UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, DC 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)
November 10, 2026

Pacific Biosciences of California, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**001-34899**	**16-1590339**
(State or other jurisdiction of incorporation)	**(Commission File Number)**	**(IRS Employer Identification No.)**

1305 O'Brien Drive
Menlo Park, California 94025
(Address of principal executive offices) (Zip Code)

(650) 521-8000
(Registrant's telephone number, including area code)

(Former name or former address, if changed since last report)

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

☐ Written communications pursuant to Rule 425 under the Securities Act (17 CFR 230.425)

☐ Soliciting material pursuant to Rule 14a-12 under the Exchange Act (17 CFR 240.14a-12)

☐ Pre-commencement communications pursuant to Rule 14d-2(b) under the Exchange Act (17 CFR 240.14d-2(b))

☐ Pre-commencement communications pursuant to Rule 13e-4(c) under the Exchange Act (17 CFR 240.13e-4(c))

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, par value $0.001 per share	**PACB**	**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.

On November 10, 2026, Pacific Biosciences of California, Inc. (the "Company") entered into a Sales Agreement (the "Sales Agreement") with Allen & Company LLC ("Allen") to sell shares of the Company's common stock, par value $0.001 per share (the "Common Stock"), having aggregate sales proceeds of up to $100,000,000 (the "Shares"), from time to time, through an "at-the-market" equity offering program under which Allen will act as sales agent.

Under the Sales Agreement, the Company will set the parameters for the sale of the Shares, including the number or dollar amount of Shares to be issued, the time period during which sales are requested to be made, limitations on the number or dollar amount of the Shares that may be sold in any one trading day and any minimum price below which sales may not be made. Subject to the terms and conditions of the Sales Agreement, Allen may sell the Shares by methods deemed to be an "at the market" offering as defined in Rule 415 promulgated under the Securities Act of 1933, as amended (the "Securities Act"). Allen agreed to use commercially reasonable efforts in conducting such sales activities consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of the Nasdaq Stock Market. The Sales Agreement may be terminated by the Company upon ten days' notice to Allen for any reason or by Allen upon ten days' notice to the Company for any reason, or immediately under certain circumstances, including but not limited to the occurrence of a material adverse change in the Company.

The Sales Agreement provides that Allen will be entitled to compensation for its services in an amount equal to up to 3.0% of the aggregate gross proceeds from the Shares sold through Allen under the Sales Agreement. The Company has no obligation to sell any of the Shares under the Sales Agreement and may at any time suspend solicitation and offers under the Sales Agreement.

Any of the Shares to be offered and sold under the Sales Agreement will be issued and sold pursuant to the Company's automatic shelf registration statement on Form S-3ASR (File No. 333-293751), which was filed with the Securities and Exchange Commission (the "SEC") on February 25, 2026 and which became effective automatically upon filing. The Company filed a prospectus supplement with the SEC on November 10, 2026 in connection with the offer and sale of the Shares pursuant to the Sales Agreement.

The foregoing description of the Sales Agreement is not complete and is qualified in its entirety by reference to the full text of such agreement, a copy of which is filed hereto as Exhibit 1.1 to this Current Report on Form 8-K and is incorporated herein by reference.

Wilson Sonsini Goodrich & Rosati, Professional Corporation, counsel to the Company, has issued an opinion to the Company, dated November 10, 2026, relating to the validity of the Shares to be issued and sold pursuant to the Sales Agreement, a copy of which is filed as Exhibit 5.1 to this Current Report.

This Current Report shall not constitute an offer to sell or the solicitation of an offer to buy the securities discussed herein, nor shall there be any sale of such securities in any state or jurisdiction in which such offer, solicitation or sale would be unlawful prior to registration or qualification under the securities laws of any such state or jurisdiction.

ITEM 9.01. FINANCIAL STATEMENTS AND EXHIBITS.

(d) Exhibits.

1.1*	Sales Agreement, dated as of November 10, 2026, between Pacific Biosciences of California, Inc. and Allen & Company LLC.
5.1	Opinion of Wilson Sonsini Goodrich & Rosati, Professional Corporation.
23.1	Consent of Wilson Sonsini Goodrich & Rosati, Professional Corporation (included in the opinion filed as Exhibit 5.1 to this Current Report on Form 8-K).
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)

* Certain of the exhibits and schedules to this exhibit have been omitted in accordance with Regulation S-K Item 601(a)(5). The registrant agrees to furnish a copy of all omitted exhibits and schedules to the SEC upon its request.

SIGNATURE

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.

Pacific Biosciences of California, Inc.

By: /s/ Brett Atkins
Brett Atkins
General Counsel and Corporate Secretary

Date: November 10, 2026

Exhibit 1.1

Execution Version

Pacific Biosciences of California, Inc.
Shares of Common Stock
(par value $0.001 per share)

Controlled Equity Offering

Sales Agreement

November 10, 2026

Allen & Company LLC
711 Fifth Avenue
New York, NY 10022

To the addressee set forth above:

Pacific Biosciences of California, Inc., a Delaware corporation (the "**Company**"), confirms its agreement (this "**Agreement**") with Allen & Company LLC (the "**Agent**"), as follows:

1. Issuance and Sale of Shares. The Company agrees that, from time to time during the term of this Agreement, on the terms and subject to the conditions set forth herein, it may issue and sell to or through the Agent, as sales agent or principal, shares of common stock (the "**Placement Shares**") of the Company, par value $0.001 per share (the "**Common Stock**"); *provided*, *however*, that in no event shall the Company issue or sell through the Agent such number or dollar amount of Placement Shares that would (a) exceed the number or dollar amount of shares of Common Stock registered on the effective Registration Statement (defined below) pursuant to which the offering is being made, (b) exceed the number of authorized but unissued shares of Common Stock (less shares of Common Stock issuable upon exercise, conversion or exchange of any outstanding securities of the Company or otherwise reserved from the Company's authorized capital stock), (c) exceed the number or dollar amount of shares of Common Stock permitted to be sold under Form S-3 (including General Instruction I.B.6 thereof, if applicable) or (d) exceed the number or dollar amount of shares of Common Stock for which the Company has filed a Prospectus Supplement (defined below) (the lesser of (a), (b), (c) and (d), the "**Maximum Amount**"). Notwithstanding anything to the contrary contained herein, the parties hereto agree that compliance with the limitations set forth in this Section 1 on the amount of Placement Shares issued and sold under this Agreement shall be the sole responsibility of the Company and that the Agent shall have no obligation in connection with such compliance; *provided* that the Agent follows the trading instructions in all material respects provided by the Company pursuant to any Placement Notice (as defined below). The offer and sale of Placement Shares through the Agent will be effected pursuant to the Registration Statement filed and declared effective by the Securities and Exchange Commission (the "**Commission**") on February 25, 2026, although nothing in this Agreement shall be construed as requiring the Company to use the Registration Statement to issue Common Stock. The Company acknowledges and agrees that sales of Placement Shares under this Agreement may be made through affiliates of the Agent, and that the Agent may otherwise fulfill its respective obligations pursuant to this Agreement to or through an affiliated broker-dealer.

The Company has filed, in accordance with the provisions of the Securities Act of 1933, as amended (the "**Securities Act**"), and the rules and regulations thereunder (the "**Securities Act Regulations**"), with the Commission an automatic shelf registration statement on Form S-3 (File No. 333-293751), including a base prospectus, relating to certain securities, including the Placement Shares to be issued from time to time by the Company, and which incorporates by reference documents that the Company has filed or will file in accordance with the provisions of the Securities Exchange Act of 1934, as amended (the "**Exchange Act**"), and the rules and regulations thereunder. The Company has prepared a prospectus or a prospectus supplement to the base prospectus included as part of the Registration Statement (as defined below), which prospectus or prospectus supplement relates to the Placement Shares to be issued from time to time by the Company (the "**Prospectus Supplement**"). The Company will furnish to the Agent, for use by the Agent, copies of the prospectus included as part of such registration statement, as supplemented by the Prospectus Supplement, relating to the Placement Shares to be issued from time to time by the Company. Except where the context otherwise requires, such registration statement(s), and any post-effective amendments thereto, including all documents filed as part thereof or incorporated by reference therein, and including any information contained in a Prospectus (as defined below) subsequently filed with the Commission pursuant to Rule 424(b) under the Securities Act Regulations or deemed to be a part of such registration statement pursuant to Rule 430B or 462(b) of the Securities Act Regulations, and any one or more additional effective registration statements on Form S-3 from time to time that will contain a base prospectus and related prospectus or prospectus supplement, if applicable (which shall be a Prospectus Supplement), with respect to the Placement Shares, is herein called the "**Registration Statement**." The base prospectus or base prospectuses, including all documents incorporated therein by reference, included in the Registration Statement, as it may be supplemented, if necessary, by the Prospectus Supplement, in the form in which such prospectus or prospectuses and/or Prospectus Supplement have most recently been filed by the Company with the Commission pursuant to Rule 424(b) under the Securities Act Regulations, together with the then-issued Issuer Free Writing Prospectus(es) (as defined below), is herein called the "**Prospectus**."

Any reference herein to the Registration Statement, any Prospectus Supplement, the Prospectus or any Issuer Free Writing Prospectus shall be deemed to refer to and include the documents, if any, incorporated by reference therein (the "**Incorporated Documents**"), including, unless the context otherwise requires, the documents, if any, filed as exhibits to such Incorporated Documents. Any reference herein to the terms "amend," "amendment" or "supplement" with respect to the Registration Statement, any Prospectus Supplement, the Prospectus or any Issuer Free Writing Prospectus shall be deemed to refer to and include the filing of any document with the Commission under the Exchange Act on or after the most-recent effective date of the Registration Statement, or the date of the Prospectus Supplement, Prospectus or such Issuer Free Writing Prospectus, as the case may be, and incorporated therein by reference. For purposes of this Agreement, all references to the Registration Statement, the Prospectus or to any amendment or supplement thereto shall be deemed to include the most recent copy filed with the Commission pursuant to its Electronic Data Gathering Analysis and Retrieval system, or if applicable, the Interactive Data Electronic Application system when used by the Commission (collectively, "**EDGAR**").

2. Placements. Each time that the Company wishes to issue and sell Placement Shares hereunder (each, a "**Placement**"), it will notify the Agent by email notice (or other method mutually agreed to by the parties) of the number of Placement Shares to be issued, the time period during which sales are requested to be made, any limitation on the number of Placement Shares that may be sold in any one day and any minimum price below which sales may not be made (a "**Placement Notice**"), the form of which is attached hereto as Schedule 1. The Placement Notice shall originate from any of the individuals from the Company set forth on Schedule 3 (with a copy to each of the other individuals from the Company listed on such schedule), and shall be addressed to each of the individuals from the Agent set forth on Schedule 3, as such Schedule 3 may be amended from time to time. The Placement Notice shall be effective unless and until (i) the Agent declines in writing to accept the terms contained therein for any reason, in its sole discretion, in which case the Agent shall, within two (2) Trading Days of the receipt of such Placement Notice, notify the Company (by email notice or other method mutually agreed by the parties), (ii) the entire amount of the Placement Shares thereunder have been sold, (iii) the Company suspends or terminates the Placement Notice for any reason, in its sole discretion, (iv) the Company issues a subsequent Placement Notice with parameters superseding those in the earlier dated Placement Notice for any reason, in its sole discretion, or (v) this Agreement has been terminated under the provisions of Section 12. The amount of any discount, commission or other compensation to be paid by the Company to the Agent in connection with the sale of the Placement Shares shall be calculated in accordance with the terms set forth in Schedule 2. It is expressly acknowledged and agreed that neither the Company nor the Agent will have any obligation whatsoever with respect to a Placement or any Placement Shares unless and until the Company delivers a Placement Notice to the Agent and the Agent does not decline such Placement Notice pursuant to the terms set forth above, and then only upon the terms specified therein and herein. In the event of a conflict between the terms of this Agreement and the terms of a Placement Notice, the terms of the Placement Notice will control.

3. Sale of Placement Shares by the Agent. Subject to the provisions of Section 5(a), the Agent, for the period specified in the Placement Notice, will use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable state and federal laws, rules and regulations and the rules of the Nasdaq Global Select Market (the "**Nasdaq**"), to sell the Placement Shares up to the amount specified in, and otherwise in accordance with the terms of, such Placement Notice. The Agent will provide prompt written confirmation to the Company no later than the opening of the Trading Day (as defined below) immediately following the Trading Day on which it has made sales of Placement Shares hereunder setting forth the number of Placement Shares sold on such day, the volume-weighted average price of the Placement Shares sold on such day, the compensation payable by the Company to the Agent pursuant to Section 2 with respect to such sales, and the Net Proceeds (as defined below) payable to the Company, with an itemization of the deductions made by the Agent (as set forth in Section 5(b)) from the gross proceeds that it receives from such sales. Subject to the terms of the Placement Notice, the Agent may sell Placement Shares by any method permitted by law deemed to be an "at the market offering" as defined in Rule 415(a)(4) of the Securities Act Regulations. "**Trading Day**" means any day on which Common Stock is traded on the Nasdaq.

4. Suspension of Sales. The Company or the Agent may, upon notice to the other party in writing (including by email correspondence to each of the individuals of the other party set forth on Schedule 3, if receipt of such correspondence is actually acknowledged by any of the individuals to whom the notice is sent, other than via auto-reply) or by telephone (confirmed immediately by email correspondence to each of the individuals of the other party set forth on Schedule 3), suspend any sale of Placement Shares (a "**Suspension**"); *provided*, *however*, that such Suspension shall not affect or impair any party's obligations with respect to any Placement Shares sold hereunder prior to the receipt of such notice. While a Suspension is in effect any obligation under Sections 7(l), 7(m), and 7(n) with respect to the delivery of certificates, opinions, or comfort letters to the Agent shall be waived. Each of the parties agrees that no such notice under this Section 4 shall be effective against any other party unless it is made to one of the individuals named on Schedule 3 hereto, as such Schedule may be amended from time to time. Notwithstanding any other provision of this Agreement, during any period (x) in which the Company is in possession of material non-public information or (y) commencing on the business day prior to the time the Company issues a press release containing or shall otherwise publicly announce, its earnings, revenues or other operating results for the fiscal period or periods (each, an "**Earnings Announcement**") through and including the second (2nd) full Trading Day following the Earnings Announcement, the Company and the Agent agree that (i) no sale of Placement Shares will take place, (ii) the Company shall not request the sale of any Placement Shares, and (iii) the Agent shall not be obligated to sell or offer to sell any Placement Shares. Notwithstanding clause (y) above, the Company may instruct the Agent to sell, and the Agent may sell, Placement Shares during the period described in clause (y) if (A) the Company has publicly disclosed its earnings, revenues or other operating results for the applicable fiscal period (whether in a Quarterly Report on Form 10-Q, an Annual Report on Form 10-K or a Current Report on Form 8-K), (B) the Company has delivered to the Agent the certificate, opinion and comfort letter (or CFO Certificate) contemplated by Sections 7(l), 7(m) and 7(n) with respect to such period, (C) an authorized officer of the Company has represented to the Agent that the Company is not in possession of material non-public information, and (D) the Company shall have furnished to the Agent such further certificates and documents as the Agent may reasonably request.

5. Sale and Delivery to the Agent; Settlement.

(a) Sale of Placement Shares. On the basis of the representations and warranties herein contained and subject to the terms and conditions herein set forth, upon the Agent's acceptance of the terms of a Placement Notice, and unless the sale of the Placement Shares described therein has been declined, suspended, or otherwise terminated in accordance with the terms of this Agreement, the Agent, for the period specified in the Placement Notice, will use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable law and regulations to sell such Placement Shares up to the amount specified, and otherwise in accordance with the terms of such Placement Notice. The Company acknowledges and agrees that (i) there can be no assurance that the Agent will be successful in selling Placement Shares, (ii) the Agent will incur no liability or obligation to the Company or any other person or entity if it does not sell Placement Shares for any reason other than a failure by the Agent to use its commercially reasonable efforts consistent with its normal trading and sales practices and applicable law and regulations to sell such Placement Shares as required under this Agreement and (iii) the Agent shall be under no obligation to purchase Placement Shares on a principal basis pursuant to this Agreement, except as otherwise agreed in writing by the Agent and the Company.

(b) Settlement of Placement Shares. Unless otherwise specified in the applicable Placement Notice, settlement for sales of Placement Shares will occur on the first (1st) Trading Day (or such earlier day as is industry practice for regular-way trading) following the date on which such sales are made (each, a "**Settlement Date**"). The Agent shall notify the Company of each sale of Placement Shares no later than the opening of the Trading Day immediately following the Trading Day on which it has made sales of Placement Shares hereunder. The amount of proceeds to be delivered to the Company on a Settlement Date against receipt of the Placement Shares sold (the "**Net Proceeds**") will be equal to the aggregate sales price received by the Agent, after deduction for (i) the Agent's commission, discount or other compensation for such sales payable by the Company pursuant to Section 2 hereof, and (ii) any transaction fees imposed by any Governmental Authority in respect of such sales.

(c) Delivery of Placement Shares. On or before each Settlement Date, the Company will, or will cause its transfer agent to, electronically transfer the Placement Shares being sold by crediting the Agent's or its designee's account (provided the Agent shall have given the Company written notice of such designee at least one Trading Day prior to the Settlement Date) at The Depository Trust Company through its Deposit and Withdrawal at Custodian ("**DWAC**") System or by such other means of delivery as may be mutually agreed upon by the parties hereto which in all cases shall be freely tradable, transferable, registered shares in good deliverable form. On each Settlement Date, the Agent will deliver the related Net Proceeds in same day funds to an account designated by the Company on or prior to the Settlement Date. The Agent will be responsible for providing DWAC instructions or instructions for delivery by other means with regard to the transfer of the Placement Shares being sold. The Company agrees that if the Company, or its transfer agent (if applicable), defaults in its obligation to deliver Placement Shares on a Settlement Date, the Company agrees that in addition to and in no way limiting the rights and obligations set forth in Section 10(a) hereto, it will (i) hold the Agent harmless against any loss, claim, damage, or documented expense (including reasonable and documented legal fees and expenses), as incurred, arising out of or in connection with such default by the Company or its transfer agent (if applicable) and (ii) pay to the Agent (without duplication) any commission, discount, or other compensation to which it would otherwise have been entitled absent such default.

(d) Denominations; Registration. Certificates for the Placement Shares, if any, shall be in such denominations and registered in such names as the Agent may request in writing at least one full Business Day (as defined below) before the applicable Settlement Date. The certificates for the Placement Shares, if any, will be made available by the Company for examination and packaging by the Agent in The City of New York not later than noon (New York time) on the Business Day prior to the applicable Settlement Date.

(e) Limitations on Offering Size. Under no circumstances shall the Company cause or permit the offer or sale of any Placement Shares if, after giving effect to the sale of such Placement Shares, the aggregate gross sales proceeds of Placement Shares sold pursuant to this Agreement would exceed the lesser of (A) together with all sales of Placement Shares under this Agreement, the Maximum Amount and (B) the amount authorized from time to time to be issued and sold under this Agreement by the Company's board of directors, a duly authorized committee thereof or a duly authorized executive committee, which authorized amount has been notified to the Agent in writing. Under no circumstances shall the Company cause or request the offer or sale of any Placement Shares pursuant to this Agreement at a price lower than the minimum price authorized from time to time by the Company's board of directors, a duly authorized committee thereof or a duly authorized executive committee.

(f) Block Sales. In the event the Company engages the Agent for a sale of Placement Shares that would constitute a "block" within the meaning of Rule 10b-18(a)(5) under the Exchange Act (a "**Block Sale**"), the Company will provide the Agent, at the Agent's request and upon reasonable advance notice to the Company, on or prior to the Settlement Date, the opinions of counsel, accountant's letter and officers' certificates set forth in Section 7 hereof, each dated the Settlement Date, and such other documents and information as the Agent shall reasonably request and as are usually and customarily furnished pursuant to a securities offering.

6. Representations and Warranties. The Company represents and warrants to the Agent as of the date of this Agreement and as of each Applicable Time (as defined below), unless such representation, warranty or agreement specifies a different time, as follows:

(a) Registration Statement and Prospectus. The Company and the transactions contemplated by this Agreement meet the requirements for and comply with the applicable conditions set forth in Form S-3 (including General Instructions I.A and I.B) under the Securities Act. The Registration Statement has been filed with the Commission and has been declared effective by the Commission under the Securities Act. The Registration Statement is effective. The Prospectus Supplement will name the Agent as the agent in the section entitled "Plan of Distribution." The Company has not received, and has no notice of, any order of the Commission preventing or suspending the use of the Registration Statement, or threatening or instituting proceedings for that purpose. The Registration Statement and the offer and sale of Placement Shares as contemplated hereby meet the requirements of Rule 415 under the Securities Act and comply in all material respects with said Rule. Any statutes, regulations, contracts or other documents that are required to be described in the Registration Statement or the Prospectus or to be filed as exhibits to the Registration Statement have been so described or filed. Copies of the Registration Statement, the Prospectus, and any such amendments or supplements and all documents incorporated by reference therein that were filed with the Commission on or prior to the date of this Agreement have been delivered, or are available through EDGAR, to the Agent and its counsel. The Company has not distributed and, prior to the later to occur of each Settlement Date and completion of the distribution of the Placement Shares, will not distribute any offering material in connection with the offering or sale of the Placement Shares other than the Registration Statement and the Prospectus and any Issuer Free Writing Prospectus to which the Agent has consented, such consent not to be unreasonably withheld, conditioned or delayed. The Common Stock is registered pursuant to Section 12(b) of the Exchange Act and is currently listed on the Nasdaq under the trading symbol "PACB." The Company has taken no action designed to, or likely to have the effect of, terminating the registration of the Common Stock under the Exchange Act or delisting the Common Stock from the Nasdaq, nor has the Company received any notification that the Commission or the Nasdaq is contemplating terminating such registration or listing. To the Company's knowledge, it is in compliance with all applicable listing requirements of the Nasdaq.

(b) No Misstatement or Omission. The Registration Statement, when it became effective, and the Prospectus, and any amendment or supplement thereto, on the date of such Prospectus or amendment or supplement, conformed and will conform in all material respects with the requirements of the Securities Act. At each Settlement Date, the Registration Statement and the Prospectus, as of such date, will conform in all material respects with the requirements of the Securities Act. The Registration Statement, when it became effective, did not contain an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading. The Prospectus and any amendment and supplement thereto related to the Placement Shares, on the date thereof and at each Applicable Time (defined below), did not or will not include an untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading. The documents incorporated by reference in the Prospectus or any Prospectus Supplement did not, and any further documents filed and incorporated by reference therein will not, when filed with the Commission, contain an untrue statement of a material fact or omit to state a material fact required to be stated in such document or necessary to make the statements in such document, in the light of the circumstances under which they were made, not misleading. The foregoing shall not apply to statements in, or omissions from, any such document made in reliance upon, and in conformity with, information furnished to the Company by the Agent in writing specifically for use in the preparation thereof, it being understood and agreed that the only such information furnished by the Agent to the Company consists of "Agent Information" as defined below.

(c) Conformity with the Securities Act and Exchange Act. The Registration Statement, the Prospectus, any Issuer Free Writing Prospectus or any amendment or supplement thereto, and the documents incorporated by reference in the Registration Statement, the Prospectus or any amendment or supplement thereto, when such documents were or are filed with the Commission under the Securities Act or the Exchange Act or became or become effective under the Securities Act, as the case may be, conformed or will conform in all material respects with the requirements of the Securities Act and the Exchange Act, as applicable.

(d) Market Capitalization. At the time the Registration Statement was originally declared effective, and at the time the Company's most recent Annual Report on Form 10-K was filed with the Commission, the Company met the then applicable requirements for the use of Form S-3 under the Securities Act, including, but not limited to, General Instruction I.B.1 of Form S-3. The Company is not a shell company (as defined in Rule 405 under the Securities Act) and has not been a shell company for at least 12 calendar months previously and if it has been a shell company at any time previously, has filed current Form 10 information (as defined in Instruction I.B.6 of Form S-3) with the Commission at least 12 calendar months previously reflecting its status as an entity that is not a shell company.

(e) Distribution of Offering Material by the Company. Prior to the later of (i) each Settlement Date and (ii) the completion of the distribution of the Placement Shares, neither the Company nor the Agent has distributed nor will distribute any offering material in connection with the offering and sale of the Placement Shares other than the Registration Statement, the Prospectus and any Permitted Free Writing Prospectus (as defined below).

(f) Financial Information. The consolidated financial statements of the Company included or incorporated by reference in the Registration Statement and the Prospectus and the Issuer Free Writing Prospectus, if any, together with the related notes and schedules, present fairly, in all material respects, the consolidated financial position of the Company and the Subsidiaries (as defined below) as of the dates indicated and the consolidated results of operations, cash flows and changes in stockholders' equity of the Company for the periods specified and have been prepared in compliance in all material respects with the requirements of the Securities Act and Exchange Act and in conformity with U.S. generally accepted accounting principles ("**GAAP**") applied on a consistent basis during the periods involved, except as may be expressly stated in the related notes thereto; the other financial and statistical data with respect to the Company and the Subsidiaries (as defined below) contained or incorporated by reference in the Registration Statement, the Prospectus and the Issuer Free Writing Prospectuses, if any, are accurately and fairly presented in all material respects and prepared on a basis consistent with the financial statements and books and records of the Company; there are no financial statements (historical or pro forma) that are required to be included or incorporated by reference in the Registration Statement and the Prospectus that are not included or incorporated by reference as required; the Company and the Subsidiaries (as defined below) do not have any material liabilities or obligations, direct or contingent (including any off-balance sheet obligations), not described in the Registration Statement (excluding the exhibits thereto) and the Prospectus; and all disclosures contained or incorporated by reference in the Registration Statement, the Prospectus and the Issuer Free Writing Prospectuses, if any, regarding "non-GAAP financial measures" (as such term is defined by the rules and regulations of the Commission) comply with Regulation G of the Exchange Act and Item 10 of Regulation S-K under the Securities Act, to the extent applicable. The interactive data in eXtensible Business Reporting Language included or incorporated by reference in the Registration Statement and the Prospectus fairly presents the information called for in all material respects and has been prepared in accordance with the Commission's rules and guidelines applicable thereto.

(g) Conformity with EDGAR Filing. The Prospectus delivered to the Agent for use in connection with the sale of the Placement Shares pursuant to this Agreement will be identical to the versions of the Prospectus created to be transmitted to the Commission for filing via EDGAR, except to the extent permitted by Regulation S-T.

(h) Organization. The Company and each of its Subsidiaries (as defined below) are duly organized, validly existing as a corporation and in good standing under the laws of their respective jurisdictions of organization. The Company and each of its Subsidiaries (as defined below) are duly licensed or qualified as a foreign corporation for transaction of business and in good standing under the laws of each other jurisdiction in which their respective ownership or lease of property or the conduct of their respective businesses requires such license or qualification, and have all corporate power and authority necessary to own or hold their respective properties and to conduct their respective businesses as described in the Registration Statement and the Prospectus, except where the failure to be so qualified or in good standing or have such power or authority would not, individually or in the aggregate, have a material adverse effect or reasonably be expected to have a material adverse effect on or materially adversely affect the assets, business, operations, earnings, properties, condition (financial or otherwise), prospects, stockholders' equity or results of operations of the Company and the Subsidiaries (as defined below) taken as a whole, or prevent or materially interfere with consummation of the transactions contemplated hereby (a "**Material Adverse Effect**").

(i) Subsidiaries. The subsidiaries set forth on Exhibit 21 to the Company's most recent Annual Report on Form 10-K (collectively, the "**Subsidiaries**") are the Company's only significant subsidiaries (as such term is defined in Rule 1-02 of Regulation S-X promulgated by the Commission). Except as set forth in the Registration Statement and the Prospectus, the Company owns, directly or indirectly, all of the equity interests of the Subsidiaries free and clear of any lien, charge, security interest, encumbrance, right of first refusal or other restriction, and all the equity interests of the Subsidiaries are validly issued and are fully paid, nonassessable and free of preemptive and similar rights. No Subsidiary is currently prohibited, directly or indirectly, from paying any dividends to the Company, from making any other distribution on such Subsidiary's capital stock, from repaying to the Company any loans or advances to such Subsidiary from the Company or from transferring any of such Subsidiary's property or assets to the Company or any other Subsidiary of the Company other than as disclosed in the Registration Statement or the Prospectus.

(j) No Violation or Default. None of the Company, any of its Subsidiaries, the issue and sale of the Placement Shares and the compliance by the Company with this Agreement nor the consummation of the transactions contemplated in this Agreement and the Prospectus is (i) in violation of its charter or by-laws or similar organizational documents; (ii) in default, and no event has occurred that, with notice or lapse of time or both, would constitute such a default, in the due performance or observance of any term, covenant or condition contained in any indenture, mortgage, deed of trust, loan agreement or other agreement or instrument to which the Company or any of its Subsidiaries is a party or by which the Company or any of its Subsidiaries is bound or to which any of the property or assets of the Company or any of its Subsidiaries are subject; or (iii) in violation of any law or statute or any judgment, order, rule or regulation of any Governmental Authority, except, in the case of each of clauses (ii) and (iii) above, for any such violation or default that would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(k) No Material Adverse Change. Subsequent to the respective dates as of which information is given in the Registration Statement, the Prospectus and the Issuer Free Writing Prospectuses, if any (including any document deemed incorporated by reference therein), there has not been (i) any Material Adverse Effect or the occurrence of any development that the Company reasonably expects will result in a Material Adverse Effect, (ii) any transaction which is material to the Company and the Subsidiaries taken as a whole, (iii) any obligation or liability, direct or contingent (including any off-balance sheet obligations), incurred by the Company or any Subsidiary, which is material to the Company and the Subsidiaries taken as a whole, (iv) any material change in the capital stock (other than as a result of (a) the exercise, if any, of stock options or the award, if any, of stock options or restricted stock in the ordinary course of business pursuant to the Company's equity plans that are described in the Prospectus or (b) the issuance, if any, of stock, including upon conversion of Company securities, as described in the Prospectus) or outstanding long-term indebtedness of the Company or any of its Subsidiaries or (v) any dividend or distribution of any kind declared, paid or made on the capital stock of the Company or any Subsidiary, other than in each case above in the ordinary course of business or as otherwise disclosed in the Registration Statement or Prospectus (including any document deemed incorporated by reference therein).

(l) Capitalization. The issued and outstanding shares of capital stock of the Company have been validly issued, are fully paid and nonassessable and, other than as disclosed in the Registration Statement or the Prospectus, are not subject to any preemptive rights, rights of first refusal or similar rights. The Company has an authorized, issued and outstanding capitalization as set forth in the Registration Statement and the Prospectus as of the dates referred to therein (other than the grant of additional options, restricted stock units or similar equity securities under the Company's existing stock option plans, or changes in the number of outstanding shares of Common Stock of the Company due to the issuance of shares upon the exercise or conversion of securities exercisable for, or convertible into, Common Stock outstanding on the date hereof) and such authorized capital stock conforms in all material respects to the description thereof set forth in the Registration Statement and the Prospectus. The description of the securities of the Company in the Registration Statement and the Prospectus is complete and accurate in all material respects. Except as disclosed in or contemplated by the Registration Statement or the Prospectus, as of the date referred to therein, the Company does not have outstanding any options to purchase, or any rights or warrants to subscribe for, or any securities or obligations convertible into, or exchangeable for, or any contracts or commitments to issue or sell, any shares of capital stock or other securities.

(m) Authorization; Enforceability. The Company has full legal right, power and authority to enter into this Agreement and perform the transactions contemplated hereby. This Agreement has been duly authorized, executed and delivered by the Company and is a legal, valid and binding agreement of the Company enforceable in accordance with its terms, except to the extent that enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors' rights generally and by general equitable principles.

(n) Authorization of the Placement Shares. The Placement Shares have been duly authorized for issuance and sale pursuant to this Agreement and, when issued and delivered pursuant to the terms approved by the board of directors of the Company or a duly authorized committee thereof, or a duly authorized executive committee, against payment therefor as provided herein, will be duly authorized and validly issued, fully paid and nonassessable, free and clear of any pledge, lien, encumbrance, security interest or other claim, including any statutory or contractual preemptive rights, resale rights, rights of first refusal or other similar rights, and will be registered pursuant to Section 12 of the Exchange Act. The Placement Shares, when issued, will conform in all material respects to the description thereof set forth in or incorporated into the Registration Statement and the Prospectus.

(o) No Consents Required. No consent, approval, authorization, order, registration or qualification of or with any Governmental Authority is required for the execution, delivery and performance by the Company of this Agreement, the issuance and sale by the Company of the Placement Shares or the consummation by the Company of the transaction contemplated by this Agreement, except for such consents, approvals, authorizations, orders and registrations or qualifications as may be required under applicable state securities laws or by the by-laws and rules of the Financial Industry Regulatory Authority ("**FINRA**") or the Nasdaq in connection with the sale of the Placement Shares.

(p) No Preferential Rights. Except as set forth in the Registration Statement and the Prospectus, or except as otherwise waived in writing prior to the date hereof, (i) no person, as such term is defined in Rule 1-02 of Regulation S-X promulgated under the Securities Act (each, a "**Person**"), has the right, contractual or otherwise, to cause the Company to issue or sell to such Person any Common Stock or shares of any other capital stock or other securities of the Company, (ii) no Person has any preemptive rights, resale rights, rights of first refusal, rights of co-sale, or any other rights (whether pursuant to a "poison pill" provision or otherwise) to purchase any Common Stock or shares of any other capital stock or other securities of the Company, (iii) no Person has the right to act as a sales agent or principal or financial advisor to the Company in connection with the offer and sale of the Placement Shares, and (iv) no Person has the right, contractual or otherwise, to require the Company to register under the Securities Act any Common Stock or shares of any other capital stock or other securities of the Company, or to include any such shares or other securities in the Registration Statement or the offering contemplated thereby, whether as a result of the filing or effectiveness of the Registration Statement or the sale of the Placement Shares as contemplated thereby or otherwise.

(q) Independent Public Accounting Firm. Ernst & Young LLP (the "**Accountant**"), whose report on the consolidated financial statements of the Company is filed with the Commission as part of the Company's most recent Annual Report on Form 10-K filed with the Commission and incorporated by reference into the Registration Statement and the Prospectus, is and, during the periods covered by its report, was an independent registered public accounting firm within the meaning of the Securities Act and the Public Company Accounting Oversight Board (United States). To the Company's knowledge, the Accountant is not in violation of the auditor independence requirements of the Sarbanes-Oxley Act of 2002 (the "**Sarbanes-Oxley Act**") with respect to the Company.

(r) Enforceability of Agreements. All agreements between the Company and third parties expressly referenced in the Prospectus are legal, valid and binding obligations of the Company enforceable in accordance with their respective terms, except to the extent that (i) enforceability may be limited by bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors' rights generally and by general equitable principles and (ii) the indemnification provisions of certain agreements may be limited by federal or state securities laws or public policy considerations in respect thereof.

(s) No Litigation. Except as set forth in the Registration Statement or the Prospectus, there are no legal, governmental or regulatory actions, suits or proceedings by or before any Governmental Authority pending, nor, to the Company's knowledge, any legal, governmental or regulatory audits or investigations by or before any Governmental Authority, to which the Company or a Subsidiary is a party or to which any property of the Company or any of its Subsidiaries is the subject that, individually or in the aggregate, if determined adversely to the Company or its Subsidiaries, would reasonably be expected to have a Material Adverse Effect and, to the Company's knowledge, no such actions, suits, proceedings, audits or investigations are threatened by any Governmental Authority or threatened by others; and (i) there are no current or pending legal, governmental or regulatory audits, investigations, actions, suits or proceedings by or before any Governmental Authority that are required under the Securities Act to be described in the Prospectus that are not so described; and (ii) there are no contracts or other documents that are required under the Securities Act to be filed as exhibits to the Registration Statement that are not so filed.

(t) Consents and Permits. Except as disclosed in the Registration Statement and the Prospectus, the Company and its Subsidiaries have made all filings, applications and submissions required by, possess and are operating in material compliance with, all approvals, licenses, certificates, certifications, clearances, consents, grants, exemptions, marks, notifications, orders, permits and other authorizations issued by, the appropriate federal, state or foreign Governmental Authority (including, without limitation, the United States Food and Drug Administration (the "**FDA**"), the United States Drug Enforcement Administration or any other foreign, federal, state, provincial, court or local government or regulatory authorities including self-regulatory organizations engaged in the regulation of clinical trials, pharmaceuticals, biologics or biohazardous substances or materials) necessary for the ownership or lease of their respective properties or to conduct its businesses as described in the Registration Statement and the Prospectus (collectively, "**Permits**"), except for such Permits the failure of which to possess, obtain or make the same would not reasonably be expected to have a Material Adverse Effect; the Company and its Subsidiaries are in compliance with the terms and conditions of all such Permits, except where the failure to be in compliance would not reasonably be expected to have a Material Adverse Effect; all of the Permits are valid and in full force and effect, except where any invalidity, individually or in the aggregate, would not be reasonably expected to have a Material Adverse Effect; and neither the Company nor any of its Subsidiaries has received any written notice of proceedings relating to the limitation, revocation, cancellation, suspension, modification, restriction or non-renewal of any such Permit which, singly or in the aggregate, if the subject of an unfavorable decision, ruling or finding, would have a Material Adverse Effect, or has any reason to believe that any such license, certificate, permit or authorization will not be renewed in the ordinary course, except where the failure to renew such license, certificate, permit or authorization in the ordinary course, individually or in the aggregate, would not reasonably be expected to have a Material Adverse Effect.

(u) Regulatory Filings. Except as disclosed in the Registration Statement and the Prospectus, neither the Company nor any of its Subsidiaries has failed to file with the applicable Governmental Authority (including, without limitation, the FDA, or any foreign, federal, state, provincial or local Governmental Authority performing functions similar to those performed by the FDA) any required filing, declaration, listing, registration, report or submission, except for such failures that, individually or in the aggregate, would not reasonably be expected to have a Material Adverse Effect; except as disclosed in the Registration Statement and the Prospectus, all such filings, declarations, listings, registrations, reports or submissions were in compliance with applicable laws when filed and no deficiencies have been asserted by any applicable regulatory authority with respect to any such filings, declarations, listings, registrations, reports or submissions, except for any deficiencies that, individually or in the aggregate, would not have a Material Adverse Effect.

(v) Intellectual Property. Except as disclosed in, or incorporated by reference into, the Registration Statement and the Prospectus, to the Company's knowledge, the Company and its Subsidiaries own, possess, license or have other rights to use, or could obtain on commercially reasonable terms, all foreign and domestic patents, patent applications, trade and service marks, trade and service mark registrations, trade names, copyrights, licenses, inventions, trade secrets, technology, Internet domain names, know-how and other intellectual property (collectively, the "**Intellectual Property**"), necessary for the conduct of their respective businesses as now conducted except to the extent that the failure to own, possess, license or otherwise hold adequate rights to use such Intellectual Property would not, individually or in the aggregate, have a Material Adverse Effect. Except as disclosed in, or incorporated by reference into, the Registration Statement and the Prospectus (i) there are no rights of third parties to any such Intellectual Property owned by the Company and its Subsidiaries except for in-licensed Intellectual Property, and licenses granted in the ordinary course to third parties or rights that would not, individually or in the aggregate, reasonably be expected to result in a Material Adverse Effect; (ii) to the Company's knowledge, there is no infringement, misappropriation or other violation by third parties of any such Intellectual Property; (iii) there is no pending or, to the Company's knowledge, threatened action, suit, proceeding or claim by others challenging the Company's and its Subsidiaries' rights in or to any such Intellectual Property, and the Company is unaware of any facts which would reasonably be expected to form the basis for any such action, suit, proceeding or claim; (iv) there is no pending or, to the Company's knowledge, threatened action, suit, proceeding or claim by others challenging the validity, scope or enforceability of any such Intellectual Property; (v) there is no pending or, to the Company's knowledge, threatened action, suit, proceeding or claim by others alleging that the Company and its Subsidiaries infringe, misappropriate or otherwise violate any Intellectual Property of others; (vi) to the Company's knowledge, there is no third-party U.S. patent or published U.S. patent application which contains claims for which an Interference Proceeding (as defined in 35 U.S.C. § 135) has been commenced against any patent or patent application described in the Registration Statement and the Prospectus as being owned by or licensed to the Company; and (vii) the Company and its Subsidiaries have complied with the terms of each agreement pursuant to which Intellectual Property has been licensed to the Company or such Subsidiary, and all such agreements are in full force and effect; except, in the case of any of clauses (i)-(vii) above, for any such infringement, misappropriation or other violation by third parties, any such pending or threatened action, suit, proceeding or claim or any non-compliance as has been disclosed in the Registration Statement and the Prospectus or would not, individually or in the aggregate, reasonably be expected to result in a Material Adverse Effect.

(w) No Material Defaults. Neither the Company nor any of the Subsidiaries has defaulted on any installment on indebtedness for borrowed money or on any rental on one or more long-term leases, which defaults, individually or in the aggregate, would reasonably be expected to have a Material Adverse Effect. The Company has not filed a report pursuant to Section 13(a) or 15(d) of the Exchange Act since the filing of its last Annual Report on Form 10-K, indicating that it (i) has failed to pay any dividend or sinking fund installment on preferred stock or (ii) has defaulted on any installment on indebtedness for borrowed money or on any rental on one or more long-term leases, which defaults, individually or in the aggregate, would reasonably be expected to have a Material Adverse Effect.

(x) Certain Market Activities. Neither the Company nor any of its Subsidiaries, nor any of their respective directors, executive officers or controlling persons, has taken, directly or indirectly, any action designed to or that has constituted or might reasonably be expected to cause or result in, under the Exchange Act or otherwise, the stabilization or manipulation of the price of the Common Stock or of any "reference security" (as defined in Rule 100 of Regulation M under the Exchange Act ("**Regulation M**")) with respect to the Common Stock, whether to facilitate the sale or resale of the Placement Shares or otherwise, and has taken no action which would directly or indirectly violate Regulation M.

(y) Broker/Dealer Relationships. Neither the Company nor any of the Subsidiaries or related entities (i) is required to register as a "broker" or "dealer" in accordance with the provisions of the Exchange Act or (ii) directly or indirectly through one or more intermediaries, controls or is a "person associated with a member" or "associated person of a member" (within the meaning set forth in the FINRA Manual).

(z) Taxes. The Company and each of its Subsidiaries have filed all material federal, state, local and foreign tax returns which have been required to be filed and paid all material taxes shown thereon through the date hereof, to the extent that such taxes have become due and are not being contested in good faith. Except as otherwise disclosed in or contemplated by the Registration Statement or the Prospectus, no material tax deficiency has been determined adversely to the Company or any of its Subsidiaries. The Company has no knowledge of any material federal, state or other governmental tax deficiency, penalty or assessment which has been or might be asserted or threatened against it.

(aa) Title to Real and Personal Property. Except as set forth in the Registration Statement or the Prospectus (and other than Intellectual Property, addressed in Section 6(v) hereof), the Company and its Subsidiaries have good and marketable title in fee simple to all items of real property owned by them, good and valid title to all personal property described in the Registration Statement or the Prospectus as being owned by them that are material to the businesses of the Company or such Subsidiary, in each case free and clear of all liens, encumbrances and claims, except those matters that (i) do not materially interfere with the use made and proposed to be made of such property by the Company and any of its Subsidiaries or (ii) would not reasonably be expected, individually or in the aggregate, to have a Material Adverse Effect. Any real or personal property described in the Registration Statement or the Prospectus as being leased by the Company and any of its Subsidiaries is held by them under valid, existing and enforceable leases, except those that (A) do not materially interfere with the use made or proposed to be made of such property by the Company or any of its Subsidiaries or (B) would not be reasonably expected, individually or in the aggregate, to have a Material Adverse Effect. Each of the properties of the Company and its Subsidiaries complies with all applicable codes, laws and regulations (including, without limitation, building and zoning codes, laws and regulations and laws relating to access to such properties), except if and to the extent disclosed in the Registration Statement or the Prospectus or except for such failures to comply that would not, individually or in the aggregate, reasonably be expected to interfere in any material respect with the use made and proposed to be made of such property by the Company and its Subsidiaries or otherwise have a Material Adverse Effect. None of the Company or its Subsidiaries has received from any Governmental Authorities any notice of any condemnation of, or zoning change affecting, the properties of the Company and its Subsidiaries, and the Company knows of no such condemnation or zoning change which is threatened, except for such that would not reasonably be expected to interfere in any material respect with the use made and proposed to be made of such property by the Company and its Subsidiaries or otherwise have a Material Adverse Effect, individually or in the aggregate.

(bb) Environmental Laws. Except as set forth in the Registration Statement or the Prospectus, the Company and its Subsidiaries (i) are in compliance with any and all applicable federal, state, local and foreign laws, rules, regulations, decisions and orders relating to the protection of human health and safety, the environment or hazardous or toxic substances or wastes, pollutants or contaminants (collectively, "**Environmental Laws**"); (ii) have received and are in compliance with all permits, licenses or other approvals required of them under applicable Environmental Laws to conduct their respective businesses as described in the Registration Statement or the Prospectus; and (iii) have not received notice of any actual or potential liability for the investigation or remediation of any disposal or release of hazardous or toxic substances or wastes, pollutants or contaminants, except, in the case of any of clauses (i), (ii) or (iii) above, for any such failure to comply or failure to receive required permits, licenses, other approvals or liability as would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(cc) Disclosure Controls. The Company and each of its Subsidiaries maintain systems of internal accounting controls designed 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 generally accepted accounting principles and to maintain asset accountability; (iii) access to assets is permitted only in accordance with management's general or specific authorization; and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences. The Company's internal control over financial reporting is effective and the Company is not aware of any material weaknesses in its internal control over financial reporting (other than as set forth in the Registration Statement or the Prospectus). Since the date of the latest audited financial statements of the Company included in the Prospectus, there has been no change in the Company's internal control over financial reporting that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting (other than as set forth in the Registration Statement or the Prospectus). The Company has established disclosure controls and procedures (as defined in Exchange Act Rules 13a-15 and 15d-15) for the Company and designed such disclosure controls and procedures to ensure that material information relating to the Company and each of its Subsidiaries is made known to the certifying officers by others within those entities, particularly during the period in which the Company's Annual Report on Form 10-K or Quarterly Report on Form 10-Q, as the case may be, is being prepared. The Company's certifying officers have evaluated the effectiveness of the Company's disclosure controls and procedures as of a date within 90 days prior to the filing date of the Form 10-K for the fiscal year most recently ended (such date, the "**Evaluation Date**"). The Company presented in its Form 10-K for the fiscal year most recently ended the conclusions of the certifying officers about the effectiveness of the disclosure controls and procedures based on their evaluations as of the Evaluation Date and the disclosure controls and procedures are effective. Since the Evaluation Date, there have been no significant changes in the Company's internal controls (as such term is defined in Item 307(b) of Regulation S-K under the Securities Act) or, to the Company's knowledge, in other factors that could significantly affect the Company's internal controls.

(dd) Sarbanes-Oxley. There is and has been no failure on the part of the Company or any of the Company's directors or officers, in their capacities as such, to comply in all material respects with any applicable provisions of the Sarbanes-Oxley Act and the rules and regulations promulgated thereunder. Each of the principal executive officer and the principal financial officer of the Company (or each former principal executive officer of the Company and each former principal financial officer of the Company as applicable) has made all certifications required by Sections 302 and 906 of the Sarbanes-Oxley Act with respect to all reports, schedules, forms, statements and other documents required to be filed by it or furnished by it to the Commission. For purposes of the preceding sentence, "principal executive officer" and "principal financial officer" shall have the meanings given to such terms in the Sarbanes-Oxley Act.

(ee) Finder's Fees. Neither the Company nor any of the Subsidiaries has incurred any liability for any finder's fees, brokerage commissions or similar payments in connection with the transactions herein contemplated, except as may otherwise exist with respect to or pursuant to this Agreement.

(ff) Labor Disputes. No labor disturbance by or dispute with employees of the Company or any of its Subsidiaries exists or, to the knowledge of the Company, is threatened which would reasonably be expected to result in a Material Adverse Effect.

(gg) Investment Company Act. Neither the Company nor any of the Subsidiaries is, or will be, both immediately after receipt of payment for the Placement Shares and immediately after the application of the proceeds therefrom as described under "Use of Proceeds" in the Registration Statement or the Prospectus, required to register as an "investment company" or an entity "controlled" by an "investment company," as such terms are defined in the Investment Company Act of 1940, as amended (the "**Investment Company Act**").

(hh) Operations. The operations of the Company and its Subsidiaries are and have been conducted at all times in compliance with applicable anti-money laundering laws, regulations, rules and guidelines, including, without limitation, the Bank Secrecy Act of 1970, as amended by the USA PATRIOT ACT of 2001, and the rules and regulations promulgated thereunder, financial record keeping and reporting requirements, such as the U.S. criminal money laundering statutes 18 U.S.C. §§ 1956 and 1957, and all other applicable anti-money laundering and counter terrorist financing statutes of all jurisdictions to which the Company or its Subsidiaries are subject, the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any Governmental Authority (collectively, the "**Money Laundering Laws**"); and no action, suit or proceeding by or before any Governmental Authority involving the Company or any of its Subsidiaries with respect to the Money Laundering Laws is pending or, to the knowledge of the Company, threatened.

(ii) Off-Balance Sheet Arrangements. There are no transactions, arrangements and other relationships between and/or among the Company, and/or, to the knowledge of the Company, any of its affiliates and any unconsolidated entity, including, but not limited to, any structural finance, special purpose or limited purpose entity (each, an "**Off-Balance Sheet Transaction**") that would reasonably be expected to affect materially the Company's liquidity or the availability of or requirements for its capital resources, including those Off-Balance Sheet Transactions described in the Commission's Statement about Management's Discussion and Analysis of Financial Conditions and Results of Operations (Release Nos. 33-8056; 34-45321; FR-61), required to be described in the Prospectus which have not been described as required.

(jj) ERISA. To the knowledge of the Company, each material employee benefit plan, within the meaning of Section 3(3) of the Employee Retirement Income Security Act of 1974, as amended ("**ERISA**"), that is maintained, administered or contributed to by the Company or any of its affiliates for employees or former employees of the Company and any of its Subsidiaries has been maintained in material compliance with its terms and the requirements of any applicable statutes, orders, rules and regulations, including but not limited to ERISA and the Internal Revenue Code of 1986, as amended (the "**Code**"); no prohibited transaction, within the meaning of Section 406 of ERISA or Section 4975 of the Code, has occurred which would result in a material liability to the Company with respect to any such plan excluding transactions effected pursuant to a statutory or administrative exemption; and for each such plan that is subject to the funding rules of Section 412 of the Code or Section 302 of ERISA, no "accumulated funding deficiency" as defined in Section 412 of the Code has been incurred, whether or not waived, and the fair market value of the assets of each such plan (excluding for these purposes accrued but unpaid contributions) exceeds the present value of all benefits accrued under such plan determined using reasonable actuarial assumptions.

(kk) Forward-Looking Statements. Each financial or operational projection or other "forward-looking statement" (as defined by Section 27A of the Securities Act or Section 21E of the Exchange Act) contained in the Registration Statement or the Prospectus (i) was so included by the Company in good faith and with reasonable basis after due consideration by the Company of the underlying assumptions, estimates and other applicable facts and circumstances and (ii) is accompanied by meaningful cautionary statements identifying those factors that could cause actual results to differ materially from those in such forward-looking statement. No such statement was made with the knowledge of an executive officer or director of the Company that is false or misleading.

(ll) Margin Rules. Neither the issuance, sale and delivery of the Placement Shares nor the application of the proceeds thereof by the Company as described in the Registration Statement and the Prospectus will violate Regulation T, U or X of the Board of Governors of the Federal Reserve System or any other regulation of such Board of Governors.

(mm) Insurance. The Company and each of its Subsidiaries carry, or are covered by, insurance in such amounts and covering such risks as the Company and each of its Subsidiaries reasonably believe are adequate for the conduct of their properties and as is customary for companies engaged in similar businesses in similar industries.

(nn) No Improper Practices. (i) Neither the Company nor the Subsidiaries, nor any director or officer of the Company or any Subsidiary nor, to the Company's knowledge, any employee, agent, affiliate or other person acting on behalf of the Company or any Subsidiary has, in the past five years, made any unlawful contributions to any candidate for any political office (or failed fully to disclose any contribution in violation of applicable law) or made any contribution or other payment to any official of, or candidate for, any federal, state, municipal, or foreign office or other person charged with similar public or quasi-public duty in violation of any applicable law or of the character required to be disclosed in the Prospectus; (ii) no relationship, direct or indirect, exists between or among the Company or, to the Company's knowledge, any Subsidiary or any affiliate of any of them, on the one hand, and the directors, officers and stockholders of the Company or, to the Company's knowledge, any Subsidiary, on the other hand, that is required by the Securities Act to be described in the Registration Statement and the Prospectus that is not so described; (iii) no relationship, direct or indirect, exists between or among the Company or any Subsidiary or any affiliate of them, on the one hand, and the directors, officers, or stockholders of the Company or, to the Company's knowledge, any Subsidiary, on the other hand, that is required by the rules of FINRA to be described in the Registration Statement and the Prospectus that is not so described; (iv) except as described in the Registration Statement and the Prospectus, there are no material outstanding loans or advances or material guarantees of indebtedness by the Company or, to the Company's knowledge, any Subsidiary to or for the benefit of any of their respective officers or directors or any of the members of the families of any of them; (v) the Company has not offered, or caused any placement agent to offer, Common Stock to any person with the intent to influence unlawfully (A) a customer or supplier of the Company or any Subsidiary to alter the customer's or supplier's level or type of business with the Company or any Subsidiary or (B) a trade journalist or publication to write or publish favorable information about the Company or any Subsidiary or any of their respective products or services; and (vi) neither the Company nor any Subsidiary nor, to the Company's knowledge, any director, officer, agent, employee, affiliate or other person acting on behalf of the Company or any Subsidiary has (A) violated or is in violation of any applicable provision of the U.S. Foreign Corrupt Practices Act of 1977, as amended, or any other applicable anti-bribery or anti-corruption law (collectively, "**Anti-Corruption Laws**"), (B) promised, offered, provided, attempted to provide or authorized the provision of anything of value, directly or indirectly, to any person for the purpose of unlawfully obtaining or retaining business, influencing any act or decision of the recipient or securing any improper advantage, or (C) made any payment of funds of the Company or any Subsidiary or received or retained any funds in violation of any Anti-Corruption Laws.

(oo) No Conflicts. Neither the execution of this Agreement, nor the issuance, offering or sale of the Placement Shares, nor the consummation of any of the transactions contemplated herein and therein, nor the compliance by the Company with the terms and provisions hereof and thereof will conflict with, or will result in a breach of, any of the terms and provisions of, or has constituted or will constitute a default under, or has resulted in or will result in the creation or imposition of any lien, charge or encumbrance upon any property or assets of the Company pursuant to the terms of any contract or other agreement to which the Company may be bound or to which any of the property or assets of the Company is subject, except (i) such conflicts, breaches or defaults as may have been waived and (ii) such conflicts, breaches and defaults that would not have a Material Adverse Effect; nor will such action result (x) in any violation of the provisions of the organizational or governing documents of the Company, or (y) in any violation of the provisions of any statute or any order, rule or regulation applicable to the Company or of any Governmental Authority having jurisdiction over the Company other than, with respect to clause (y) only, any violation that would not have a Material Adverse Effect.

(pp) Sanctions. (i) The Company represents that, neither the Company nor any of its Subsidiaries (collectively, the "**Entity**") or any director or officer of the Entity, or, to the Entity's knowledge, any employee, agent, affiliate or representative of the Entity, is a government, individual, or entity (in this paragraph (pp), "**Person**") that is, or is owned 50% or more or otherwise controlled as relevant under Sanctions by a Person that is: (A) the subject of any sanctions administered or enforced by the U.S. Department of Treasury's Office of Foreign Assets Control ("**OFAC**"), the United Nations Security Council, the European Union, His Majesty's Treasury, or other relevant sanctions authorities, including, without limitation, designation on OFAC's Specially Designated Nationals and Blocked Persons List or OFAC's Foreign Sanctions Evaders List (as amended, collectively, "**Sanctions**"), nor (B) located, organized or resident in a country or territory that is the subject of Sanctions that broadly prohibit dealings with that country or territory (including, without limitation, Cuba, Iran, North Korea, the Crimea Region of Ukraine, the so-called Donetsk People's Republic, or the so-called Luhansk People's Republic, or any other Covered Region of Ukraine identified pursuant to Executive Order 14065) (the "**Sanctioned Countries**"); (ii) the Entity represents and covenants that it will not, directly or indirectly, use the proceeds of the offering, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other Person: (A) to fund or facilitate any activities or business of or with any Person or in any country or territory that, at the time of such funding or facilitation, is the subject of Sanctions or is a Sanctioned Country in violation of Sanctions; or (B) in any other manner that will result in a violation of Sanctions by any Person (including any Person participating in the offering, whether as sales agent, underwriter, advisor, investor or otherwise); and (iii) the Entity represents and covenants that, except as detailed in the Registration Statement and the Prospectus, for the past 5 years, it has not knowingly engaged in, is not now knowingly engaging in, and will not engage in, any dealings or transactions with any Person in violation of Sanctions, or in any country or territory, that at the time of the dealing or transaction is or was the subject of Sanctions or is or was a Sanctioned Country.

(qq) Compliance with Laws. The Company and each of its Subsidiaries are in compliance with all applicable laws, regulations and statutes (including Environmental Laws) in the jurisdictions in which it carries on business; the Company has not received a notice of non-compliance, nor knows of, nor has reasonable grounds to know of, any facts that would reasonably be expected to give rise to a notice of non-compliance with any such laws, regulations and statutes, and does not have knowledge of any pending change or contemplated change to any applicable law or regulation or governmental position; except, in each case, where such non-compliance, potential non-compliance or potential change in an applicable law, regulation or governmental position, would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(rr) Statistical and Market-Related Data. All statistical, demographic and market-related data included in the Registration Statement or the Prospectus are based on or derived from sources that the Company believes to be reliable and accurate or represent the Company's good faith estimates that are made on the basis of data derived from such sources.

(ss) Stock Exchange Listing. The Common Stock is registered pursuant to Section 12(b) or 12(g) of the Exchange Act and is listed on the Nasdaq, and the Company has taken no action designed to, or likely to have the effect of, terminating the registration of the Common Stock under the Exchange Act or delisting the Common Stock from the Nasdaq, nor has the Company received any notification that the Commission or the Nasdaq is contemplating terminating such registration or listing. To the Company's knowledge, it is in compliance with all applicable listing requirements of the Nasdaq.

(tt) Related-Party Transactions. There are no business relationships or related-party transactions involving the Company or any of its Subsidiaries or any other person required to be described in the Registration Statement or the Prospectus that have not been described as required.

(uu) Privacy Compliance. (i) The Company and each of its Subsidiaries have materially complied and are presently in material compliance with all of their internal and external privacy policies, contractual obligations, industry standards, applicable laws, statutes, judgments, orders, rules and regulations of any court or arbitrator or other governmental or regulatory authority and any other legal obligations, in each case, relating to the collection, use, transfer, import, export, storage, protection, security, privacy, disposal and disclosure by or on behalf of the Company or any of its Subsidiaries of personal, personally identifiable, household, sensitive, confidential or regulated data ("**Data Security Obligations**," and such data, "**Data**"); (ii) the Company has not received any written notification of or written complaint regarding and is unaware of any other facts that, individually or in the aggregate, would reasonably indicate its or its Subsidiaries' non-compliance with any Data Security Obligation, except as would not individually or in the aggregate, reasonably be expected to have a Material Adverse Effect; and (iii) there is no action, suit or proceeding by or before any court or governmental agency, authority or body pending or, to the Company's knowledge, threatened alleging non-compliance by the Company or its Subsidiaries with any Data Security Obligation.

(vv) Data Security. The Company and each of its Subsidiaries have implemented technical and organizational measures reasonably designed to protect the information technology systems and Data used by or on behalf of the Company or its Subsidiaries in connection with the operation of the Company's and its Subsidiaries' businesses. To the knowledge of the Company, all such material information technology systems are free and clear of all Trojan horses, time bombs, malware and other malicious code, except as would not individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. Without limiting the foregoing, the Company and its Subsidiaries have used reasonable efforts to establish and maintain, and have established, maintained, implemented and complied with, all reasonable information technology, information security, cyber security and data protection controls, policies and procedures relating to such systems, Data and operations, including oversight, access controls, encryption, technological and physical safeguards and business continuity/disaster recovery and security plans that are reasonably designed to protect against and prevent breach, destruction, loss, unauthorized distribution, use, access, disablement, misappropriation or modification, or other compromise or misuse of or relating to such information technology systems and Data used in connection with the operation of the Company's and its Subsidiaries' businesses ("**Breach**"). To the knowledge of the Company there has been no such Breach, and the Company and its Subsidiaries have not been notified of and have no knowledge of any event or condition that would reasonably be expected to result in, any such Breach, except in each case as would not individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

(ww) Actively Traded Security. The Common Stock is an "actively traded security" excepted from the requirements of Rule 101 of Regulation M by subsection (c)(1) of such rule.

(xx) Rating of Securities. There are no debt securities or preferred stock issued or guaranteed by the Company that are rated by a "nationally recognized statistical rating organization", as such term is defined in Section 3(a)(62) under the Exchange Act.

(yy) Underwriting Agreements. Except for this Agreement or as disclosed in the Prospectus, as of the date of this Agreement, the Company is not a party to any agreement with an agent or underwriter for any other "at the market" or continuous equity transaction.

(zz) Lending Relationship. Except as disclosed in the Prospectus, the Company does not intend to use any of the proceeds from the sale of the Placement Shares to repay any outstanding debt owed to the Agent or any affiliate of the Agent.

Any certificate signed by any officer of the Company or any of its Subsidiaries and delivered to the Agent or to counsel for the Agent in connection with the offering, or the purchase and sale, of the Placement Shares shall be deemed a representation and warranty by the Company to the Agent as to the matters covered thereby.

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

(a) Registration Statement Amendments. After the date of this Agreement and during any period in which a Prospectus relating to any Placement Shares is required to be delivered by the Agent under the Securities Act (including in circumstances where such requirement may be satisfied pursuant to Rule 172 under the Securities Act or similar rule), (i) the Company will notify the Agent promptly of the time when any subsequent amendment to the Registration Statement, other than documents incorporated by reference, has been filed with the Commission and/or has become effective or any subsequent supplement to the Prospectus (other than documents incorporated by reference therein) has been filed and of any request by the Commission for any amendment or supplement to the Registration Statement or Prospectus or for additional information (insofar as it relates to the transactions contemplated hereby), (ii) the Company will prepare and file with the Commission, promptly upon the Agent's request, any amendments or supplements to the Registration Statement or Prospectus that, in the Agent's reasonable opinion, may be necessary or advisable in connection with the distribution of the Placement Shares by the Agent (*provided*, *however*, that the failure of the Agent to make such request shall not relieve the Company of any obligation or liability hereunder, or affect the Agent's right to rely on the representations and warranties made by the Company in this Agreement and *provided*, *further*, that the only remedy the Agent shall have with respect to the failure to make such filing shall be to cease making sales under this Agreement until such amendment or supplement is filed); (iii) the Company will not file any amendment or supplement (except for documents incorporated by reference) to the Registration Statement or Prospectus, in each case, relating to the Placement Shares or a security convertible into the Placement Shares unless a copy thereof has been submitted to the Agent within a reasonable period of time before the filing and the Agent has not reasonably and in good faith objected thereto (*provided*, *however*, that (A) the failure of the Agent to make such objection shall not relieve the Company of any obligation or liability hereunder, or affect the Agent's right to rely on the representations and warranties made by the Company in this Agreement; (B) the Company has no obligation to provide the Agent any advance copy of such filing or to provide the Agent an opportunity to object to such filing if such filing does not name the Agent and does not relate to the transactions contemplated by this Agreement, and (C) the only remedy the Agent shall have with respect to the failure by the Company to provide the Agent with such copy or the filing of such amendment or supplement despite the Agent's objection shall be to cease making sales under this Agreement) and the Company will furnish to the Agent at the time of filing thereof a copy of any document that upon filing is deemed to be incorporated by reference into the Registration Statement or Prospectus, except for those documents available via EDGAR; and (iv) the Company will cause each amendment or supplement to the Prospectus to be filed with the Commission as required pursuant to the applicable paragraph of Rule 424(b) of the Securities Act or, in the case of any document to be incorporated therein by reference, to be filed with the Commission as required pursuant to the Exchange Act, within the time period prescribed (the determination to file or not file any amendment or supplement with the Commission under this Section 7(a), based on the Company's reasonable opinion or reasonable objections, shall be made exclusively by the Company); *provided*, *however*, that the Company may delay any such amendment or supplement, if, in the reasonable judgment of the Company, it is in the best interests of the Company to do so.

(b) Notice of Commission Stop Orders. The Company will advise the Agent, promptly after it receives notice or obtains knowledge thereof, of the issuance or threatened issuance by the Commission of any stop order suspending the effectiveness of the Registration Statement, of the suspension of the qualification of the Placement Shares for offering or sale in any jurisdiction in which the Placement Shares are offered or sold, or of the initiation or threatening of any proceeding for any such purpose; and it will promptly use its commercially reasonable efforts to prevent the issuance of any stop order or to obtain its withdrawal if such a stop order should be issued. The Company will advise the Agent promptly after it receives any request by the Commission for any amendments to the Registration Statement or any amendment or supplements to the Prospectus or any Issuer Free Writing Prospectus or for additional information related to the offering of the Placement Shares or for additional information related to the Registration Statement, the Prospectus or any Issuer Free Writing Prospectus.

(c) Delivery of Prospectus; Subsequent Changes. During any period in which a Prospectus relating to the Placement Shares is required to be delivered by the Agent under the Securities Act with respect to the offer and sale of the Placement Shares (including in circumstances where such requirement may be satisfied pursuant to Rule 172 under the Securities Act or similar rule), the Company will use commercially reasonable efforts to comply in all material respects with all requirements imposed upon it by the Securities Act, as in effect from time to time, and to file on or before their respective due dates (taking into account any extensions available under the Exchange Act) all reports and any definitive proxy or information statements required to be filed by the Company with the Commission pursuant to Sections 13(a), 13(c), 14, 15(d) or any other provision of or under the Exchange Act. If the Company has omitted any information from the Registration Statement pursuant to Rule 430B under the Securities Act, it will use its commercially reasonable efforts to comply with the provisions of and make all requisite filings with the Commission pursuant to said Rule 430B and to notify the Agent promptly of all such filings. If during such period any event occurs as a result of which the Prospectus as then amended or supplemented would include an untrue statement of a material fact or omit to state a material fact necessary to make the statements therein, in the light of the circumstances then existing, not misleading, or if during such period it is necessary to amend or supplement the Registration Statement or Prospectus to comply with the Securities Act, the Company will promptly notify the Agent to suspend the offering of Placement Shares during such period and the Company will promptly amend or supplement the Registration Statement or Prospectus (at the expense of the Company) so as to correct such statement or omission or effect such compliance; *provided*, *however*, that the Company may delay any such amendment or supplement, if, in the reasonable judgment of the Company, it is in the best interests of the Company to do so. Until such time as the Company shall have corrected such statement or omission or effected such compliance, the Agent shall be under no obligation to make any sales of the Placement Shares hereunder.

(d) Listing of Placement Shares. Prior to the date of the first Placement Notice, the Company will use its commercially reasonable efforts to cause the Placement Shares to be listed on the Nasdaq.

(e) Delivery of Registration Statement and Prospectus. The Company will furnish to the Agent and its counsel (at the expense of the Company) copies of the Registration Statement, the Prospectus (including all documents incorporated by reference therein) and all amendments and supplements to the Registration Statement or Prospectus that are filed with the Commission during any period in which a Prospectus relating to the Placement Shares is required to be delivered under the Securities Act (including all documents filed with the Commission during such period that are deemed to be incorporated by reference therein), in each case as soon as reasonably practicable and in such quantities as the Agent may from time to time reasonably request and, at the Agent's request, will also furnish copies of the Prospectus to each exchange or market on which sales of the Placement Shares may be made; *provided*, *however*, that the Company shall not be required to furnish any document (other than the Prospectus) to the Agent to the extent such document is available on EDGAR.

(f) Earnings Statement. To the extent not otherwise available on EDGAR, the Company will make generally available to its security holders as soon as practicable, but in any event not later than 15 months after the end of the Company's current fiscal quarter, an earnings statement covering a 12-month period that satisfies the provisions of Section 11(a) and Rule 158 of the Securities Act.

(g) Use of Proceeds. The Company will use the Net Proceeds as described in the Prospectus in the section entitled "Use of Proceeds."

(h) Notice of Other Sales. Without the prior written consent of the Agent, the Company will not, directly or indirectly, offer to sell, sell, contract to sell, grant any option to sell or otherwise dispose of any Common Stock (other than the Placement Shares offered pursuant to this Agreement) or securities convertible into or exchangeable for Common Stock, warrants or any rights to purchase or acquire, Common Stock during the period beginning on the first (1st) Trading Day immediately prior to the date on which any Placement Notice is delivered to the Agent hereunder and ending on the final Settlement Date with respect to Placement Shares sold pursuant to such Placement Notice (or, if the Placement Notice has been terminated or suspended prior to the sale of all Placement Shares covered by a Placement Notice, the date of such suspension or termination); *provided*, *however*, that such restrictions will not be required in connection with the Company's (i) offer, issuance, grant or sale of Common Stock pursuant to this Agreement, (ii) issuance or sale of Common Stock, equity awards to purchase or receive Common Stock or Common Stock issuable upon the exercise, vesting or settlement of equity awards, pursuant to any employee, consultant or director stock option, incentive, inducement or benefits plan, stock ownership plan or dividend reinvestment plan (but not Common Stock subject to a waiver to exceed plan limits in its dividend reinvestment plan) of the Company whether now in effect or hereafter implemented, (iii) issuance or sale of Common Stock issuable upon the exchange, conversion or redemption of securities or the exercise of warrants, options or other rights as may be outstanding from time to time, (iv) modification of any outstanding equity awards, warrants or any rights to purchase or acquire Common Stock, (v) issuance or sale of, Common Stock or securities convertible into or exchangeable for shares of Common Stock as consideration for or in connection with mergers, acquisitions, other business combinations, strategic alliances or partnerships (including with vendors and customers) occurring after the date of this Agreement, and (vi) the issuance or sale of Common Stock or securities convertible into or exchangeable for Common Stock (including convertible notes) in connection with the exchange, repurchase, redemption, conversion, refinancing or other negotiated transaction involving any of the Company's convertible notes outstanding from time to time.

(i) Change of Circumstances. The Company will, at any time during the pendency of a Placement Notice, advise the Agent promptly after it shall have received notice or obtained knowledge thereof, of any information or fact that would alter or affect in any material respect any opinion, certificate, letter or other document required to be provided to the Agent pursuant to this Agreement.

(j) Due Diligence Cooperation. During the term of this Agreement, the Company will cooperate with any reasonable due diligence review conducted by the Agent or its representatives in connection with the transactions contemplated hereby, including, without limitation, providing information and making available documents and senior corporate officers, during regular business hours and at the Company's principal offices, as the Agent may reasonably request.

(k) Required Filings Relating to Placement of Placement Shares. The Company shall disclose, in its Quarterly Reports on Form 10-Q and in its Annual Report on Form 10-K to be filed by the Company with the Commission from time to time, the number of the Placement Shares sold through the Agent under this Agreement, and the net proceeds to the Company from the sale of the Placement Shares pursuant to this Agreement during the relevant quarter or, in the case of an Annual Report on Form 10-K, during the fiscal year covered by such Annual Report and the fourth quarter of such fiscal year. The Company agrees that on such dates as the Securities Act shall require, the Company will (i) file a prospectus supplement with the Commission under the applicable paragraph of Rule 424(b) under the Securities Act, which prospectus supplement will set forth, within the relevant period, the amount of Placement Shares sold through the Agent, the net proceeds to the Company and the compensation payable by the Company to the Agent with respect to such Placement Shares (provided that the Company may satisfy its obligations under this Section 7(k) (i) by making a filing in accordance with the Exchange Act including such information), and (ii) deliver such number of copies of each such prospectus supplement to each exchange or market on which such sales were effected as may be required by the rules or regulations of such exchange or market.

(l) Representation Dates; Certificate. (1) On or prior to the date of the first Placement Notice and (2) following the delivery of the first Placement Notice, each time the Company:

(i) files the Prospectus relating to the Placement Shares or amends or supplements (other than a prospectus supplement relating solely to an offering of securities other than the Placement Shares) the Registration Statement or the Prospectus relating to the Placement Shares by means of a post-effective amendment, sticker, or supplement but not by means of incorporation of documents by reference into the Registration Statement or the Prospectus relating to the Placement Shares;

(ii) files an Annual Report on Form 10-K under the Exchange Act (including any Form 10-K/A containing amended financial information or a material amendment to the previously filed Form 10-K);

(iii) files its Quarterly Reports on Form 10-Q under the Exchange Act; or

(iv) files a Current Report on Form 8-K containing (a) amended financial information (other than information "furnished" pursuant to Items 2.02 or 7.01 of Form 8-K or to provide disclosure pursuant to Item 8.01 of Form 8-K relating to the reclassification of certain properties as discontinued operations in accordance with Statement of Financial Accounting Standards No. 144) or (b) financial information required to be disclosed pursuant to Item 2.01 of Form 8-K, under the Exchange Act (each date of filing of one or more of the documents referred to in clauses (i) through (iv) shall be a "**Representation Date**");

the Company shall furnish the Agent (but in the case of clause (iv) above only if the Agent reasonably determines that the information contained in such Form 8-K is material) with a certificate dated the Representation Date, in the form and substance reasonably satisfactory to the Agent and its counsel, substantially similar to the form previously provided to the Agent and its counsel, modified, as necessary, to relate to the Registration Statement and the Prospectus as amended or supplemented. The requirement to provide a certificate under this Section 7(l) shall be automatically waived for any Representation Date occurring at a time during which no Placement Notice is pending or a Suspension is in effect, which waiver shall continue until the earlier to occur of the date the Company delivers instructions for the sale of Placement Shares hereunder (which for such calendar quarter shall be considered a Representation Date) and the next occurring Representation Date for which the requirement to provide a certificate under this Section 7(l) is not waived pursuant to the terms thereof. Notwithstanding the foregoing, if the Company subsequently decides to sell Placement Shares following a Representation Date when the Company relied on such waiver and did not provide the Agent with a certificate under this Section 7(l), then before the Company delivers the instructions for the sale of Placement Shares or the Agent sells any Placement Shares pursuant to such instructions, the Company shall provide the Agent with a certificate in conformity with this Section 7(l) dated as of the date that the instructions for the sale of Placement Shares are issued.

(m) Legal Opinion. (1) Prior to the date of the first Placement Notice and (2) within five (5) Trading Days of each Representation Date with respect to which the Company is obligated to deliver a certificate pursuant to Section 7(l) for which no waiver is applicable and excluding the date of this Agreement, the Company shall cause to be furnished to the Agent a written opinion and negative assurance letter of Wilson Sonsini Goodrich & Rosati, Professional Corporation ("**Company Counsel**"), or other counsel reasonably satisfactory to the Agent, in form and substance reasonably satisfactory to the Agent and its counsel, substantially similar to the form previously provided to the Agent and its counsel, modified, as necessary, to relate to the Registration Statement and the Prospectus as then amended or supplemented; *provided*, however, that, other than as required by Section 5(f) or as a result of the filing by the Company of a Form 10-K/A containing amended financial information or a material amendment to the previously filed Form 10-K or a Form 8-K described in Section 7(l)(2)(iv), the Company shall be required to furnish to the Agent no more than one opinion and negative assurance letter hereunder per filing of an Annual Report on Form 10-K and Quarterly Report on Form 10-Q; *provided*, further, that in lieu of such legal opinion or negative assurance letter for subsequent periodic filings under the Exchange Act, Company Counsel may furnish the Agent with a letter (a "**Reliance Letter**") to the effect that the Agent may rely on a prior legal opinion or negative assurance letter, as the case may be, delivered under this Section 7(m) to the same extent as if it were dated the date of such letter (except that statements in such prior legal opinion or negative assurance letter shall be deemed to relate to the Registration Statement and the Prospectus as amended or supplemented as of the date of the Reliance Letter).

(n) Comfort Letter. (1) Prior to the date of the first Placement Notice and (2) within five (5) Trading Days of each Representation Date with respect to which the Company is obligated to deliver a certificate pursuant to Section 7(l) for which no waiver is applicable and excluding the date of this Agreement, the Company shall cause (i) its independent registered public accounting firm to furnish the Agent letters (the "**Comfort Letters**"), dated the date the Comfort Letters are delivered, which shall meet the requirements set forth in this Section 7(n) and (ii) the Company's chief financial officer to furnish the Agent a certificate (the "**CFO Certificate**"), dated the date the CFO Certificate is delivered; *provided*, that if reasonably requested by the Agent, the Company shall cause Comfort Letters and/or a CFO Certificate to be furnished to the Agent within ten (10) Trading Days of the date of occurrence of any material transaction or event requiring the filing of a Current Report on Form 8-K containing material financial information (including the restatement of the Company's financial statements). The Comfort Letters from the Company's independent registered public accounting firm shall each be in a form and substance reasonably satisfactory to the Agent, (i) confirming that it is an independent registered public accounting firm within the meaning of the Securities Act and the Public Company Accounting Oversight Board, (ii) stating, as of such date, the conclusions and findings of such firm with respect to the financial information and other matters ordinarily covered by accountants' "comfort letters" to underwriters in connection with registered public offerings (the first such letter, the "**Initial Comfort Letters**") and (iii) updating the Initial Comfort Letters with any information that would have been included in the Initial Comfort Letters had such letters been given on such date and modified as necessary to relate to the Registration Statement and the Prospectus, as amended and supplemented to the date of such letters. The CFO Certificate shall be in a form and substance satisfactory to the Agent, with respect to certain financial data contained in the Registration Statement, Prospectus or documents incorporated by reference therein, providing "management comfort" with respect to such information, in form and substance reasonably satisfactory to the Agent.

(o) Market Activities; Compliance with Regulation M. The Company will not, directly or indirectly, (i) take any action designed to cause or result in, or that constitutes or would reasonably be expected to constitute, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of Common Stock or (ii) sell, bid for, or purchase Common Stock in violation of Regulation M, or pay anyone any compensation for soliciting purchases of the Placement Shares other than the Agent.

(p) Investment Company Act. The Company will conduct its affairs in such a manner so as to reasonably ensure that neither it nor any of its subsidiaries will be or become, at any time prior to the termination of this Agreement, required to register as an "investment company," as such term is defined in the Investment Company Act.

(q) No Offer to Sell. Other than an Issuer Free Writing Prospectus approved in advance by the Company and the Agent in its capacity as agent hereunder, neither the Agent nor the Company (including its agents and representatives, other than the Agent in its capacity as such) will make, use, prepare, authorize, approve or refer to any written communication (as defined in Rule 405 under the Securities Act), required to be filed with the Commission, that constitutes an offer to sell or solicitation of an offer to buy Placement Shares hereunder.

(r) Blue Sky and Other Qualifications. The Company will use its commercially reasonable efforts, in cooperation with the Agent, to qualify the Placement Shares for offering and sale, or to obtain an exemption for the Placement Shares to be offered and sold, under the applicable securities laws of such states and other jurisdictions (domestic or foreign) as the Agent may designate and to maintain such qualifications and exemptions in effect for so long as required for the distribution of the Placement Shares; *provided*, *however*, that the Company shall not be obligated to file any general consent to service of process or to qualify as a foreign corporation or as a dealer in securities in any jurisdiction in which it is not so qualified or to subject itself to taxation in respect of doing business in any jurisdiction in which it is not otherwise so subject. In each jurisdiction in which the Placement Shares have been so qualified or exempt, the Company will file such statements and reports as may be required by the laws of such jurisdiction to continue such qualification or exemption, as the case may be, in effect for so long as required for the distribution of the Placement Shares.

(s) Sarbanes-Oxley Act. The Company and the subsidiaries will maintain and keep accurate books and records reflecting their assets and maintain internal accounting controls in a manner designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP and including those policies and procedures that (i) pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of the assets of the Company, (ii) provide reasonable assurance that transactions are recorded as necessary to permit the preparation of the Company's consolidated financial statements in accordance with GAAP, (iii) provide reasonable assurance that receipts and expenditures of the Company are being made only in accordance with management's and the Company's directors' authorization, and (iv) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on its financial statements. The Company and its subsidiaries will maintain such controls and other procedures, including, without limitation, those required by Sections 302 and 906 of the Sarbanes-Oxley Act, and the applicable regulations thereunder that are designed to ensure that information required to be disclosed by the Company in the reports that 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, including, without limitation, controls and procedures designed to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the Company's management, including its principal executive officer and principal financial officer, or persons performing similar functions, as appropriate to allow timely decisions regarding required disclosure and to ensure that material information relating to the Company or its subsidiaries is made known to them by others within those entities, particularly during the period in which such periodic reports are being prepared.

(t) Further Documentation. Within five (5) Trading Days of each Representation Date, with respect to which the Company is obligated to deliver a certificate pursuant to Section 7(l) above and for which no waiver is applicable, the Company shall have furnished to the Agent such further information, certificates and documents as the Agent may reasonably request.

8. Payment of Expenses. The Company will pay all expenses incident to the performance of its obligations under this Agreement, including (i) the preparation and filing of the Registration Statement, including any fees required by the Commission, and the printing or electronic delivery of the Prospectus as originally filed and of each amendment and supplement thereto relating to the Placement Shares, in such number as the Agent shall reasonably deem necessary, (ii) the printing and delivery to the Agent of this Agreement and such other documents as may be required in connection with the offering, purchase, sale, issuance or delivery of the Placement Shares, (iii) the preparation, issuance and delivery of the certificates, if any, for the Placement Shares to the Agent, including any stock or other transfer taxes and any stamp duties or other similar duties or taxes payable upon the sale, issuance or delivery of the Placement Shares to the Agent, (iv) the fees and disbursements of the counsel, accountants and other advisors to the Company, (v) the reasonable and documented out-of-pocket fees and expenses of the counsel to the Agent, payable upon the execution of this Agreement, (a) in an amount not to exceed $125,000 in connection with the execution of this Agreement, (b) in an amount not to exceed $25,000 per calendar quarter thereafter payable in connection with each Representation Date with respect to which the Company is obligated to deliver a certificate pursuant to Section 7(l) for which no waiver is applicable and excluding the date of this Agreement, and (c) in an amount not to exceed $125,000 for each program "refresh" (filing of a new registration statement, prospectus or prospectus supplement relating to the Placement Shares and/or an amendment of this Agreement) in relation to this Agreement, (vi) the qualification or exemption of the Placement Shares under state securities laws in accordance with the provision of Section 7(r) hereof, including filing fees, but excluding fees of the Agent's counsel, (vii) the printing and delivery to the Agent of copies of any Permitted Issuer Free Writing Prospectus and the Prospectus and any amendments or supplements thereto in such number as the Agent shall deem necessary, (viii) the fees and expenses of the transfer agent and registrar for the Common Stock, (ix) the filing and other reasonable fees incident to any review by FINRA of the terms of the sale of the Placement Shares including the fees of the Agent's counsel (which fees will be included in and subject to the cap, set forth in clause (v) above), and (x) the fees and expenses incurred in connection with the listing of the Placement Shares on the Nasdaq. The Company agrees to pay the fees and expenses of counsel to the Agent set forth and subject to the limitations in clause (v) above by wire transfer of immediately available funds directly to such counsel within thirty (30) days of presentation to the Company of an invoice containing the requisite payment information prepared by such counsel.

9. Conditions to the Agent's Obligations. The obligations of the Agent hereunder with respect to a Placement will be subject to the continuing accuracy and completeness of the representations and warranties made by the Company herein (other than those representations and warranties made as of a specified date or time), to the due performance by the Company of its obligations hereunder, to the completion by the Agent of a due diligence review satisfactory to it in its reasonable judgment, and to the continuing satisfaction (or waiver by the Agent in its sole discretion) of the following additional conditions:

(a) Registration Statement Effective. The Registration Statement is effective and available for (i) resale of all Placement Shares issued to the Agent and not yet sold by the Agent and (ii) the sale of all Placement Shares contemplated to be issued by any Placement Notice.

(b) No Material Notices. None of the following events shall have occurred and be continuing: (i) receipt by the Company of any request for additional information from the Commission or any other federal or state Governmental Authority during the period of effectiveness of the Registration Statement, the response to which would require any post-effective amendments or supplements to the Registration Statement or the Prospectus, which amendments or supplements have not, as of the time of such Placement, been made; (ii) the issuance by the Commission or any other federal or state Governmental Authority of any stop order suspending the effectiveness of the Registration Statement or the initiation of any proceedings for that purpose; (iii) receipt by the Company of any notification with respect to the suspension of the qualification or exemption from qualification of any of the Placement Shares for sale in any jurisdiction or the initiation or threatening of any proceeding for such purpose; or (iv) the occurrence of any event that makes any statement of a material fact made in the Registration Statement or the Prospectus or any document incorporated or deemed to be incorporated therein by reference untrue in any material respect or that requires the making of any changes in the Registration Statement, the Prospectus or documents so that, in the case of the Registration Statement, it will not contain any materially 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 not misleading and, that in the case of the Prospectus, it will not contain any materially 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 the light of the circumstances under which they were made, not misleading, which changes have not, as of the time of such Placement, been made.

(c) No Misstatement or Material Omission. The Agent shall not have advised the Company that the Registration Statement or Prospectus, or any amendment or supplement thereto, contains an untrue statement of fact that in the Agent's reasonable opinion is material, or omits to state a fact that in the Agent's reasonable opinion is material and is required to be stated therein or is necessary to make the statements therein not misleading.

(d) Material Changes. Except as contemplated in the Prospectus, or disclosed in the Company's reports filed with the Commission, there shall not have been any material adverse change, on a consolidated basis, in the authorized capital stock of the Company or any Material Adverse Effect or any development that would reasonably be expected to cause a Material Adverse Effect, or a downgrading in or withdrawal of the rating assigned to any of the Company's securities (other than asset backed securities) by any rating organization or a public announcement by any rating organization that it has under surveillance or review its rating of any of the Company's securities (other than asset backed securities), the effect of which, in the case of any such action by a rating organization described above, in the reasonable judgment of the Agent (without relieving the Company of any obligation or liability it may otherwise have), is so material as to make it impracticable or inadvisable to proceed with the offering of the Placement Shares on the terms and in the manner contemplated in the Prospectus.

(e) Legal Opinions. The Agent shall have received the opinions and negative assurance letters required to be delivered pursuant to Section 7(m)on or before the date on which such delivery of such opinions and negative assurance letters, as applicable, is required pursuant to Section 7(m).

(f) Comfort Letters. The Agent shall have received the Comfort Letters required to be delivered pursuant to Section 7(n) on or before the date on which such delivery of such Comfort Letters is required pursuant to Section 7(n).

(g) Representation Certificate. The Agent shall have received the certificate required to be delivered pursuant to Section 7(l) on or before the date on which delivery of such certificate is required pursuant to Section 7(l).

(h) No Suspension. Trading in the Common Stock shall not have been suspended on the Nasdaq and the Common Stock shall not have been delisted from the Nasdaq.

(i) Other Materials. On each date on which the Company is required to deliver a certificate pursuant to Section 7(l), the Company shall have furnished to the Agent such appropriate further information, certificates and other documents as the Agent may reasonably request. All such information, certificates and other documents will be in compliance with the provisions hereof.

(j) Securities Act Filings Made. All filings with the Commission required by Rule 424 under the Securities Act with respect to the Placement Shares to have been filed prior to the issuance of any Placement Notice hereunder shall have been made within the applicable time period prescribed for such filing by Rule 424.

(k) Approval for Listing. As necessary, the Placement Shares shall either have been (i) approved for listing on the Nasdaq, subject only to notice of issuance, or (ii) the Company shall have filed an application for listing of the Placement Shares on the Nasdaq at, or prior to, the issuance of any Placement Notice.

(l) FINRA Matters. The information provided to the Agent by the Company, its counsel, and its officers and directors for purposes of the Agent's compliance with FINRA rules in connection with the offering of the Placement Shares is true, complete, and correct and compliant with FINRA's rules. The Company meets the requirements for use of Form S-3 under the Securities Act specified in FINRA Rule 5110(h)(1)(C) and is an experienced issuer (as defined in FINRA Rule 5110(j)(6)).

(m) No Termination Event. There shall not have occurred any event that would permit the Agent to terminate this Agreement pursuant to Section 12(a).

10. Indemnification and Contribution.

(a) Company Indemnification. The Company agrees to indemnify and hold harmless the Agent, its affiliates and each of their respective partners, members, directors, officers, employees and agents and each person, if any, who controls the Agent within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act as follows:

(i) against any and all loss, liability, claim, damage and expense whatsoever, as incurred, joint or several, arising out of or based upon any untrue statement or alleged untrue statement of a material fact contained in the Registration Statement (or any amendment thereto), or the omission or alleged omission therefrom of a material fact required to be stated therein or necessary to make the statements therein not misleading, or arising out of any untrue statement or alleged untrue statement of a material fact included in any related Issuer Free Writing Prospectus or the Prospectus (or any amendment or supplement thereto), or the omission or alleged omission therefrom of a material fact, in each case, necessary in order to make the statements therein, in the light of the circumstances under which they were made, not misleading;

(ii) against any and all loss, liability, claim, damage and expense whatsoever, as incurred, joint or several, to the extent of the aggregate amount paid in settlement of any litigation, or any investigation or proceeding by any Governmental Authority, commenced or threatened, or of any claim whatsoever based upon any such untrue statement or omission, or any such alleged untrue statement or omission; *provided* that any such settlement is effected with the written consent of the Company, which consent shall not unreasonably be delayed or withheld; and

(iii) against any and all expense whatsoever, as incurred (including the reasonable and documented fees and disbursements of counsel), reasonably incurred in investigating, preparing or defending against any litigation, or any investigation or proceeding by any Governmental Authority, commenced or threatened, or any claim whatsoever based upon any such untrue statement or omission, or any such alleged untrue statement or omission (whether or not a party), to the extent that any such expense is not paid under (i) or (ii) above,

provided, *however*, that this indemnity agreement shall not apply to any loss, liability, claim, damage or expense to the extent arising out of any untrue statement or omission or alleged untrue statement or omission made solely in reliance upon and in conformity with the Agent Information (as defined below).

(b) Agent Indemnification. The Agent agrees to indemnify and hold harmless the Company and its directors and each officer of the Company who signed the Registration Statement, and each person, if any, who (i) controls the Company within the meaning of Section 15 of the Securities Act or Section 20 of the Exchange Act or (ii) is controlled by or is under common control with the Company against any and all loss, liability, claim, damage and expense described in the indemnity contained in Section 10(a), as incurred, but only with respect to untrue statements or omissions, or alleged untrue statements or omissions, made in the Registration Statement (or any amendments thereto), the Prospectus (or any amendment or supplement thereto) or any Issuer Free Writing Prospectus (or any amendment or supplement thereto) in reliance upon and in conformity with information relating to the Agent and furnished to the Company in writing by the Agent expressly for use therein. The Company hereby acknowledges that the only information that the Agent has furnished to the Company expressly for use in the Registration Statement, the Prospectus, any Prospectus Supplement or any Issuer Free Writing Prospectus (or any amendment or supplement thereto) are the statements set forth in the second sentence of the seventh paragraph and the eighth paragraph under the caption "Plan of Distribution" in the Prospectus (the "**Agent Information**").

(c) Procedure. Any party that proposes to assert the right to be indemnified under this Section 10 will, promptly after receipt of notice of commencement of any action against such party in respect of which a claim is to be made against an indemnifying party or parties under this Section 10, notify each such indemnifying party of the commencement of such action, enclosing a copy of all papers served, but the omission so to notify such indemnifying party will not relieve the indemnifying party from (i) any liability that it might have to any indemnified party otherwise than under this Section 10 and (ii) any liability that it may have to any indemnified party under the foregoing provision of this Section 10 unless, and only to the extent that, such omission results in the forfeiture of substantive rights or defenses by the indemnifying party. If any such action is brought against any indemnified party and it notifies the indemnifying party of its commencement, the indemnifying party will be entitled to participate in and, to the extent that it elects by delivering written notice to the indemnified party promptly after receiving notice of the commencement of the action from the indemnified party, jointly with any other indemnifying party similarly notified, to assume the defense of the action, with counsel reasonably satisfactory to the indemnified party (Wilson Sonsini Goodrich & Rosati, Professional Corporation shall be deemed reasonably satisfactory to the indemnified party if the indemnifying party is the Company), and shall pay the fees and disbursements of such counsel related to such proceedings, and after notice from the indemnifying party to the indemnified party of its election to assume the defense, the indemnifying party will not be liable to the indemnified party for any other legal expenses except as provided below and except for the reasonable costs of investigation subsequently incurred by the indemnified party in connection with the defense. The indemnified party will have the right to employ its own counsel in any such action, but the fees, expenses and other charges of such counsel will be at the expense of such indemnified party unless (1) the employment of counsel by the indemnified party has been authorized in writing by the indemnifying party, (2) the indemnified party has reasonably concluded (based on advice of counsel) that there may be legal defenses available to it or other indemnified parties that are different from or in addition to those available to the indemnifying party, (3) a conflict or potential conflict exists (based on advice of counsel to the indemnified party) between the indemnified party and the indemnifying party (in which case the indemnifying party will not have the right to direct the defense of such action on behalf of the indemnified party) or (4) the indemnifying party has not in fact employed counsel to assume the defense of such action or counsel reasonably satisfactory to the indemnified party, in each case, within a reasonable time after receiving notice of the commencement of the action; in each of which cases the reasonable and documented fees, disbursements and other charges of counsel will be at the expense of the indemnifying party or parties. It is understood that the indemnifying party or parties shall not, in connection with any proceeding or related proceedings in the same jurisdiction, be liable for the reasonable and documented fees, disbursements and other charges of more than one separate firm (plus local counsel) admitted to practice in such jurisdiction at any one time for all such indemnified party or parties. All such reasonable and documented fees, disbursements and other charges will be reimbursed by the indemnifying party promptly as they are incurred. An indemnifying party will not, in any event, be liable for any settlement of any action or claim effected without its written consent. No indemnifying party shall, without the prior written consent of each indemnified party, settle or compromise or consent to the entry of any judgment in any pending or threatened claim, action or proceeding relating to the matters contemplated by this Section 10 (whether or not any indemnified party is a party thereto), unless such settlement, compromise or consent (1) includes an express and unconditional release of each indemnified party, in form and substance reasonably satisfactory to such indemnified party, from all liability arising out of such litigation, investigation, proceeding or claim and (2) does not include a statement as to or an admission of fault, culpability or a failure to act by or on behalf of any indemnified party.

(d) Settlement Without Consent if Failure to Reimburse. If an indemnified party shall have requested an indemnifying party to reimburse the indemnified party for reasonable and documented fees and expenses of counsel, such indemnifying party agrees that it shall be liable for any settlement of the nature contemplated by Section 10(a)(ii) effected without its written consent if (1) such settlement is entered into more than 45 days after receipt by such indemnifying party of the aforesaid request, (2) such indemnifying party shall have received notice of the terms of such settlement at least 30 days prior to such settlement being entered into and (3) such indemnifying party shall not have reimbursed such indemnified party in accordance with such request prior to the date of such settlement.

(e) Contribution. In order to provide for just and equitable contribution in circumstances in which the indemnification provided for in the foregoing paragraphs of this Section 10 is applicable in accordance with its terms but for any reason is held to be unavailable or insufficient from the Company or the Agent, the Company and the Agent will contribute to the total losses, claims, liabilities, expenses and damages (including any investigative, legal and other expenses reasonably incurred in connection with, and any amount paid in settlement of, any action, suit or proceeding or any claim asserted) to which the Company and the Agent may be subject in such proportion as shall be appropriate to reflect the relative benefits received by the Company on the one hand and the Agent on the other hand. The relative benefits received by the Company on the one hand and the Agent on the other hand shall be deemed to be in the same proportion as the total net proceeds from the sale of the Placement Shares (before deducting expenses) received by the Company bear to the total compensation received by the Agent from the sale of Placement Shares on behalf of the Company. If, but only if, the allocation provided by the foregoing sentence is not permitted by applicable law, the allocation of contribution shall be made in such proportion as is appropriate to reflect not only the relative benefits referred to in the foregoing sentence but also the relative fault of the Company, on the one hand, and the Agent, on the other hand, with respect to the statements or omission that resulted in such loss, claim, liability, expense or damage, or action in respect thereof, as well as any other relevant equitable considerations with respect to such offering. Such relative fault shall be determined by reference to, among other things, whether the untrue or alleged untrue statement of a material fact or omission or alleged omission to state a material fact relates to information supplied by the Company or the Agent, the intent of the parties and their relative knowledge, access to information and opportunity to correct or prevent such statement or omission. The Company and the Agent agree that it would not be just and equitable if contributions pursuant to this Section 10(e) were to be determined by pro rata allocation or by any other method of allocation that does not take into account the equitable considerations referred to herein. The amount paid or payable by an indemnified party as a result of the loss, claim, liability, expense, or damage, or action in respect thereof, referred to above in this Section 10(e) shall be deemed to include, for the purpose of this Section 10(e), any legal or other expenses reasonably incurred by such indemnified party in connection with investigating or defending any such action or claim to the extent consistent with Section 10(c) hereof. Notwithstanding the foregoing provisions of this Section 10(e), the Agent shall not be required to contribute any amount in excess of the commissions received by it under this Agreement and no person found guilty of fraudulent misrepresentation (within the meaning of Section 12(f) of the Securities Act) will be entitled to contribution from any person who was not guilty of such fraudulent misrepresentation. For purposes of this Section 10(e), any person who controls a party to this Agreement within the meaning of the Securities Act, any affiliates of the Agent and any officers, directors, partners, employees or agents of the Agent or any of its affiliates, will have the same rights to contribution as that party, and each director of the Company and each officer of the Company who signed the Registration Statement will have the same rights to contribution as the Company, subject in each case to the provisions hereof. Any party entitled to contribution, promptly after receipt of notice of commencement of any action against such party in respect of which a claim for contribution may be made under this Section 10(e), will notify any such party or parties from whom contribution may be sought, but the omission to so notify will not relieve that party or parties from whom contribution may be sought from any other obligation it or they may have under this Section 10(e) except to the extent that the failure to so notify such other party materially prejudiced the substantive rights or defenses of the party from whom contribution is sought. Except for a settlement entered into pursuant to the last sentence of Section 10(c) hereof, no party will be liable for contribution with respect to any action or claim settled without its written consent if such consent is required pursuant to Section 10(c) hereof.

11. Representations and Agreements to Survive Delivery. The indemnity and contribution agreements contained in Section 10 of this Agreement and all representations and warranties of the Company herein or in certificates delivered pursuant hereto shall survive, as of their respective dates, regardless of (i) any investigation made by or on behalf of the Agent, any controlling persons, or the Company (or any of their respective officers, directors, employees or controlling persons), (ii) delivery and acceptance of the Placement Shares and payment therefor or (iii) any termination of this Agreement.

12. Termination.

(a) The Agent may terminate this Agreement by notice to the Company as hereinafter specified at any time (1) if there has been, since the time of execution of this Agreement or since the date as of which information is given in the Prospectus, any Material Adverse Effect, or any change, or any development or event that is reasonably likely to have a Material Adverse Effect, which individually or in the aggregate, in the reasonable judgment of the Agent is so material and adverse as to make it impractical or inadvisable to market the Placement Shares or to enforce contracts for the sale of the Placement Shares, (2) if there has occurred any material adverse change in the financial markets in the United States or the international financial markets, any outbreak of hostilities or escalation thereof or other calamity or crisis or any change or development involving a prospective change in national or international political, financial or economic conditions, in each case the effect of which is such as to make it, in the reasonable judgment of the Agent, impracticable or inadvisable to market the Placement Shares or to enforce contracts for the sale of the Placement Shares, (3) if trading in the Common Stock has been suspended or limited by the Commission or the Nasdaq, or if trading generally on the Nasdaq has been suspended or limited, or minimum prices for trading have been fixed on the Nasdaq, (4) if any suspension of trading of any securities of the Company on any exchange or in the over-the-counter market shall have occurred and be continuing for at least 10 Trading Days, (5) if a major disruption of securities settlements or clearance services in the United States shall have occurred and be continuing, or (6) if a banking moratorium has been declared by either U.S. Federal or New York authorities. Any such termination shall be without liability of any party to any other party except that the provisions of Section 5(b) (Settlement of Placement Shares), Section 5(c) (Delivery of Placement Shares), Section 8 (Payment of Expenses), Section 10 (Indemnification and Contribution), Section 11 (Representations and Agreements to Survive Delivery), Section 17 (Governing Law and Time; Waiver of Jury Trial) and Section 18 (Consent to Jurisdiction) hereof shall remain in full force and effect notwithstanding such termination. If an Agent elects to terminate this Agreement as provided in this Section 12(a), such Agent shall provide the required notice as specified in Section 13 (Notices).

(b) The Company shall have the right, by giving ten (10) days' written notice as hereinafter specified to terminate this Agreement in its sole discretion at any time after the date of this Agreement. Any such termination shall be without liability of any party to any other party except that the provisions of Section 5(b), Section 5(c), Section 8, Section 10, Section 11, Section 17 and Section 18 hereof shall remain in full force and effect notwithstanding such termination.

(c) The Agent shall have the right, by giving ten (10) days' written notice as hereinafter specified to terminate this Agreement in its sole discretion at any time after the date of this Agreement. Any such termination shall be without liability of any party to any other party except that the provisions of Section 5(b), Section 5(c), Section 8, Section 10, Section 11, Section 17 and Section 18 hereof shall remain in full force and effect notwithstanding such termination.

(d) This Agreement shall remain in full force and effect unless terminated pursuant to Sections 12(a), (b), or (c) above or otherwise by mutual agreement of the parties; *provided*, *however*, that any such termination by mutual agreement shall in all cases be deemed to provide that Section 5(b), Section 5(c), Section 8, Section 10, Section 11, Section 17 and Section 18 shall remain in full force and effect. Upon termination of this Agreement and subject to the sections of this Agreement that will remain in full force and effect pursuant to this Section 12(d), the Company shall not have any liability to the Agent for any discount, commission or other compensation with respect to the Placement Shares not otherwise sold by the Agent under this Agreement.

(e) Any termination of this Agreement shall be effective on the date specified in such notice of termination; *provided*, *however*, that such termination shall not be effective until the close of business on the date of receipt of such notice by the Agent or the Company, as the case may be. If such termination shall occur prior to the Settlement Date for any sale of Placement Shares, such Placement Shares shall settle in accordance with the provisions of this Agreement.

13. Notices. All notices or other communications required or permitted to be given by any party to any other party pursuant to the terms of this Agreement shall be in writing, unless otherwise specified, and if sent to the Agent, shall be delivered to:

Allen & Company LLC
711 Fifth Avenue
New York, NY 10022
Attention: General Counsel
Email: [***]

with a copy to:

Davis Polk & Wardwell LLP
450 Lexington Avenue
New York, NY 10017
Attention: Yasin Keshvargar
Email: [***]

and if to the Company, shall be delivered to:

Pacific Biosciences of California, Inc.
1305 O'Brien Drive
Menlo Park, CA 94025
Attention: [***]
Email: [***]

with a copy to:

Wilson Sonsini Goodrich & Rosati, Professional Corporation
650 Page Mill Road
Palo Alto, CA 94304
Attention: Andrew Hoffman
Email: [***]

Each party to this Agreement may change such address for notices by sending to the parties to this Agreement written notice of a new address for such purpose. Each such notice or other communication shall be deemed given (i) when delivered personally on or before 4:30 p.m., New York City time, on a Business Day or, if such day is not a Business Day, on the next succeeding Business Day, (ii) by Electronic Notice, as set forth below, (iii) on the next Business Day after timely delivery to a nationally-recognized overnight courier or (iv) on the Business Day actually received if deposited in the U.S. mail (certified or registered mail, return receipt requested, postage prepaid). For purposes of this Agreement, "**Business Day**" shall mean any day on which the Nasdaq and commercial banks in the City of New York are open for business.

An electronic communication ("**Electronic Notice**") shall be deemed written notice for purposes of this Section 13 if sent to the email address specified by the receiving party as set forth in this Section 13. Electronic Notice shall be deemed received at the time the party sending Electronic Notice receives verification of receipt by the receiving party. Any party receiving Electronic Notice may request and shall be entitled to receive the notice on paper, in a nonelectronic form ("**Nonelectronic Notice**") which shall be sent to the requesting party within ten (10) days of receipt of the written request for Nonelectronic Notice.

14. Successors and Assigns. This Agreement shall inure to the benefit of and be binding upon the Company and the Agent and their respective successors and the parties referred to in Section 10 hereof. References to any of the parties contained in this Agreement shall be deemed to include the successors and permitted assigns of such party. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and permitted assigns any rights, remedies, obligations or liabilities under or by reason of this Agreement, except as expressly provided in this Agreement. Neither party may assign its rights or obligations under this Agreement without the prior written consent of the other party; *provided*, *however*, that the Agent may assign its rights and obligations hereunder to an affiliate thereof without obtaining the Company's consent, so long as such affiliate is a registered broker and the Agent provides advance written notice of such assignment to the Company.

15. Adjustments for Stock Splits. The parties acknowledge and agree that all share-related numbers contained in this Agreement shall be adjusted to take into account any stock split, stock dividend or similar event effected with respect to the Placement Shares.

16. Entire Agreement; Amendment; Severability; Waiver. This Agreement (including all schedules and exhibits attached hereto and Placement Notices issued pursuant hereto) constitutes the entire agreement and supersedes all other prior and contemporaneous agreements and undertakings, both written and oral, among the parties hereto with regard to the subject matter hereof. Neither this Agreement nor any term hereof may be amended except pursuant to a written instrument executed by the Company and the Agent. In the event that any one or more of the provisions contained herein, or the application thereof in any circumstance, is held invalid, illegal or unenforceable as written by a court of competent jurisdiction, then such provision shall be given full force and effect to the fullest possible extent that it is valid, legal and enforceable, and the remainder of the terms and provisions herein shall be construed as if such invalid, illegal or unenforceable term or provision was not contained herein, but only to the extent that giving effect to such provision and the remainder of the terms and provisions hereof shall be in accordance with the intent of the parties as reflected in this Agreement. No implied waiver by a party shall arise in the absence of a waiver in writing signed by such party. No failure or delay in exercising any right, power, or privilege hereunder shall operate as a waiver thereof, nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any right, power, or privilege hereunder.

17. **GOVERNING LAW AND TIME; WAIVER OF JURY TRIAL. THIS AGREEMENT SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK WITHOUT REGARD TO THE PRINCIPLES OF CONFLICTS OF LAWS. SPECIFIED TIMES OF DAY REFER TO NEW YORK CITY TIME. EACH PARTY 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.**

18. **CONSENT TO JURISDICTION. 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 WITH ANY TRANSACTION CONTEMPLATED HEREBY, 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 BROUGHT IN AN INCONVENIENT FORUM OR THAT THE VENUE OF SUCH SUIT, ACTION OR PROCEEDING IS IMPROPER. 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 (CERTIFIED OR REGISTERED MAIL, RETURN RECEIPT REQUESTED) 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.**

19. Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Delivery of an executed Agreement by one party to the other may be made by email (including any electronic signature covered by the U.S. federal ESIGN Act of 2000, Uniform Electronic Transactions Act, the Electronic Signatures and Records Act or other applicable law, e.g., www.docusign.com) or other transmission method and any counterpart so delivered shall be deemed to have been duly and validly delivered and be valid and effective for all purposes.

20. Construction. The section and exhibit headings herein are for convenience only and shall not affect the construction hereof. References herein to any law, statute, ordinance, code, regulation, rule or other requirement of any Governmental Authority shall be deemed to refer to such law, statute, ordinance, code, regulation, rule or other requirement of any Governmental Authority as amended, reenacted, supplemented or superseded in whole or in part and in effect from time to time and also to all rules and regulations promulgated thereunder.

21. Permitted Free Writing Prospectuses. The Company represents, warrants and agrees that, unless it obtains the prior written consent of the Agent, which shall not be unreasonably withheld, conditioned or delayed, and the Agent represents, warrants and agrees that, unless it obtains the prior written consent of the Company, which shall not be unreasonably withheld, conditioned or delayed, they have not made and will not make any offer relating to the Placement Shares that would constitute an Issuer Free Writing Prospectus, or that would otherwise constitute a "free writing prospectus," as defined in Rule 405, required to be filed with the Commission. Any such free writing prospectus consented to by the Agent or by the Company, as the case may be, is hereinafter referred to as a "Permitted Free Writing Prospectus." The Company represents and warrants that it has treated and agrees that it will treat each Permitted Free Writing Prospectus as an "issuer free writing prospectus," as defined in Rule 433, and has complied and will comply with the requirements of Rule 433 applicable to any Permitted Free Writing Prospectus, including timely filing with the Commission where required, legending and record keeping. For the purposes of clarity, the parties hereto agree that all free writing prospectuses, if any, listed in Exhibit A hereto are Permitted Free Writing Prospectuses.

22. Absence of Fiduciary Relationship. The Company acknowledges and agrees that:

(a) the Agent is acting solely as agent in connection with the public offering of the Placement Shares and in connection with each transaction contemplated by this Agreement and the process leading to such transactions, and no fiduciary or advisory relationship between the Company or any of its respective affiliates, stockholders (or other equity holders), creditors or employees or any other party, on the one hand, and the Agent, on the other hand, has been or will be created in respect of any of the transactions contemplated by this Agreement, irrespective of whether or not the Agent has advised or is advising the Company on other matters, and the Agent has no obligation to the Company with respect to the transactions contemplated by this Agreement except the obligations expressly set forth in this Agreement;

(b) it is capable of evaluating and understanding, and understands and accepts, the terms, risks and conditions of the transactions contemplated by this Agreement;

(c) neither the Agent nor its affiliates have provided any legal, accounting, regulatory or tax advice with respect to the transactions contemplated by this Agreement and it has consulted its own legal, accounting, regulatory and tax advisors to the extent it has deemed appropriate;

(d) it is aware that the Agent and its affiliates are engaged in a broad range of transactions which may involve interests that differ from those of the Company and the Agent and its affiliates have no obligation to disclose such interests and transactions to the Company by virtue of any fiduciary, advisory or agency relationship or otherwise; and

(e) it waives, to the fullest extent permitted by law, any claims it may have against the Agent or its for breach of fiduciary duty or alleged breach of fiduciary duty in connection with the sale of Placement Shares under this Agreement and agrees that the Agent and its affiliates shall not have any liability (whether direct or indirect, in contract, tort or otherwise) to it in respect of such a fiduciary duty claim or to any person asserting a fiduciary duty claim on its behalf or in right of it or the Company, employees or creditors of Company.

23. Recognition of the U.S. Special Resolution Regimes.

(a) In the event that the Agent is a Covered Entity and becomes subject to a proceeding under a U.S. Special Resolution Regime, the transfer from the Agent of this Agreement, and any interest and obligation in or under this Agreement, will be effective to the same extent as the transfer would be effective under the U.S. Special Resolution Regime if this Agreement, and any such interest and obligation, were governed by the laws of the United States or a state of the United States.

(b) In the event that the Agent is a Covered Entity and the Agent or a BHC Act Affiliate of the Agent becomes subject to a proceeding under a U.S. Special Resolution Regime, Default Rights under this Agreement that may be exercised against the Agent are permitted to be exercised to no greater extent than such Default Rights could be exercised under the U.S. Special Resolution Regime if this Agreement were governed by the laws of the United States or a state of the United States.

(c) For purposes of this Section 23; (a) "**BHC Act Affiliate**" has the meaning assigned to the term "affiliate" in, and shall be interpreted in accordance with, 12 U.S.C. § 1841(k), (b) "**Covered Entity**" means any of the following: (i) a "covered entity" as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 252.82(b); (ii) a "covered bank" as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 47.3(b); or (iii) a "covered FSI" as that term is defined in, and interpreted in accordance with, 12 C.F.R. § 382.2(b), (c) "**Default Right**" has the meaning assigned to that term in, and shall be interpreted in accordance with, 12 C.F.R. §§ 252.81, 47.2 or 382.1, as applicable, and (d) "**U.S. Special Resolution Regime**" means each of (i) the Federal Deposit Insurance Act and the regulations promulgated thereunder and (ii) Title II of the Dodd-Frank Wall Street Reform and Consumer Protection Act and the regulations promulgated thereunder.

24. Definitions. As used in this Agreement, the following terms have the respective meanings set forth below:

"**Applicable Time**" means (i) each Representation Date, (ii) the time of each sale of any Placement Shares pursuant to this Agreement and (iii) each Settlement Date.

"**Governmental Authority**" means (i) any federal, provincial, state, local, municipal, national or international government or governmental authority, regulatory or administrative agency, governmental commission, department, board, bureau, agency or instrumentality, court, tribunal, arbitrator or arbitral body (public or private); (ii) any self-regulatory organization; or (iii) any political subdivision of any of the foregoing.

"**Issuer Free Writing Prospectus**" means any "issuer free writing prospectus," as defined in Rule 433, relating to the Placement Shares that (1) is required to be filed with the Commission by the Company, (2) is a "road show" that is a "written communication" within the meaning of Rule 433(d)(8)(i) whether or not required to be filed with the Commission, or (3) is exempt from filing pursuant to Rule 433(d)(5)(i) because it contains a description of the Placement Shares or of the offering that does not reflect the final terms, in each case in the form filed or required to be filed with the Commission or, if not required to be filed, in the form retained in the Company's records pursuant to Rule 433(g) under the Securities Act Regulations.

"**Rule 164**," "**Rule 172**," "**Rule 405**," "**Rule 415**," "**Rule 424**," "**Rule 424(b)**," "**Rule 430B**," and "**Rule 433**" refer to such rules under the Securities Act Regulations.

All references in this Agreement to financial statements and schedules and other information that is "contained," "included" or "stated" in the Registration Statement or the Prospectus (and all other references of like import) shall be deemed to mean and include all such financial statements and schedules and other information that is incorporated by reference in the Registration Statement or the Prospectus, as the case may be.

All references in this Agreement to the Registration Statement, the Prospectus or any amendment or supplement to any of the foregoing shall be deemed to include the copy filed with the Commission pursuant to EDGAR; all references in this Agreement to any Issuer Free Writing Prospectus (other than any Issuer Free Writing Prospectuses that, pursuant to Rule 433, are not required to be filed with the Commission) shall be deemed to include the copy thereof filed with the Commission pursuant to EDGAR; and all references in this Agreement to "supplements" to the Prospectus shall include, without limitation, any supplements, "wrappers" or similar materials prepared in connection with any offering, sale or private placement of any Placement Shares by the Agent outside of the United States.

[*Signature Page Follows*]

If the foregoing correctly sets forth the understanding between the Company and the Agent, please so indicate in the space provided below for that purpose, whereupon this letter shall constitute a binding agreement between the Company and the Agent.

Very truly yours,

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

By: /s/ Mark Van Oene
Name: Mark Van Oene
Title: President and Chief Executive Officer

ACCEPTED as of the date first-above written:

ALLEN & COMPANY LLC

By: /s/ Peter Dilorio
Name: Peter Dilorio
Title: General Counsel

SCHEDULE 1

Form of Placement Notice

From: Pacific Biosciences of California, Inc.

To: Allen & Company LLC
Attention: [●]

Subject: Placement Notice

Date [●], 202[●]

Ladies and Gentlemen:

Pursuant to the terms and subject to the conditions contained in the Sales Agreement between Pacific Biosciences of California, Inc., a Delaware corporation (the "**Company**"), and Allen & Company LLC, dated November 10, 2026, the Company hereby requests that Allen & Company LLC sell up to [●] of the Company's common stock, par value $0.001 per share, at a minimum market price of $[●] per share, during the time period beginning [month, day, time] and ending [month, day, time].

SCHEDULE 2

Compensation

The Company shall pay to the Agent in cash, upon each sale of Placement Shares pursuant to this Agreement, an amount equal to up to 3.0% of the aggregate gross proceeds from each sale of Placement Shares.

SCHEDULE 3

Notice Parties

The Company

[***]

The Agent

[***]

Form of Representation Date Certificate Pursuant to Section 7(l)

The undersigned, the duly qualified and elected Chief Executive Officer of Pacific Biosciences of California, Inc., a Delaware corporation (the "Company"), does hereby certify in such capacity and on behalf of the Company, pursuant to Section 7(l) of the Sales Agreement, dated November 10, 2026 (the "Sales Agreement"), by and between the Company and Allen & Company LLC, that to the best of the knowledge of the undersigned:

(i) The representations and warranties of the Company in Section 6 of the Sales Agreement are true and correct on and as of the date hereof with the same force and effect as if expressly made on and as of the date hereof, except for those representations and warranties that speak solely as of a specific date and which were true and correct as of such date; *provided*, *however*, that such representations and warranties also shall be qualified by the disclosure included or incorporated by reference in the Registration Statement and Prospectus; and

(ii) The Company has complied with all agreements and satisfied all conditions on its part to be performed or satisfied pursuant to the Sales Agreement at or prior to the date hereof.

Capitalized terms used herein without definition shall have the meanings given to such terms in the Sales Agreement.

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.

By: _____
Name: [●]
Title: [●]

Date: [●]

Exhibit A

Permitted Free Writing Prospectus

[None.]

Exhibit 5.1

WILSON SONSINI

Wilson Sonsini Goodrich & Rosati
Professional Corporation
650 Page Mill Road
Palo Alto, California 94304-1050
o: 650.493.9300
f: 650.493.6811

November 10, 2026

Pacific Biosciences of California, Inc
1305 O'Brien Drive
Menlo Park, California 94025

Re: Registration Statement on Form S-3

Ladies and Gentlemen:

We have acted as counsel to Pacific Biosciences of California, Inc., a Delaware corporation (the "Company"), in connection with the registration of the proposed offer and sale of up to $100,000,000 of shares (the "Shares") of the Company's common stock, $0.001 par value per share, pursuant to the Company's Registration Statement on Form S-3ASR (File No. 333-293751) (the "Registration Statement") including the prospectus dated February 25, 2026 included therein (the "Base Prospectus"), filed by the Company with the Securities and Exchange Commission (the "Commission") in connection with the registration pursuant to the Securities Act of 1933, as amended (the "Act"), of the Shares.

The offering and sale of the Shares are being made pursuant to the Sales Agreement, dated as of November 10, 2026 (the "Sales Agreement"), by and between the Company and Allen & Company LLC.

We have examined copies of the Sales Agreement, the Registration Statement, the Base Prospectus, and the prospectus supplement thereto related to the offering of the Shares, which prospectus supplement is dated as of November 10, 2026 and will be filed by the Company in accordance with Rule 424(b) promulgated under the Act (the "Prospectus Supplement" and together with the Base Prospectus, the "Prospectus"). We have also examined instruments, documents and records which we deemed relevant and necessary for the basis of our opinion hereinafter expressed.

In such examination, we have assumed (a) the authenticity of original documents and the genuineness of all signatures; (b) the conformity to the originals of all documents submitted to us as copies; (c) the truth, accuracy and completeness of the information, representations and warranties contained in the instruments, documents, certificates and records we have reviewed; (d) that the Registration Statement, and any amendments thereto (including post-effective amendments), will have become effective under the Act; (e) that the Prospectus Supplement will have been filed with the Commission describing the Shares offered thereby; (f) that the Shares will be sold in compliance with applicable U.S. federal and state securities laws and in the manner stated in the Registration Statement and the Prospectus; and (g) the legal capacity of all natural persons. As to any facts material to the opinions expressed herein that were not independently established or verified, we have relied upon oral or written statements and representations of officers and other representatives of the Company.

Based on and subject to the foregoing, we are of the opinion that the Shares have been duly authorized by the Company and, when issued and delivered by the Company against payment therefor in accordance with the terms of the Sales Agreement, will be validly issued, fully paid and nonassessable.

We express no opinion as to the laws of any other jurisdiction other than the federal laws of the United States of America and the General Corporation Law of the State of Delaware.

* * *

We hereby consent to the use of this opinion as an exhibit to the Company's Current Report on Form 8-K, filed on or about November 10, 2026 for incorporation by reference into the Registration Statement and the Prospectus. In giving such consent, we do not thereby admit that we are in the category of persons whose consent is required under Section 7 of the Act or the rules and regulations of the Commission thereunder.

Sincerely,

/s/ Wilson Sonsini Goodrich & Rosati, P.C.

WILSON SONSINI GOODRICH & ROSATI
Professional Corporation