illegal, void or unenforceable, the remainder of the terms, provisions, covenants and restrictions set forth herein shall remain in full force and effect and shall in no way be affected, impaired or invalidated, and the parties hereto shall use their commercially reasonable efforts to find and employ an alternative means to achieve the same or substantially the same result as that contemplated by such term, provision, covenant or restriction. It is hereby stipulated and declared to be the intention of the parties that they would have executed the remaining terms, provisions, covenants and restrictions without including any of such that may be hereafter declared invalid, illegal, void or unenforceable.

(l) Headings. The headings in this Agreement are for convenience only, do not constitute a part of the Agreement and shall not be deemed to limit or affect any of the provisions hereof.

(m) Independent Nature of Holders' Obligations and Rights. The obligations of each Holder hereunder are several and not joint with the obligations of any other Holder hereunder, and no Holder shall be responsible in any way for the performance of the obligations of any other Holder hereunder. Nothing contained herein or in any other agreement or document delivered at any closing, and no action taken by any Holder pursuant hereto or thereto, shall be deemed to constitute the Holders as a partnership, an association, a joint venture or any other kind of group or entity, or create a presumption that the Holders are in any way acting in concert or as a group or entity with respect to such obligations or the transactions contemplated by this Agreement or any other matters, and the Company acknowledges that the Holders are not acting in concert or as a group, and the Company shall not assert any such claim, with respect to such obligations or transactions. Each Holder shall be entitled to protect and enforce its rights, including without limitation the rights arising out of this Agreement, and it shall not be necessary for any other Holder to be joined as an additional party in any proceeding for such purpose. The use of a single agreement with respect to the obligations of the Company contained was solely in the control of the Company, not the action or decision of any Holder, and was done solely for the convenience of the Company and not because it was required or requested to do so by any Holder. It is expressly understood and agreed that each provision contained in this Agreement is between the Company and a Holder, solely, and not between the Company and the Holders collectively and not between and among Holders.

(Signature Pages Follow)

IN WITNESS WHEREOF, the parties have executed this Registration Rights Agreement as of the date first written above.

BIONANO GENOMICS, INC.

By: /s/ R. Erik Holmlin

Name : R. Erik Holmlin

Title : President and Chief Executive Officer

[SIGNATURE PAGE OF HOLDERS FOLLOWS]

Name of Holder: _____

Signature of Authorized Signatory of Holder: _____

Name of Authorized Signatory: _____

Title of Authorized Signatory: _____

[SIGNATURE PAGES CONTINUE]

Plan of Distribution

Each Selling Stockholder (the “Selling Stockholders”) of the securities and any of their pledgees, assignees and successors-in-interest may, from time to time, sell any or all of their securities covered hereby on the principal Trading Market or any other stock exchange, market or trading facility on which the securities are traded or in private transactions. These sales may be at fixed or negotiated prices. A Selling Stockholder may use any one or more of the following methods when selling securities:

- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the securities as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- settlement of short sales;
- in transactions through broker-dealers that agree with the Selling Stockholders to sell a specified number of such securities at a stipulated price per security;
- through the writing or settlement of options or other hedging transactions, whether through an options exchange or otherwise;
- a combination of any such methods of sale; or
- any other method permitted pursuant to applicable law.

The Selling Stockholders may also sell securities under Rule 144 or any other exemption from registration under the Securities Act of 1933, as amended (the “Securities Act”), if available, rather than under this prospectus.

Broker-dealers engaged by the Selling Stockholders may arrange for other brokers-dealers to participate in sales. Broker-dealers may receive commissions or discounts from the Selling Stockholders (or, if any broker-dealer acts as agent for the purchaser of securities, from the purchaser) in amounts to be negotiated, but, except as set forth in a supplement to this Prospectus, in the case of an agency transaction not in excess of a customary brokerage commission in compliance with FINRA Rule 2121; and in the case of a principal transaction a markup or markdown in compliance with FINRA Rule 2121.

In connection with the sale of the securities or interests therein, the Selling Stockholders may enter into hedging transactions with broker-dealers or other financial institutions, which may in turn engage in short sales of the securities in the course of hedging the positions they assume. The Selling Stockholders may also sell securities short and deliver these securities to close out their short positions, or loan or pledge the securities to broker-dealers that in turn may sell these securities. The Selling Stockholders may also enter into option or other transactions with broker-dealers or other financial institutions or create one or more derivative securities which require the delivery to such broker-dealer or other financial institution of securities offered by this prospectus, which securities such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction).

The Selling Stockholders and any broker-dealers or agents that are involved in selling the securities may be deemed to be “underwriters” within the meaning of the Securities Act in connection with such sales. In such event, any commissions received by such broker-dealers or agents and any profit on the resale of the securities purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. Each Selling Stockholder has informed the Company that it does not have any written or oral agreement or understanding, directly or indirectly, with any person to distribute the securities.

The Company is required to pay certain fees and expenses incurred by the Company incident to the registration of the securities. The Company has agreed to indemnify the Selling Stockholders against certain losses, claims, damages and liabilities, including liabilities under the Securities Act.

We agreed to keep this prospectus effective until the earlier of (i) the date on which the securities may be resold by the Selling Stockholders without registration and without regard to any volume or manner-of-sale limitations by reason of Rule 144, without the requirement for the Company to be in compliance with the current public information under Rule 144 under the Securities Act or any other rule of similar effect or (ii) all of the securities have been sold pursuant to this prospectus or Rule 144 under the Securities Act or any other rule of similar effect. The resale securities will be sold only through registered or licensed brokers or dealers if required under applicable state securities laws. In addition, in certain states, the resale securities covered hereby may not be sold unless they have been registered or qualified for sale in the applicable state or an exemption from the registration or qualification requirement is available and is complied with.

Under applicable rules and regulations under the Exchange Act, any person engaged in the distribution of the resale securities may not simultaneously engage in market making activities with respect to the common stock for the applicable restricted period, as defined in Regulation M, prior to the commencement of the distribution. In addition, the Selling Stockholders will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including Regulation M, which may limit the timing of purchases and sales of the common stock by the Selling Stockholders or any other person. We will make copies of this prospectus available to the Selling Stockholders and have informed them of the need to deliver a copy of this prospectus to each purchaser at or prior to the time of the sale (including by compliance with Rule 172 under the Securities Act).

SELLING SHAREHOLDERS

The common stock being offered by the selling shareholders are those previously issued to the selling shareholders, and those issuable to the selling shareholders, upon conversion of the debentures. For additional information regarding the issuances of those shares of common stock and debentures, see "Private Placement of Shares of Common Stock and Debentures" above. We are registering the shares of common stock in order to permit the selling shareholders to offer the shares for resale from time to time. Except for the ownership of the shares of common stock and the debentures, the selling shareholders have not had any material relationship with us within the past three years.

The table below lists the selling shareholders and other information regarding the beneficial ownership of the shares of common stock by each of the selling shareholders. The second column lists the number of shares of common stock beneficially owned by each selling shareholder, based on its ownership of the shares of common stock and debentures, as of _____, 2024, assuming conversion of the debentures held by the selling shareholders on that date, without regard to any limitations on conversion.

The third column lists the shares of common stock being offered by this prospectus by the selling shareholders.

In accordance with the terms of a registration rights agreement with the selling shareholders, this prospectus generally covers the resale of the sum of (i) the number of shares of common stock issued to the selling shareholders in the "Private Placement of Shares of Common Stock and Debentures" described above and (ii) the maximum number of shares of common stock issuable upon conversion of the debentures, determined as if the outstanding debentures were converted in full as of the trading day immediately preceding the date this registration statement was initially filed with the SEC, each as of the trading day immediately preceding the applicable date of determination and all subject to adjustment as provided in the registration right agreement, without regard to any limitations on the conversion of the debentures. The fourth column assumes the sale of all of the shares offered by the selling shareholders pursuant to this prospectus.

Under the terms of the debentures, a selling shareholder may not convert the debentures to the extent such conversion would cause such selling shareholder, together with its affiliates and attribution parties, to beneficially own a number of shares of common stock which would exceed 4.99% of our then outstanding common stock following such conversion, excluding for purposes of such determination shares of common stock issuable upon conversion of such debentures which have not been converted. The number of shares in the second and fourth columns do not reflect this limitation. The selling shareholders may sell all, some or none of their shares in this offering. See "Plan of Distribution."

Name of Selling Shareholder

**Number of shares of
Common Stock Owned
Prior to Offering**

**Maximum Number of
shares of Common Stock
to be Sold Pursuant to this
Prospectus**

**Number of shares of
Common Stock Owned
After Offering**

BIONANO GENOMICS, INC.**Selling Stockholder Notice and Questionnaire**

The undersigned beneficial owner of common stock (the "Registrable Securities") of Bionano Genomics, Inc., a Delaware corporation (the "Company"), understands that the Company has filed or intends to file with the Securities and Exchange Commission (the "Commission") a registration statement (the "Registration Statement") for the registration and resale under Rule 415 of the Securities Act of 1933, as amended (the "Securities Act"), of the Registrable Securities, in accordance with the terms of the Registration Rights Agreement (the "Registration Rights Agreement") to which this document is annexed. A copy of the Registration Rights Agreement is available from the Company upon request at the address set forth below. All capitalized terms not otherwise defined herein shall have the meanings ascribed thereto in the Registration Rights Agreement.

Certain legal consequences arise from being named as a selling stockholder in the Registration Statement and the related prospectus. Accordingly, holders and beneficial owners of Registrable Securities are advised to consult their own securities law counsel regarding the consequences of being named or not being named as a selling stockholder in the Registration Statement and the related prospectus.

NOTICE

The undersigned beneficial owner (the "Selling Stockholder") of Registrable Securities hereby elects to include the Registrable Securities owned by it in the Registration Statement.

The undersigned hereby provides the following information to the Company and represents and warrants that such information is accurate:

QUESTIONNAIRE

1. Name.

(a) Full Legal Name of Selling Stockholder

(b) Full Legal Name of Registered Holder (if not the same as (a) above) through which Registrable Securities are held:

(c) Full Legal Name of Natural Control Person (which means a natural person who directly or indirectly alone or with others has power to vote or dispose of the securities covered by this Questionnaire):

2. Address for Notices to Selling Stockholder:

Telephone:

E-Mail:

Contact Person:

3. Broker-Dealer Status:

(a) Are you a broker-dealer?

Yes No

(b) If "yes" to Section 3(a), did you receive your Registrable Securities as compensation for investment banking services to the Company?

Yes No

Note: If “no” to Section 3(b), the Commission’s staff has indicated that you should be identified as an underwriter in the Registration Statement.

(c) Are you an affiliate of a broker-dealer?

Yes No

(d) If you are an affiliate of a broker-dealer, do you certify that you purchased the Registrable Securities in the ordinary course of business, and at the time of the purchase of the Registrable Securities to be resold, you had no agreements or understandings, directly or indirectly, with any person to distribute the Registrable Securities?

Yes No

Note: If “no” to Section 3(d), the Commission’s staff has indicated that you should be identified as an underwriter in the Registration Statement.

4. Beneficial Ownership of Securities of the Company Owned by the Selling Stockholder.

Except as set forth below in this Item 4, the undersigned is not the beneficial or registered owner of any securities of the Company other than the securities issuable pursuant to the Purchase Agreement.

(a) Type and Amount of other securities beneficially owned by the Selling Stockholder:

5. Relationships with the Company:

Except as set forth below, neither the undersigned nor any of its affiliates, officers, directors or principal equity holders (owners of 5% or more of the equity securities of the undersigned) has held any position or office or has had any other material relationship with the Company (or its predecessors or affiliates) during the past three years.

State any exceptions here:

The undersigned agrees to promptly notify the Company of any material inaccuracies or changes in the information provided herein that may occur subsequent to the date hereof at any time while the Registration Statement remains effective; provided, that the undersigned shall not be required to notify the Company of any changes to the number of securities held or owned by the undersigned or its affiliates.

By signing below, the undersigned consents to the disclosure of the information contained herein in its answers to Items 1 through 5 and the inclusion of such information in the Registration Statement and the related prospectus and any amendments or supplements thereto. The undersigned understands that such information will be relied upon by the Company in connection with the preparation or amendment of the Registration Statement and the related prospectus and any amendments or supplements thereto.

IN WITNESS WHEREOF the undersigned, by authority duly given, has caused this Notice and Questionnaire to be executed and delivered either in person or by its duly authorized agent.

Date: _____

Beneficial Owner:

By:

Name:

Title:

PLEASE EMAIL A .PDF COPY OF THE COMPLETED AND EXECUTED NOTICE AND QUESTIONNAIRE TO:

HIGH TRAIL CAPITAL LP
80 River Street, Suite 4C
Hoboken, NJ 07030

May 23, 2024

Bionano Genomics, Inc.
9540 Towne Centre Drive, Suite 100
San Diego, CA 92121
Attn: R. Erik Holmlin

Re: Agreement to Redeem Senior Secured Convertible Notes due 2025

To the addressees set forth above:

Reference is made to that certain Securities Purchase Agreement (the “**Securities Purchase Agreement**”), dated as of October 11, 2023, by and between Bionano Genomics, Inc., a Delaware corporation (the “**Company**”), and High Trail Special Situations LLC (the “**Holder**”) pursuant to which the Company issued (i) \$45,000,000 in aggregate principal amount of Initial Registered Notes and (ii) \$35,000,000 in aggregate principal amount of Initial Private Placement Notes. Terms used but not defined herein shall have the meaning ascribed to them in the Securities Purchase Agreement.

For valuable consideration, the sufficiency of which is hereby acknowledged, the parties hereto hereby agree as follows:

1. On February 29, 2024 the Company redeemed the entire outstanding principal amount of the Initial Private Placement Notes and paid the Retirement Fee with respect to the Initial Private Placement Note to the Holder and thereupon, the Initial Private Placement Note was cancelled.
 2. The Company and the Holder are executing and delivering this second letter agreement (this “**2nd Agreement**”) with respect to the Initial Registered Note in reliance upon the Registration Statement and the Prospectus Supplement.
 3. On May 24, 2024 (the “**Closing Date**”), the Company shall redeem the entire outstanding principal amount of **\$15,337,000** under the Initial Registered Note at a redemption price of 115% for a total redemption payment of **\$17,637,550** (the “**Redemption**”), whereupon the Initial Registered Note will be canceled (provided, however, that such cancellation of the Initial Registered Note shall not be effective unless and until the Holder receives the Initial Registered Note Retirement Fee (as defined below) from the Company in accordance with Section 5 hereof).
 4. The Holder waives the notice required under Section 4(C)(i) of the Initial Registered Note and further agrees that, notwithstanding anything in the Initial Registered Note to the contrary, the Company Redemption Price shall be 115% of the then outstanding Principal Amount of the Initial Registered Note.
 5. On the Closing Date, the Company shall pay the Holder the Retirement Fee (as defined in the Initial Registered Note) with respect to the redemption of the Initial Registered Note, by wire transfer of immediately available funds; provided, however, that notwithstanding anything contained in the Initial Registered Note to the contrary, the Company and the Holder agree that such Retirement Fee shall be in the amount of **\$2,187,500** (the “**Initial Registered Note Retirement Fee**”).
-

6. On the Closing Date, the Company shall promptly pay all reasonable and documented out-of-pocket expenses and costs of the Holder (including, without limitation, the reasonable and documented attorney fees and expenses of counsel for the Holder) in connection with the preparation, negotiation, execution and approval of this Agreement and the transactions contemplated hereby and, promptly following any invoice thereof, the Company shall promptly pay all reasonable and documented out-of-pocket expenses and costs of the Holder incurred in connection with the release and termination of security interests relating to the Initial Registered Notes and the Initial Private Placement Notes.
7. By no later than 9:15 a.m., New York City on the first business day following the Closing Date, the Company shall file a Current Report on Form 8-K disclosing all the material terms of the transactions contemplated by this Agreement (the “**Form 8-K**”). From and after the issuance of the Form 8-K, the Company shall have disclosed all material, nonpublic information (if any) provided to the Holder by the Company or any of its subsidiaries or any of their respective officers, directors, employees or agents and neither the Holder nor any of its officers, directors, employees or agents shall be in possession of any material, non-public information regarding the Company or any of its Subsidiaries. In addition, the Company acknowledges and agrees that, upon the issuance of the Form 8-K, neither Holder nor any of its affiliates shall be under any confidentiality or similar obligations under any agreement with respect to the Company or any of its Subsidiaries.
8. Subject to the occurrence of the Closing Date, the Company releases the Holder from any and all obligations owing under or in connection with the Initial Registered Notes and the Initial Private Placement Notes and releases the Holder and each of its affiliates and each of their respective agents, officers, directors and employees from any and all claims, liabilities, damages, costs and expenses now existing, whether known or unknown, arising out of or in connection with the Securities Purchase Agreement, the Initial Registered Notes or the Initial Private Placement Notes.
9. In the event that the transactions contemplated hereby are not consummated by the Closing Date, the Holder may terminate this Agreement by written notice to the Company.

The agreement set forth in this Agreement is limited to the extent specifically set forth above and shall in no way serve to amend or waive compliance with any terms, covenants or provisions of the Securities Purchase Agreement or the Notes, other than as expressly set forth above.

Any breach of the terms and conditions of this Agreement will constitute an Event of Default under and as defined by the Notes.

[Signature Pages Follow]

This letter agreement may be executed in any number of counterparts and by different parties hereto in separate counterparts, each of which when so executed and delivered shall be deemed an original, but all of which counterparts together shall constitute but one and the same instrument.

Very truly yours,

BIONANO GENOMICS, INC.

By: /s/ R. Erik Holmlin

Name: R. Erik Holmlin

Title: President and Chief Executive Officer

AGREED AND ACCEPTED:

HIGH TRAIL SPECIAL SITUATIONS LLC

By: /s/ Eric Helenek
Name: Eric Helenek
Title: Authorized Signatory

Bionano Announces Private Placement of Senior Secured Notes in Debt Restructuring that Improves Balance Sheet

Provides significant financial flexibility by` retiring near-term debt maturities, deferring principal redemption payments, and further reducing near-term cash needs.

SAN DIEGO, May 28, 2024 (GLOBE NEWSWIRE) – Bionano Genomics Inc. (“Bionano” or the “Company”) (NASDAQ: BNGO) today announced that it has completed a private placement of senior secured convertible debentures due May 24, 2026. The Company received gross proceeds of \$18.0 million in connection with the placement, which will allow the Company to completely retire the convertible debt financing previously entered into first in October 2023, and then subsequently amended in February 2024.

This new financing reinforces the strategic plan set out by the Company in February 2024, by strengthening its capital structure, improving its liquidity position, and enhancing the Company’s ability to continue to drive adoption and utilization of optical genome mapping while it continues to review strategic alternatives to maximize shareholder value.

Additional information regarding the private placement and the terms of the debentures will be set forth in a Current Report on Form 8-K to be filed by the Company with the SEC.

Canaccord Genuity acted as exclusive financial advisor and placement agent to the Company for the offering.

The offer and sale of the foregoing securities did not involve a public offering and were not registered under the Securities Act of 1933, as amended (the “Securities Act”), or applicable state securities laws. The securities may not be offered or sold in the United States absent registration or pursuant to an exemption from the registration requirements of the Securities Act and applicable state securities laws.

This press release does not constitute an offer to sell or the solicitation of an offer to buy the securities in the described offering, nor shall there be any offer, solicitation or sale of the securities in any jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such jurisdiction.

Cautionary Statement Regarding Forward-Looking Statements

This press release contains forward-looking statements within the meaning of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. All statements other than statements of historical facts contained in this press release, including statements regarding our future results of operations or financial condition, business strategy and plans, and objectives of management for future operations, are forward-looking statements. Words such as “anticipate”, “believe,” “could”, “estimate,” “expect,” “intend,” “may,” “plan,” “potential”, “predict,” “project,” “should,” “target,” “will,” or “would” and similar expressions (as well as other words or expressions referencing future events, conditions or circumstances) convey uncertainty of future events or outcomes and are intended to identify these forward-looking statements. Forward-looking statements include statements regarding our intentions, beliefs, projections, outlook, analyses or current expectations concerning, among other things: the consummation of the private placement convertible note financing and the use of proceeds therefrom. Each of these forward-looking statements involves risks and uncertainties. Accordingly, investors and prospective investors are cautioned not to place undue reliance on these forward-looking statements as they involve inherent risk and uncertainty (both general and specific) and should note that they are provided as a general guide only and should not be relied on as an indication or guarantee of future performance. Actual results or developments may differ materially from those projected or implied in these forward-looking statements. Factors that may cause such a difference include the risks and uncertainties associated with: the timing and amount of revenue we are able to recognize in a given fiscal period; our ability to obtain sufficient financing to fund our strategic plans and commercialization efforts and our ability to continue as a “going concern”; the impact of adverse geopolitical and macroeconomic events, such as the ongoing conflicts between Ukraine and Russia and Israel and Gaza and uncertain market conditions, including inflation and supply chain disruptions, on our business and the global economy; general market conditions; changes in the competitive landscape and the introduction of competitive technologies or improvements to existing technologies; changes in our strategic and commercial plans; the ability of medical and research institutions to obtain funding to support adoption or continued use of our technologies; study results that differ or contradict the results mentioned in this press release; the risk that we are not able to complete a strategic transaction that would increase stakeholder value; and the risks and uncertainties associated with our business and financial condition in general, including the risks and uncertainties described in our filings with the Securities and Exchange Commission, including, without limitation, our Annual Report on Form 10-K for the year ended December 31, 2023 and in other filings subsequently made by us with the Securities and Exchange Commission. All forward-looking statements contained in this press release speak only as of the date on which they were made and are based on management’s assumptions and estimates as of such date. We do not undertake any obligation to publicly update any forward-looking statements, whether as a result of the receipt of new information, the occurrence of future events or otherwise.

About Bionano Genomics

Bionano is a provider of genome analysis solutions that can enable researchers and clinicians to reveal answers to challenging questions in biology and medicine. The Company’s mission is to transform the way the world sees the genome through OGM solutions, diagnostic services and software. The Company offers OGM solutions for applications across basic, translational and clinical research. Through its Lineagen, Inc. d/b/a Bionano Laboratories business, the Company also provides diagnostic testing for patients with clinical presentations consistent with autism spectrum disorder and other neurodevelopmental disabilities. The Company also offers an industry-leading, platform-agnostic software solution, which integrates next-generation sequencing and microarray data designed to provide analysis, visualization, interpretation and reporting of copy number variants, single-nucleotide variants and absence of heterozygosity across the genome in one consolidated view. The Company additionally offers nucleic acid extraction and purification solutions using proprietary isotachopheresis (ITP) technology. For more information, visit www.bionano.com, www.bionanolaboratories.com or www.purigenbio.com.

Bionano’s OGM products are for research use only and not for use in diagnostic procedures.

Investor Relations Contact:

Company Contact:

Erik Holmlin, CEO

Bionano Genomics, Inc.

+1 (858) 888-7610

eholmlin@bionano.com

Investor Relations:

David R. Holmes

Gilmartin Group

+1 (858) 366-3243

david.holmes@gilmartinir.com
