

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

**FORM 8-K**

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

**Date of Report (Date of earliest event reported): February 26, 2020**

**KOPPERS HOLDINGS INC.**

(Exact name of registrant as specified in its charter)

**Pennsylvania**  
(State or other jurisdiction  
of incorporation)

**1-32737**  
(Commission  
File Number)

**20-1878963**  
(IRS Employer  
Identification No.)

**436 Seventh Avenue**  
**Pittsburgh, Pennsylvania**  
(Address of principal executive offices)

**15219**  
(Zip Code)

**Registrant's telephone number, including area code: (412) 227-2001**

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

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

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

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
<b>Common Stock</b>	<b>KOP</b>	<b>The New York Stock Exchange</b>

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 February 26, 2020, Koppers Holdings Inc. (the “Company”) and certain of its wholly owned domestic subsidiaries entered into a Fourth Amendment to Credit Agreement, dated as of February 26, 2020 (the “Amendment”), amending that certain Credit Agreement dated as of February 17, 2017 (the “Credit Agreement”), by and among the Company, the Guarantors party thereto, the Lenders party thereto and PNC Bank, National Association, as Administrative Agent. The Amendment amends the Credit Agreement to, among other things, (i) revise the LIBOR replacement language, (ii) revise certain provisions regarding mandatory prepayments of the term loan facility with proceeds of equity issuances and associated definitions, (iii) remove the step downs in the maximum total secured leverage ratio and maximum total leverage ratio which would otherwise occur at the time of a first equity issuance, and (iv) revise certain provisions regarding disposition of assets by certain subsidiaries of Koppers Inc.

The foregoing is a summary of the material terms and conditions of the Amendment and is qualified in its entirety by reference to the full text of the Amendment, which is filed as Exhibit 10.1 to this Current Report on Form 8-K and incorporated herein by reference.

### **Item 8.01 Other Events.**

On February 27, 2020, the Company filed a prospectus supplement with the Securities and Exchange Commission which contemplates the sale of up to \$100,000,000 of shares of the Company’s common stock, par value \$0.01 per share (the “Placement Shares”), from time to time in at-the-market offering pursuant to an At Market Issuance Sales Agreement with B. Riley FBR, Inc. (the “Sales Agent”), dated as of February 27, 2020 (the “Sales Agreement”). Sales pursuant to the Sales Agreement will be made only upon instructions by the Company to the Sales Agent. The Company cannot provide any assurances that it will issue and sell any Placement Shares pursuant to the Sales Agreement at any particular time or at all. A copy of the Sales Agreement is filed as Exhibit 1.1 hereto and is incorporated herein by reference.

K&L Gates LLP, counsel to the Company, has issued a legal opinion relating to the Placement Shares. A copy of such legal opinion is attached as Exhibit 5.1 hereto.

### **Item 9.01 Financial Statements and Exhibits.**

#### (d) Exhibits

- 1.1 [At Market Issuance Sales Agreement, dated as of February 27, 2020, by and between Koppers Holdings Inc. and B. Riley FBR, Inc.](#)
- 5.1 [Opinion of K&L Gates LLP.](#)
- 10.1 [Fourth Amendment to Credit Agreement, dated as of February 26, 2020, by and among the Company, the Guarantors party thereto, the Lenders party thereto and PNC Bank, National Association, as Administrative Agent.](#)
- 23.1 [Consent of K&L Gates LLP \(included in Exhibit 5.1\).](#)
- 104 Cover Page Interactive Data File (embedded within the Inline XBRL document).

SIGNATURES

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

**Dated: February 27, 2020**

KOPPERS HOLDINGS INC.

By: /s/ Michael J. Zugay

Michael J. Zugay  
Chief Financial Officer

**KOPPERS HOLDINGS INC.**  
Common Stock  
(par value \$0.01 per share)  
**At Market Issuance Sales Agreement**

February 27, 2020

B. Riley FBR, Inc.  
299 Park Avenue, 21st Floor  
New York, NY 10171

Ladies and Gentlemen:

Koppers Holdings Inc., a Pennsylvania corporation (the “Company”), confirms its agreement (this “Agreement”) with B. Riley FBR, Inc. (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 through or to the Agent, as sales agent or principal, shares (the “Placement Shares”) of the Company’s common stock, par value \$0.01 per share (the “Common Stock”); *provided however*, that in no event shall the Company issue or sell through the Agent such number of Placement Shares that exceeds the number of shares or dollar amount registered on the Prospectus Supplement (as defined below) (the “Maximum Amount”) and *provided further, however*, that in no event shall the aggregate number of Placement Shares sold pursuant to this Agreement exceed the number of authorized but unissued shares of Common Stock. Notwithstanding anything to the contrary contained herein, the parties hereto agree that compliance with the limitations set forth in this Section 1 on the number 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. The issuance and sale of Placement Shares through the Agent will be effected pursuant to the Registration Statement (as defined below) filed by the Company and which will become automatically effective under Rule 462(e) under the Securities Act (as defined below) upon filing with the Securities and Exchange Commission (the “Commission”), although nothing in this Agreement shall be construed as requiring the Company to use the Registration Statement to issue any Placement Shares. The Registration Statement will be an “automatic shelf registration statement” (as defined in Rule 405 under the Securities Act).

The Company has filed, in accordance with the provisions of the Securities Act of 1933, as amended and the rules and regulations thereunder (the “Securities Act”), with the Commission, a registration statement on Form S-3, including a base prospectus, relating to certain securities, including the Common Stock 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 and the rules and regulations thereunder (the “Exchange Act”). The Company has prepared a prospectus

supplement to the base prospectus included as part of such registration statement specifically relating to the Placement Shares (the “Prospectus Supplement”). The Company will furnish to the Agent, for use by the Agent, copies of the base prospectus included as part of such registration statement, as supplemented by any Prospectus Supplement relating to the Placement Shares. Except where the context otherwise requires, such registration statement, and any post-effective amendment 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 or deemed to be a part of such registration statement pursuant to Rule 430B of the Securities Act, or any subsequent registration statement on Form S-3 filed pursuant to Rule 415(a)(6) under the Securities Act by the Company to cover any Placement Shares, is herein called the “Registration Statement.” The base prospectus, including all documents incorporated or deemed incorporated therein by reference to the extent such information has not been superseded or modified in accordance with Rule 412 under the Securities Act (as qualified by Rule 430B(g) of the Securities Act), included in the Registration Statement, as it may be supplemented by the Prospectus Supplement, in the form in which such base prospectus and/or Prospectus Supplement have most recently been filed by the Company with the Commission pursuant to Rule 424(b) under the Securities Act is herein called the “Prospectus.” Any reference herein to the Registration Statement, the Prospectus or any amendment or supplement thereto shall be deemed to refer to and include the documents incorporated or deemed incorporated by reference therein, and any reference herein to the terms “amend,” “amendment” or “supplement” with respect to the Registration Statement or the Prospectus shall be deemed to refer to and include the filing after the execution hereof of any document with the Commission incorporated by reference therein (the “Incorporated Documents”).

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 electronic mail (or other method mutually agreed to in writing by the parties) of the number of Placement Shares, 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 immediately upon receipt by the Agent and shall remain effective unless and until (i) the Agent declines to accept the terms contained therein for any reason, in its sole discretion, (ii) the entire amount of the Placement Shares thereunder has been sold, (iii) the Company suspends or terminates the Placement Notice, which suspension and termination rights may be exercised by the Company in its sole discretion, or (iv) this Agreement has been terminated under the

provisions of Section 13. 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 Sections 2 or 3 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 terms and conditions of this Agreement, for the period specified in a Placement Notice, the Agent 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 New York Stock Exchange (the “Exchange”), 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 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 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 a 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 of the Securities Act. “Trading Day” means any day on which shares of Common Stock are purchased and sold on the Exchange.

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 verifiable facsimile transmission or 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.

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 state and federal laws, rules and regulations and the rules of the Exchange to sell such Placement Shares up to the amount specified in, 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 state and federal laws, rules and regulations and the rules of the Exchange 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 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 second (2<sup>nd</sup>) 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 opening of the Trading Day following the Trading Day that the Agent sold Placement Shares. 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 or self-regulatory organization 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 and such designee's account information at least one Trading Day prior to the Settlement Date) at The Depository Trust Company through its Deposit and Withdrawal at Custodian System ("DWAC") 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. If other means of delivery are mutually agreed upon by the parties hereto, the Agent shall provide DWAC instructions or instructions for delivery by other means with regard to the transfer of Placement Shares being sold. 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 Company agrees that if the Company, or its transfer agent (if applicable), defaults in its obligation to deliver Placement Shares on a Settlement Date through no fault of the Agent, then in addition to and in no way limiting the rights and obligations set forth in Section 11(a) hereto, it will (i) hold the Agent harmless against any loss, claim, damage, or reasonable, 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. Limitations on Offering Size. Under no circumstances shall the Company cause or request the offer or sale of any Placement Shares if, after giving effect to the sale of such Placement Shares, the aggregate number 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, (B) the amount available for offer and sale under the currently effective Registration Statement and (C) 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, and 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, and notified to the Agent in writing.

6. Representations and Warranties of the Company. Except as disclosed in the Registration Statement or Prospectus (including the Incorporated Documents), the Company represents and warrants to, and agrees with the Agent that 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 date or time:

a. Registration Statement and Prospectus. The transactions contemplated by this Agreement, assuming no act or omission on the part of the Agent that would make such statement untrue, meet the requirements for and comply with the conditions for the use of Form S-3 under the Securities Act. The Registration Statement has been filed with the Commission and is effective under the Securities Act. Any Prospectus Supplement will name the Agent as the agent in the section of such Prospectus Supplement 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, as applicable. 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 (as defined below) to which the Agent has consented, which consent will not be unreasonably withheld or delayed, or that is required by applicable law or the listing maintenance requirements of the Exchange. The Common Stock is currently quoted on the Exchange under the trading symbol "KOP." The Company has not, in the 12 months preceding the date hereof, received notice from the Exchange to the effect that the Company is not in compliance with the listing or maintenance requirements of the Exchange. To the Company's knowledge, it is in compliance with all such listing and maintenance requirements.



b. No Misstatement or Omission. 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 or becomes effective, did not, and will not, contain an untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary to make the statements therein not misleading. The Prospectus and any amendment and supplement thereto, 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 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 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 specifically for use in the preparation thereof.

c. Conformity with Securities Act and Exchange Act. The Registration Statement, the Prospectus, any Issuer Free Writing Prospectus or any amendment or supplement thereto, and the Incorporated Documents, 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. Financial Information. The consolidated financial statements of the Company included or incorporated by reference in the Registration Statement and the Prospectus, 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 and the Subsidiaries for the periods specified (subject, in the case of unaudited statements, to normal year-end audit adjustments) and have been prepared in compliance with the published requirements of the Securities Act and Exchange Act, as applicable, and in conformity with generally accepted accounting principles in the United States ("GAAP") applied on a consistent basis (except (i) for such adjustments to accounting standards and practices as are noted therein and (ii) in the case of unaudited interim statements, to the extent they may exclude footnotes or may be condensed or summary statements) during the periods involved; the other financial and statistical data with respect to the Company and the Subsidiaries contained or incorporated by reference in the Registration Statement and the Prospectus are accurately and fairly presented 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 or the Prospectus that are not included or incorporated by reference as required; the Company and the Subsidiaries, on a consolidated basis, do not have any material liabilities or obligations, direct or contingent (including any off-balance sheet obligations), not described in the Registration Statement, and the Prospectus which are required to be described in the Registration Statement or Prospectus; and all disclosures contained or incorporated by reference in the Registration Statement and the Prospectus, if any, regarding "non-GAAP financial measures" (as such term is defined by the rules and regulations of the Commission) comply in all material respects with Regulation G of the Exchange Act and Item 10 of Regulation S-K under the Securities Act, to the extent applicable.

e. 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.

f. Organization. The Company and any subsidiary that is a significant subsidiary (as such term is defined in Rule 1-02 of Regulation S-X promulgated by the Commission) (each, a “Subsidiary,” collectively, the “Subsidiaries”), are, and will be, duly organized, validly existing as a corporation and in good standing under the laws of their respective jurisdictions of organization. The Company and the Subsidiaries 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 on the assets, business, operations, earnings, properties, condition (financial or otherwise), prospects, stockholders’ equity or results of operations of the Company and the Subsidiaries taken as a whole, or prevent the consummation of the transactions contemplated hereby (a “Material Adverse Effect”).

g. Subsidiaries. Except as disclosed in the Registration Statement or Prospectus (including the Incorporated Documents), 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. The Company does not own or control, directly or indirectly, any corporation, association or other entity other than the subsidiaries listed in Exhibit 21.1 to the Company’s Annual Report on Form 10-K for the most recently ended fiscal year and other than (i) those subsidiaries not required to be listed on Exhibit 21.1 by Item 601 of Regulation S-K under the Exchange Act and (ii) those subsidiaries formed or acquired since the last day of the most recently ended fiscal year.

h. No Violation or Default. Neither the Company nor any Subsidiary 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 similar agreement or instrument to which the Company or any Subsidiary is a party or by which the Company or any Subsidiary is bound or to which any of the property or assets of the Company or any Subsidiary is subject; or (iii) in violation of any law or statute or any judgment, order, rule or regulation of any court or arbitrator or governmental or regulatory 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. To the Company’s knowledge, no other party under any material contract or other agreement to which it or any Subsidiary is a party is in default in any respect thereunder where such default would have a Material Adverse Effect.

i. **No Material Adverse Effect.** Since the date of the most recent financial statements of the Company included or incorporated by reference in the Registration Statement and Prospectus, there has not been (i) any Material Adverse Effect, or any development that would reasonably be expected to 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 the Subsidiaries, which is material to the Company and the Subsidiaries taken as a whole, (iv) any material change in the capital stock (other than (A) the grant of additional equity awards under the Company's existing equity compensation plans, (B) 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 or upon the vesting, exercise or settlement of equity awards under the Company's equity incentive plans or due to the sale of shares of Common Stock in connection with any employee stock purchase plan of the Company whether now in effect or hereafter implemented, (C) as a result of the issuance of Placement Shares, (D) any repurchases of capital stock of the Company, (E) as described in a proxy statement filed on Schedule 14A or a Registration Statement on Form S-4, or (F) otherwise publicly announced) or outstanding long-term indebtedness of the Company or the Subsidiaries or (v) any dividend or distribution of any kind declared, paid or made on the capital stock of the Company, other than in each case above (a) in the ordinary course of business, (b) as otherwise disclosed in the Registration Statement or Prospectus (including any document incorporated by reference therein) or (c) where such matter, item, change or development would not make the statements in the Registration or Prospectus 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.

j. **Capitalization.** The issued and outstanding shares of capital stock of the Company have been validly issued, are fully paid and non-assessable 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 (i) the grant of additional equity awards under the Company's equity compensation plans, (ii) changes in the number of outstanding 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 or upon the vesting, exercise or settlement of equity awards under the Company's equity incentive plans or due to the sale of shares of Common Stock in connection with any employee stock purchase plan of the Company whether now in effect or hereafter implemented, (iii) as a result of the issuance of Placement Shares, or (iv) any repurchases of capital stock of the Company) and such authorized capital stock conforms to the description thereof set forth in the Registration Statement and the Prospectus. The description of the Common Stock 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 dates referred to therein, the Company did 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.

k. S-3 Eligibility. (i) At the time of filing the Registration Statement and (ii) at the time of the most recent amendment thereto for the purposes of complying with Section 10(a)(3) of the Securities Act (whether such amendment was by post-effective amendment, incorporated report filed pursuant to Section 13 or 15(d) of the Exchange Act or form of prospectus), the Company met, or will meet, the then applicable requirements for use of Form S-3 under the Securities Act, including compliance with General Instruction I.B.1 of Form S-3, as applicable.

l. 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 against the Company in accordance with its 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 and contribution provisions of Section 11 hereof may be limited by federal or state securities laws and public policy considerations in respect thereof.

m. Authorization of Placement Shares. The Placement Shares, 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 and validly authorized and issued and fully paid and nonassessable, free and clear of any pledge, lien, encumbrance, security interest or other claim (other than any pledge, lien, encumbrance, security interest or other claim arising from an act or omission of the Agent or a purchaser), 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 Prospectus.

n. No Consents Required. No consent, approval, authorization, order, registration or qualification of or with any court or arbitrator or any governmental or regulatory authority is required for the execution, delivery and performance by the Company of this Agreement, and the issuance and sale by the Company of the Placement Shares as contemplated hereby, except for such consents, approvals, authorizations, orders and registrations or qualifications (i) 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 Exchange, including any notices that may be required by the Exchange, in connection with the sale of the Placement Shares by the Agent, (ii) as may be required under the Securities Act and (iii) as have been previously obtained by the Company.

o. No Preferential Rights. Except as otherwise disclosed in the Registration Statement or the Prospectus, (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 (other than upon the exercise of options or warrants to purchase Common Stock or upon the exercise, vesting or settlement of equity awards that may be granted from time to time under the Company's equity compensation plans or upon the sale of Common Stock in connection with any employee stock purchase plan of the Company whether now in effect or hereafter implemented), (ii) no Person has any preemptive rights, rights of first refusal, 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 from the Company which have not been duly waived with respect to the offering contemplated hereby, (iii) no Person has the right to act as an underwriter or as a financial advisor to the Company in connection with the offer and sale of the Common Stock, 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, except in each case for such rights as have been waived on or prior to the date hereof.

p. Independent Public Accountant. KPMG LLP or any such other independent registered public accounting firm serving as such to the Company (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 into the Registration Statement, are and, during the periods covered by their report, were independent public accountants 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.

q. Enforceability of Agreements. All agreements between the Company and third parties expressly referenced in the Prospectus, other than such agreements that have expired by their terms or whose termination is disclosed in documents filed by the Company on EDGAR, are legal, valid and binding obligations of the Company and, to the Company's knowledge, 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, and except for any unenforceability that, individually or in the aggregate, would not reasonably be expected to have a Material Adverse Effect.

r. No Litigation. There are no legal or governmental proceedings pending or threatened to which the Company or any Subsidiary is a party or to which any of the properties of the Company or any Subsidiary is subject (i) other than proceedings accurately described in all material respects in the Prospectus and proceedings that would not reasonably be expected to have a Material Adverse Effect on the Company and its subsidiaries, taken as a whole, or on the power or ability of the Company to perform its obligations under this Agreement or to consummate the transactions contemplated by the Prospectus or (ii) that are required to be described in the Registration Statement or the Prospectus and are not so described; and there are no 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 that are not described or filed as required.

s. Licenses and Permits. The Company and the Subsidiaries possess or have obtained, all licenses, certificates, consents, orders, approvals, permits and other authorizations issued by, and have made all declarations and filings with, the appropriate federal, state, local or foreign governmental or regulatory authorities that are necessary for the ownership or lease of their respective properties or the conduct of their respective businesses as currently conducted, as described in the Registration Statement and the Prospectus (the "Permits"), except where the failure to possess, obtain or make the same would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. Neither the Company nor any Subsidiary has received written notice of any proceeding relating to revocation or modification of any such Permit or has any reason to believe that such Permit will not be renewed in the ordinary course, except where the failure to obtain any such renewal would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

t. No Material Defaults. Neither the Company nor any Subsidiary 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.

u. Certain Market Activities. Neither the Company, nor any Subsidiary, nor, to the knowledge of the Company, any of their respective directors, officers or controlling persons has taken, directly or indirectly, any action designed, or that has constituted or would reasonably be expected to cause or result in, under the Exchange Act or otherwise, the stabilization or manipulation of the price of any security of the Company to facilitate the sale or resale of the Placement Shares.

v. Broker/Dealer Relationships. Neither the Company nor any Subsidiary or any 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).

w. No Reliance. The Company has not relied upon the Agent or legal counsel for the Agent for any legal, tax or accounting advice in connection with the offering and sale of the Placement Shares.

x. Taxes. The Company and the Subsidiaries have filed all federal, state, local and foreign tax returns which have been required to be filed and paid all 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 where the failure to do so would not reasonably be expected to

have a Material Adverse Effect. Except as otherwise disclosed in or contemplated by the Registration Statement or the Prospectus, no tax deficiency has been determined adversely to the Company or any Subsidiary which has had, or would reasonably be expected to have, individually or in the aggregate, a Material Adverse Effect. The Company has no knowledge of any federal, state or other governmental tax deficiency, penalty or assessment which has been or might be asserted or threatened against it which would reasonably be expected to have a Material Adverse Effect.

y. Title to Real and Personal Property. The Company and the Subsidiaries have good and valid title in fee simple to all items of real property and good and valid title to all personal property described in the Registration Statement or 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 that (i) do not materially interfere with the use made and proposed to be made of such property by the Company and the Subsidiaries or (ii) would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. Any real property described in the Registration Statement or Prospectus as being leased by the Company and the 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 the Subsidiaries or (B) would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect.

z. Intellectual Property. The Company and the Subsidiary own or possess adequate enforceable rights to use all patents, patent applications, trademarks (both registered and unregistered), trade names, trademark registrations, service marks, service mark registrations, Internet domain name registrations, copyrights, copyright registrations, licenses and know-how (including trade secrets and other unpatented and/or unpatentable proprietary or confidential information, systems or procedures) (collectively, the "Intellectual Property"), necessary for the conduct of their respective businesses as conducted as of the date hereof, except to the extent that the failure to own or possess adequate rights to use such Intellectual Property would not, individually or in the aggregate, reasonably be expected to have a Material Adverse Effect. Except as otherwise disclosed in the Registration Statement or the Prospectus (including the Incorporated Documents), (a) the Company and the Subsidiaries have not received any written notice of any pending claim of infringement or conflict which asserted Intellectual Property rights of others, which infringement or conflict, if the subject of an unfavorable decision, would reasonably be expected to result in a Material Adverse Effect, (b) there are no pending, or to the Company's knowledge, threatened judicial proceedings or interference proceedings challenging the Company's or any Subsidiary's rights in or to or the validity of the scope of any of the Company's or its Subsidiaries' material patents, patent applications or proprietary information, (c) no other entity or individual has any right or claim in any of the Company's or any of its Subsidiary's material patents, patent applications or any material patent to be issued therefrom by virtue of any contract, license or other agreement entered into between such entity or individual and the Company or any Subsidiary or by any non-contractual obligation, other than by written licenses granted by the Company or any Subsidiary, and (d) the Company has not received any written notice of any pending claim challenging the rights of the Company or its Subsidiaries in or to any material Intellectual Property owned, licensed or optioned by the Company or any Subsidiary which claim, if the subject of an unfavorable decision, would reasonably be expected to result in a Material Adverse Effect.

aa. Compliance with Applicable Laws. The Company has not been advised, and has no reason to believe, that it and each of its subsidiaries are not conducting business in compliance with all applicable laws, rules and regulations of the jurisdictions in which it is conducting business, except where failure to be so in compliance would not reasonably be expected to result in a Material Adverse Effect.

bb. Environmental Laws. The Company and the 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 and 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 or as are otherwise disclosed in the Registration Statement or the Prospectus.

cc. Disclosure Controls. The Company maintains a system of internal accounting controls sufficient to provide reasonable assurance that (i) transactions are executed in accordance with management's general or specific authorizations; (ii) transactions are recorded as necessary to permit preparation of financial statements in conformity with GAAP and to maintain asset accountability; (iii) access to assets is permitted only in accordance with management's general or specific authorization; and (iv) the recorded accountability for assets is compared with the existing assets at reasonable intervals and appropriate action is taken with respect to any differences. The Company 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) that comply with the requirements of the Exchange Act. The Company's certifying officers have evaluated the effectiveness of the Company's 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 most recent Evaluation Date, which stated that such "disclosure controls and procedures" were effective.



dd. Sarbanes-Oxley Act. There is and has been no failure on the part of the Company or, to the knowledge of the Company, 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 during the past 12 months. For purposes of the preceding sentence, "principal executive officer" and "principal financial officer" shall have the meanings given to such terms in the Exchange Act Rules 13a-15 and 15d-15.

ee. Finder's Fees. Neither the Company nor any Subsidiary 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 the Agent pursuant to this Agreement.

ff. Labor Disputes. Except as otherwise disclosed in the Registration Statement or the Prospectus, no labor disturbance by or dispute with employees of the Company or any Subsidiary 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 Subsidiary is or, after giving effect to the offering and sale of the Placement Shares, will be 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 the Subsidiaries are and have been conducted at all times in compliance with applicable financial record keeping and reporting requirements of the Currency and Foreign Transactions Reporting Act of 1970, as amended, the money laundering statutes of all jurisdictions to which the Company or the Subsidiaries are subject, the rules and regulations thereunder and any related or similar rules, regulations or guidelines, issued, administered or enforced by any governmental agency having jurisdiction over the Company (collectively, the "Money Laundering Laws"), except where the failure to be in such compliance would not result in a Material Adverse Effect; and no action, suit or proceeding by or before any court or governmental agency, authority or body or any arbitrator involving the Company or any Subsidiary with respect to the Money Laundering Laws is pending or, to the knowledge of the Company, 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 structured 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 Registration Statement or the Prospectus which have not been described as required.

jj. Underwriter Agreements. Other than with respect to 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.

kk. ERISA. To the knowledge of the Company, (i) 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 the 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”); (ii) 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 (iii) 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) equals or exceeds the present value of all benefits accrued under such plan determined using reasonable actuarial assumptions, other than, in the case of (i), (ii) and (iii) above, as would not reasonably be expected to have a Material Adverse Effect.

ll. Forward-Looking Statements. No forward-looking statement (within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act) (a “Forward-Looking Statement”) contained in the Registration Statement and the Prospectus has been made or reaffirmed without a reasonable basis or has been disclosed other than in good faith.

mm. 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.

nn. Insurance. The Company and the Subsidiaries carry, or are covered by, insurance in such amounts and covering such risks as the Company and the Subsidiaries reasonably believe are adequate for the conduct of their business.

oo. No Improper Practices. (i) Neither the Company nor, to the Company’s knowledge, the Subsidiaries, nor to the Company’s knowledge, any of their respective executive officers 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 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 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, the Subsidiaries 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, the Subsidiaries, 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 the Subsidiaries or any affiliate of them, on the one hand, and the directors, officers, stockholders or directors of the Company or, to the Company's knowledge, the Subsidiaries, 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) there are no material outstanding loans or advances or material guarantees of indebtedness by the Company or, to the Company's knowledge, the Subsidiaries 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; and (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 the Subsidiaries to alter the customer's or supplier's level or type of business with the Company or the Subsidiaries or (B) a trade journalist or publication to write or publish favorable information about the Company or the Subsidiaries or any of their respective products or services, and, (vi) except as otherwise disclosed in the Registration Statement or Prospectus, neither the Company nor the Subsidiaries nor, to the Company's knowledge, any employee or agent of the Company or the Subsidiaries has made any payment of funds of the Company or the Subsidiaries or received or retained any funds in violation of any law, rule or regulation (including, without limitation, the Foreign Corrupt Practices Act of 1977), which payment, receipt or retention of funds is of a character required to be disclosed in the Registration Statement or the Prospectus.

pp. Status Under the Securities Act. The Company was not and is not an ineligible issuer as defined in Rule 405 under the Securities Act at the times specified in Rules 164 and 433 under the Securities Act in connection with the offering of the Placement Shares.

qq. No Misstatement or Omission in an Issuer Free Writing Prospectus. Each Issuer Free Writing Prospectus, as of its issue date and as of each Applicable Time (as defined in Section 25 below), did not, does not and will not, through the completion of the Placement or Placements for which such Issuer Free Writing Prospectus is issued, include any information that conflicted, conflicts or will conflict with the information contained in the Registration Statement or the Prospectus, including any Incorporated Document deemed to be a part thereof that has not been superseded or modified. The foregoing sentence does not apply to statements in or omissions from any Issuer Free Writing Prospectus based upon and in conformity with written information furnished to the Company by the Agent specifically for use therein.

rr. 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, nor the compliance by the Company with the terms and provisions hereof 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 reasonably be expected to 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 material violation of the provisions of any statute or any order, rule or regulation applicable to the Company or of any court or of any federal, state or other regulatory authority or other government body having jurisdiction over the Company, except where such violation would not reasonably be expected to have a Material Adverse Effect.

ss. OFAC.

(i) Neither the Company nor any Subsidiary (collectively, the “Entity”) nor, to the Company’s knowledge, any director, officer, employee, agent, affiliate or representative of the Entity, is a government, individual, or entity (in this paragraph (ss), “Person”) that is, or is owned or controlled 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 (“UNSC”), the European Union (“EU”), Her Majesty’s Treasury (“HMT”), or other relevant sanctions authority (collectively, “Sanctions”), nor

(b) located, organized or resident in a country or territory that is the subject of Sanctions.

(ii) The Entity will not, directly or indirectly, knowingly 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

(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 underwriter, advisor, investor or otherwise).

(iii) The Entity represents and covenants that, except as detailed in the Registration Statement and the Prospectus, for the past five years, it has not knowingly engaged in and is not now knowingly engaged in any dealing or transactions with any Person, or in any country or territory, that at the time of the dealing or transaction is or was the subject of Sanctions.

tt. Stock Transfer Taxes. On each Settlement Date, all material stock transfer or other taxes (other than income taxes) which are required to be paid in connection with the sale and transfer of the Placement Shares to be sold hereunder will be, or will have been, fully paid or provided for by the Company and all laws imposing such taxes will be or will have been fully complied with by the Company in all material respects.

uu. IT Systems. (i)(x) To the knowledge of the Company and except as otherwise disclosed in the Registration Statement or the Prospectus, there has been no material security breach or other compromise of any of the Company’s information technology and computer systems, networks, hardware, software, data (including the data of their respective customers, employees, suppliers, vendors and any third party data maintained by or on behalf of them), equipment or technology (collectively, “IT Systems and Data”) and (y) the Company has

not been notified of, and has no knowledge of any event or condition that would reasonably be expected to result in, any material security breach or other compromise to their IT Systems and Data; (ii) the Company is presently in material compliance with all applicable laws or statutes and all judgments, orders, rules and regulations of any court or arbitrator or governmental or regulatory authority, internal policies and contractual obligations relating to the privacy and security of IT Systems and Data and to the protection of such IT Systems and Data from unauthorized use, access, misappropriation or modification, except as would not, in the case of this clause (ii), individually or in the aggregate, have a Material Adverse Effect; and (iii) the Company has implemented backup and disaster recovery technology consistent with industry standards and practices.

vv. FINRA Exemption. To enable the Agent to rely on Rule 5110(b)(7)(C)(i) of FINRA, the Company represents that the Company (i) has a non-affiliate, public common equity float of at least \$150 million or a non-affiliate, public common equity float of at least \$100 million and annual trading volume of at least three million shares and (ii) has been subject to the Exchange Act reporting requirements for a period of at least 36 months.

Any certificate signed by an officer of the Company and delivered to the Agent or to counsel for the Agent pursuant to or in connection with this Agreement shall be deemed to be a representation and warranty by the Company, as applicable, to the Agent as to the matters set forth therein.

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) (the "Prospectus Delivery Period") (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 or amendments not related to any Placement, has been filed with the Commission and/or has become effective or any subsequent supplement to the Prospectus has been filed (other than any supplement not related to any Placement) and of any request by the Commission for any amendment or supplement to the Registration Statement or Prospectus related to the Placement or for additional information related to the Placement, (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, upon the advice of the Company's legal counsel, 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 to the Registration Statement or Prospectus relating to the Placement Shares or a security convertible into the Placement Shares (other than an Incorporated Document) 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 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 and (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 the filing does not name the Agent or does not relate to the transaction herein provided; and provided, further, that the only remedy the Agent shall have with respect to the failure by the Company to obtain such consent 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).

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, or of the initiation or threatening of any proceeding for any such purpose; and it will 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 the Prospectus Delivery Period, the Company will use commercially reasonable efforts to comply with all requirements imposed upon it by the Securities Act, as from time to time in force, and to file on or before their respective due dates 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 430A 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 430A and to notify the Agent promptly of all such filings. If during the Prospectus Delivery 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 Prospectus Delivery 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 the filing of any amendment or supplement, if in the judgment of the Company, it is in the best interest of the Company to do so.

d. Listing of Placement Shares. During the Prospectus Delivery Period, the Company will use its commercially reasonable efforts to cause the Placement Shares to be listed on the Exchange and to qualify the Placement Shares for sale under the securities laws of such jurisdictions in the United States as the Agent reasonably designates and to continue such qualifications in effect so long as required for the distribution of the Placement Shares; *provided, however*, that the Company shall not be required in connection therewith to qualify as a foreign corporation or dealer in securities, file a general consent to service of process, or subject itself to taxation in any jurisdiction if it is not otherwise so subject.

e. Delivery of Registration Statement and Prospectus. The Company will furnish to the Agent and its counsel (at the reasonable 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 the Prospectus Delivery Period (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. 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 date on which any Placement Notice is delivered to the Agent hereunder and ending on the third (3rd) Trading Day immediately following 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); and, during such period, will not directly or indirectly in any other "at the market" or continuous equity transaction 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 prior to the termination of this Agreement; *provided, however*, that such restrictions will not apply in connection with the Company's issuance or sale of (i) Common Stock, options to purchase Common Stock or Common Stock issuable upon the exercise, vesting or settlement of equity awards issued pursuant to any equity compensation 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; (ii) Common Stock issuable upon conversion of securities or the exercise, vesting or settlement of warrants, options or other rights in effect or outstanding, and disclosed in filings by the Company available on EDGAR or otherwise in writing to the Agent, (iii) Common Stock, or securities convertible into or exercisable for Common Stock, offered and sold in a privately negotiated transaction to vendors, customers, strategic partners or potential strategic partners or other investors conducted in a manner so as not to be integrated with the offering of Common Stock hereby; (iv) Common Stock offered and sold in connection with any acquisition, strategic investment or other similar transaction (including any joint venture, strategic alliance or partnership); and (v) Common Stock offered and sold in connection with any employee stock purchase plan of the Company whether now in effect or hereafter implemented.

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 or such other location mutually agreed upon by the parties hereto, as the Agent may reasonably request.

k. Required Filings Relating to Placement of Placement Shares. 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 (each and every date a filing under Rule 424(b) is made, a "Filing Date"), 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, 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. Each time during the term of this Agreement that the Company:

(i) 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 audited 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 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) 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, in the form attached hereto as Exhibit 7(1). The requirement to provide a certificate under this Section 7(1) shall be waived for any Representation Date occurring at a time at which no Placement Notice is pending, which waiver shall continue until the earlier to occur of the date the Company delivers a Placement Notice hereunder (which for such calendar quarter shall be considered a Representation Date) and the next occurring Representation Date on which the Company files its annual report on Form 10-K. Notwithstanding the foregoing, (i) upon the delivery of the first Placement Notice hereunder and (ii) 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(1), then before the Agent sells any Placement Shares, the Company shall provide the Agent with a certificate, in the form attached hereto as Exhibit 7(1), dated the date of the Placement Notice.

m. Legal Opinion. On or prior to the date of the first Placement Notice given hereunder the Company shall cause to be furnished to the Agent a written opinion and a negative assurance letter of K&L Gates LLP (“Company Counsel”), or other counsel reasonably satisfactory to the Agent, each in form and substance reasonably satisfactory to the Agent. Thereafter, within five (5) Trading Days of each Representation Date with respect to which the Company is obligated to deliver a certificate in the form attached hereto as Exhibit 7(1) for which no waiver is applicable, the Company shall cause to be furnished to the Agent a negative assurance letter of Company Counsel in form and substance reasonably satisfactory to the Agent; provided that, in lieu of such negative assurance for subsequent periodic filings under the Exchange Act, counsel may furnish the Agent with a letter (a “Reliance Letter”) to the effect that the Agent may rely on the negative assurance letter previously 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 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. On or prior to the date of the first Placement Notice given hereunder and within five (5) Trading Days after each subsequent Representation Date, other than pursuant to Section 7(l)(iii), the Company shall cause its independent accountants to furnish the Agent letters (the “Comfort Letters”), dated the date the Comfort Letter is delivered, which shall meet the requirements set forth in this Section 7(n). The Comfort Letter from the Company’s independent accountants shall be in a form and substance reasonably satisfactory to the Agent, (i) confirming that they are an independent public accounting firm within the meaning of the Securities Act and the Public Company Accounting Oversight Board (the “PCAOB”), (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 Letter”) and (iii) updating the Initial Comfort Letter with any information that would have been included in the Initial Comfort Letter had it 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 letter.

o. Market Activities. The Company will not, directly or indirectly, (i) take any action designed to cause or result in, or that constitutes or would 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 the Subsidiaries will be or become, at any time prior to the termination of this Agreement, 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 pursuant to Section 23, neither of 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), required to be filed with the Commission, that constitutes an offer to sell or solicitation of an offer to buy Placement Shares hereunder.

r. Sarbanes-Oxley Act. The Company will maintain and keep accurate books and records reflecting its 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) 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 will maintain disclosure controls and procedures that comply with the requirements of the Exchange Act.

8. Representations and Covenants of the Agent. The Agent represents and warrants that it is duly registered as a broker-dealer under FINRA, the Exchange Act and the applicable statutes and regulations of each state in which the Placement Shares will be offered and sold, except such states in which the Agent is exempt from registration or such registration is not otherwise required. The Agent shall continue, for the term of this Agreement, to be duly registered as a broker-dealer under FINRA, the Exchange Act and the applicable statutes and regulations of each state in which the Placement Shares will be offered and sold, except such states in which it is exempt from registration or such registration is not otherwise required, during the term of this Agreement. The Agent shall comply with all applicable law and regulations in connection with the transactions contemplated by this Agreement, including the issuance and sale through the Agent of the Placement Shares.

9. Payment of Expenses. The Company will pay all expenses incident to the performance of its obligations under this Agreement, including (i) the preparation, filing, including any fees required by the Commission, and printing of the Registration Statement (including financial statements and exhibits) as originally filed and of each amendment and supplement thereto and each Free Writing Prospectus, in such number as the Agent shall deem reasonably 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 capital duties, stamp duties or other 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 disbursements of counsel to the Agent incurred in connection with (a) entering into the transactions contemplated by this Agreement in an amount not to exceed \$50,000 in the aggregate, and (b) ongoing diligence arising from the transactions contemplated by this Agreement in an amount not to exceed \$2,500 in the aggregate per calendar quarter; (vi) the fees and expenses of the transfer agent and registrar for the Common Stock, (vii) the filing fees incident to any review by FINRA of the terms of the sale of the Placement Shares, and (viii) the fees and expenses incurred in connection with the listing of the Placement Shares on the Exchange.

10. 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 in all material respects 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 reasonable satisfaction (or waiver by the Agent in its sole discretion) of the following additional conditions:

a. Registration Statement Effective. The Registration Statement shall remain effective and shall be available for 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; (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 receipt by the Company of notification of 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 receipt by the Company of notification of the initiation of, or a threat to initiate, any proceeding for such purpose; or (iv) the occurrence of any event that makes any material statement made in the Registration Statement or the Prospectus or any material Incorporated Document untrue in any material respect or that requires the making of any changes in the Registration Statement, the Prospectus or any material Incorporated Document 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 or any material Incorporated Document, 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, in the light of the circumstances under which they were made, not misleading.

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 Effect, or any development that would 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 "nationally recognized statistical rating organization," as such term is defined by the Commission for purposes of Rule 436(g)(2) under the Securities Act (a "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. Company Counsel Legal Opinion. The Agent shall have received the opinion and negative assurance letter of Company Counsel required to be delivered pursuant to Section 7(m) on or before the date on which such delivery of such opinion and negative assurance letter are required pursuant to Section 7(m).

f. Agent Counsel Legal Opinion. The Agent shall have received from Duane Morris LLP, counsel for the Agent, such opinion or opinions, on or before the date on which the delivery of the Company Counsel legal opinion is required pursuant to Section 7(m), with respect to such matters as the Agent may reasonably require, and the Company shall have furnished to such counsel such documents as they request for enabling them to pass upon such matters.

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

h. Representation Certificate. The Agent shall have received the certificate required to be delivered pursuant to Section 7(1) on or before the date on which delivery of such certificate is required pursuant to Section 7(1).

i. Secretary's Certificate. On or prior to the first Representation Date, the Agent shall have received a certificate, signed on behalf of the Company by its corporate Secretary, in form and substance satisfactory to the Agent and its counsel.

j. No Suspension. Trading in the Common Stock shall not have been suspended on the Exchange and the Common Stock shall not have been delisted from the Exchange.

k. Other Materials. On each date on which the Company is required to deliver a certificate pursuant to Section 7(1), the Company shall have furnished to the Agent such appropriate further information, certificates and documents as the Agent may reasonably request and which are usually and customarily furnished by an issuer of securities in connection with a securities offering of the type contemplated hereby. All such opinions, certificates, letters and other documents will be in compliance with the provisions hereof.

l. Securities Act Filings Made. All filings with the Commission required by Rule 424 under the Securities Act 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.

m. Approval for Listing. The Placement Shares shall either have been approved for listing on the Exchange, subject only to notice of issuance, or the Company shall have filed an application for listing of the Placement Shares on the Exchange at, or prior to, the issuance of any Placement Notice.

n. No Termination Event. There shall not have occurred any event that would permit the Agent to terminate this Agreement pursuant to Section 13(a).

## 11. Indemnification and Contribution.

(a) Company Indemnification. The Company agrees to indemnify and hold harmless the Agent, its 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 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 agency or body, 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 (subject to Section 11(d) below) 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 out-of-pocket fees and disbursements of counsel), reasonably incurred in investigating, preparing or defending against any litigation, or any investigation or proceeding by any governmental agency or body, commenced or threatened, or any claim whatsoever based upon any such untrue statement or omission, or any such alleged untrue statement or omission, 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 written information furnished to the Company by the Agent expressly for use in the Registration Statement (or any amendment thereto), or in any related Issuer Free Writing Prospectus or the Prospectus (or any amendment or supplement thereto).

(b) Indemnification by the Agent. The Agent agrees to indemnify and hold harmless the Company and its directors and officers, 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 11(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) or in any related Issuer Free Writing Prospectus or the 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.

(c) Procedure. Any party that proposes to assert the right to be indemnified under this Section 11 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 11, 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 11 and (ii) any liability that it may have to any indemnified party under the foregoing provisions of this Section 11 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, 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 legal or other 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 of interest 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 within a reasonable time after receiving notice of the commencement of the action, in each of which cases the reasonable and documented out-of-pocket 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 out-of-pocket fees, disbursements and other charges of more than one separate firm admitted to practice in such jurisdiction at any one time for all such indemnified party or parties. All such reasonable and documented out-of-pocket fees, disbursements and other charges will be reimbursed by the indemnifying party promptly after the indemnifying party receives a written invoice relating to fees, disbursements and other charges in reasonable detail. 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 11 (whether or not any indemnified party is a party thereto), unless such settlement, compromise or consent (1) includes an unconditional release of each 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) 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 11 is applicable in accordance with its terms but for any reason is held to be unavailable 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, but after deducting any contribution received by the Company from persons other than the Agent, such as persons who control the Company within the meaning of the Securities Act or the Exchange Act, officers of the Company who signed the Registration Statement and directors of the Company, who also may be liable for contribution) 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 (before deducting expenses) 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 11(d) 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 11(d) shall be deemed to include, for the purpose of this Section 11(d), 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 11(c) hereof. Notwithstanding the foregoing provisions of this Section 11(d), 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 11(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 11(d), any person who controls a party to this Agreement within the meaning of the Securities Act or the Exchange Act, and any officers, directors, partners, employees or agents of the Agent, will have the same rights to contribution as that party, and each officer who signed the Registration Statement and director of the Company 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 11(d), 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 11(d) 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 11(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 11(c) hereof.

12. Representations and Agreements to Survive Delivery. The indemnity and contribution agreements contained in Section 11 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 or controlling persons), (ii) delivery and acceptance of the Placement Shares and payment therefor or (iii) any termination of this Agreement.

13. 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 development that would have a Material Adverse Effect that, in the sole judgment of the Agent, is material and adverse and makes 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 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 Exchange, or if trading generally on the Exchange has been suspended or limited, or minimum prices for trading have been fixed on the Exchange, (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, (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 9 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) hereof shall remain in full force and effect notwithstanding such termination. If the Agent elects to terminate this Agreement as provided in this Section 13(a), the Agent shall provide the required notice as specified in Section 14 (Notices).

b. The Company shall have the right, by giving five (5) days' 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 9 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) hereof shall remain in full force and effect notwithstanding such termination.

c. The Agent shall have the right, by giving five (5) days' 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 9 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) hereof shall remain in full force and effect notwithstanding such termination.

d. Unless earlier terminated pursuant to this Section 13, this Agreement shall automatically terminate upon the issuance and sale of all of the Placement Shares through the Agent on the terms and subject to the conditions set forth herein except that the provisions of Section 9 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) hereof shall remain in full force and effect notwithstanding such termination.

e. This Agreement shall remain in full force and effect unless terminated pursuant to Sections 13(a), (b), (c), or (d) 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 9 (Payment of Expenses), Section 11 (Indemnification and Contribution), Section 12 (Representations and Agreements to Survive Delivery), Section 18 (Governing Law and Time; Waiver of Jury Trial) and Section 19 (Consent to Jurisdiction) shall remain in full force and effect. Upon termination of this Agreement, the Company shall not have any liability to the Agent for any discount, commission or other compensation with respect to any Placement Shares not otherwise sold by the Agent under this Agreement.

f. 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.

14. 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:

B. Riley FBR, Inc.  
299 Park Avenue, 21st Floor  
New York, NY 10171  
Attention: General Counsel  
Telephone: (212) 457-9947  
Email: atmdesk@brileyfbr.com

with a copy to:

Duane Morris LLP  
1540 Broadway  
New York, NY 10036  
Attention: James T. Seery  
Telephone: (973) 424-2088  
Email: jtseery@duanemorris.com

and if to the Company, shall be delivered to:

Koppers Holdings Inc.  
436 Seventh Avenue  
Pittsburgh, PA 15219  
Attention: Stephanie L. Apostolou  
Telephone: (412) 227-2187  
Email: ApostolouSL@koppers.com

with a copy to:

K&L Gates LLP  
K&L Gates Center  
210 Sixth Avenue  
Pittsburgh, PA 15222  
Attention: Jeffrey W. Acre  
Telephone: (412) 355-6506  
Email: jeffrey.acre@klgates.com

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, by email, or by verifiable facsimile transmission 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) on the next Business Day after timely delivery to a nationally-recognized overnight courier and (iii) 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 Exchange and commercial banks in the City of New York are open for business.

15. 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 affiliates, controlling persons, officers and directors referred to in Section 11 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 the Company nor the Agent may assign its rights or obligations under this Agreement without the prior written consent of the other party.

16. 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 share consolidation, stock split, stock dividend, corporate domestication or similar event effected with respect to the Placement Shares.

17. Entire Agreement; Amendment; Severability. 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.

18. 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. THE COMPANY AND THE AGENT EACH 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.

19. CONSENT TO JURISDICTION. EACH PARTY HEREBY IRREVOCABLY SUBMITS TO THE NON-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.

20. Use of Information. The Agent may not use any information gained in connection with this Agreement and the transactions contemplated by this Agreement, including due diligence, to advise any party with respect to transactions not expressly approved by the Company.

21. 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 facsimile transmission or email of a .pdf attachment.

22. Effect of Headings. The section, Schedule and Exhibit headings herein are for convenience only and shall not affect the construction hereof.

23. Permitted Free Writing Prospectuses. The Company represents, warrants and agrees that, unless it obtains the prior consent of the Agent, and the Agent represents, warrants and agrees that, unless it obtains the prior consent of the Company, it has not made and will not make any offer relating to the 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 23 hereto are Permitted Free Writing Prospectuses.

24. 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. the Agent has not 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 has 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 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 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, other than in respect of the Agent's obligations under this Agreement and to keep information provided by the Company to the Agent and its counsel confidential to the extent not otherwise publicly-available.

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

“Applicable Time” means (i) each Representation Date and (ii) the time of each sale of any Placement Shares pursuant to this Agreement.

“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.

“Rule 172,” “Rule 405,” “Rule 415,” “Rule 424,” “Rule 424(b),” “Rule 430B,” and “Rule 433” refer to such rules under the Securities Act.

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.

[Remainder of the page intentionally left blank]

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,

**KOPPERS HOLDINGS INC.**

By: /s/ Michael J. Zugay

Name: Michael J. Zugay

Title: Chief Financial Officer

**ACCEPTED as of the date first-above written:**

**B. RILEY FBR, INC.**

By: /s/ Patrice McNicoll

Name: Patrice McNicoll

Title: Co-Head of Investment Banking

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FORM OF PLACEMENT NOTICE

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From: Koppers Holdings Inc.  
To: B. Riley FBR, Inc.  
Attention: [•]  
Subject: At Market Issuance—Placement Notice

Ladies and Gentlemen:

Pursuant to the terms and subject to the conditions contained in the At Market Issuance Sales Agreement between Koppers Holdings Inc., a Pennsylvania corporation (the "Company"), and B. Riley FBR, Inc. (the "Agent"), dated February 27, 2020, the Company hereby requests that the Agent sell up to [\_\_\_\_] of the Company's Common Stock, par value \$0.01 per share, at a minimum market price of \$ \_\_\_\_\_ per share, during the time period beginning [month, day, time] and ending [month, day, time].



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**Compensation**

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The Company shall pay to the Agent in cash, upon each sale of Placement Shares pursuant to this Agreement, an amount equal to 2.0% of the gross proceeds from each sale of Placement Shares.

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**Notice Parties**

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[omitted]

**EXHIBIT 7(1)**

**Form of Representation Date Certificate**

\_\_\_\_\_, 20\_\_

This Representation Date Certificate (this "Certificate") is executed and delivered in connection with Section 7(1) of the At Market Issuance Sales Agreement (the "Agreement"), dated February 27, 2020, and entered into between Koppers Holdings Inc. (the "Company") and B. Riley FBR, Inc. All capitalized terms used but not defined herein shall have the meanings given to such terms in the Agreement.

The Company hereby certifies as follows:

1. As of the date of this Certificate (i) the Registration Statement does not contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein not misleading and (ii) neither the Registration Statement nor the Prospectus contain any untrue statement of a material fact or omit to state a material fact required to be stated therein or necessary in order to make the statements therein, in light of the circumstances under which they were made, not misleading and (iii) no event has occurred as a result of which it is necessary to amend or supplement the Prospectus in order to make the statements therein not untrue or misleading for this paragraph 1 to be true.

2. Each of the representations and warranties of the Company contained in the Agreement were, when originally made, and are, as of the date of this Certificate, true and correct in all material respects.

3. Except as waived by the Agent in writing, each of the covenants required to be performed by the Company in the Agreement on or prior to the date of the Agreement, this Representation Date, and each such other date prior to the date hereof as set forth in the Agreement, has been duly, timely and fully performed in all material respects and each condition required to be complied with by the Company on or prior to the date of the Agreement, this Representation Date, and each such other date prior to the date hereof as set forth in the Agreement has been duly, timely and fully complied with in all material respects.

4. Subsequent to the date of the most recent financial statements in the Prospectus, and except as described in the Prospectus, including Incorporated Documents, there has been no Material Adverse Effect.

5. No stop order suspending the effectiveness of the Registration Statement or of any part thereof has been issued, and no proceedings for that purpose have been instituted or are pending or threatened by any securities or other governmental authority (including, without limitation, the Commission).

6. No order suspending the effectiveness of the Registration Statement or the qualification or registration of the Placement Shares under the securities or Blue Sky laws of any jurisdiction are in effect and no proceeding for such purpose is pending before, or threatened, to the Company's knowledge or in writing by, any securities or other governmental authority (including, without limitation, the Commission).

The undersigned has executed this Representation Date Certificate as of the date first written above.

**KOPPERS HOLDINGS INC.**

By: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

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**EXHIBIT 23**

**Permitted Issuer Free Writing Prospectuses**

None.

The logo for K&L GATES, featuring the company name in white, uppercase letters on a dark blue rectangular background.

February 27, 2020

Koppers Holdings Inc.  
436 Seventh Avenue  
Pittsburgh, Pennsylvania 15219

Re: At the Market Offering

Ladies and Gentlemen:

We have acted as transaction counsel to Koppers Holdings Inc., a Pennsylvania corporation (the “Company”), in connection with the At Market Issuance Sales Agreement, dated as of February 27, 2020 (the “Sales Agreement”), by and between the Company and B. Riley FBR, Inc. (the “Agent”). Pursuant to the terms and subject to the conditions set forth in the Sales Agreement, the Company may issue and sell, from time to time, up to \$100,000,000 in aggregate market value of shares (the “Placement Shares”) of the Company’s common stock, par value \$0.01 per share (“Common Stock”), pursuant to the Sales Agreement. The Placement Shares are being offered on a delayed or continuous basis in an offering registered under the Securities Act of 1933, as amended (the “Securities Act”), pursuant to a Registration Statement on Form S-3 filed with the Securities and Exchange Commission (the “Commission”) on the date hereof under the Securities Act (the “Registration Statement”).

In connection with rendering the opinions set forth below, we have examined (i) the Registration Statement; (ii) the Prospectus, dated February 27, 2020, as supplemented by the accompanying Prospectus Supplement, dated February 27, 2020, relating to the offering of the Placement Shares by the Company pursuant to the Sales Agreement, as filed by the Company with the Commission on February 27, 2020 pursuant to Rule 424(b) under the Securities Act, including all material incorporated by reference therein (together, the “Prospectus”); (iii) the Sales Agreement; (iv) the Company’s Amended and Restated Articles of Incorporation, as amended (the “Articles of Incorporation”), and the Company’s Second Amended and Restated Bylaws (the “Bylaws”); and (v) copies of the resolutions adopted by the Board of Directors of the Company on February 12, 2020. In addition, we have made such examination of law as we have deemed appropriate.

For the purposes of this opinion letter, we have made the assumptions that are customary in opinion letters of this kind, including without limitation: (i) that each document submitted to us or reviewed by us is accurate and complete; (ii) that each such document that is an original is authentic and each such document that is a copy conforms to an authentic original; (iii) that all signatures on each such document are genuine; (iv) the legal capacity of all natural persons; (v) that the Sales Agreement constitutes a legal, valid and binding obligation of the Agent,

K&L GATES LLP  
K&L GATES CENTER 210 SIXTH AVENUE PITTSBURGH PA 15222-2613  
T +1 412 355 6500 F +1 412 355 6501 klgates.com

enforceable against the Agent in accordance with its terms; (vi) there are no documents or agreements by or among any of the parties to the Sales Agreement, other than those referenced in this opinion letter, that could affect any of the opinions expressed herein and no undisclosed modifications, waivers or amendments (whether written or oral) to any of the documents reviewed by us in connection with this opinion letter; (vii) that the Agent has complied with all state and federal statutes, rules and regulations applicable to it relating to the transactions set forth in the Sales Agreement; (viii) that the Company will have sufficient authorized and unissued shares of Common Stock at the time of each issuance of a Placement Share pursuant to the Sales Agreement to provide for such issuance; and (ix) the issuance of each Placement Share will be duly noted in the Company's stock ledger upon its issuance. We have not verified any of the foregoing assumptions.

The opinions expressed in this opinion letter are limited to the law of the Commonwealth of Pennsylvania. We are not opining on, and we assume no responsibility for, the applicability to or effect on any of the matters covered herein of (i) any other laws; (ii) the laws of any other jurisdiction; or (iii) the law of any county, municipality or other political subdivision or local governmental agency or authority.

Based on the foregoing, and subject to the foregoing and the additional qualifications and other matters set forth below, it is our opinion that (i) the Placement Shares have been duly authorized by the Company for issuance and sale pursuant to the Sales Agreement and (ii) when issued and delivered to the Agent by the Company in accordance with the terms of the Sales Agreement against payment of the consideration provided for therein, the Placement Shares will be validly issued, fully paid and nonassessable.

The opinions set forth above are subject to the following additional assumptions:

(a) (i) The Registration Statement and any amendment thereto (including any post-effective amendment) will continue to be effective under the Securities Act at each time when a Placement Share is issued and sold, and such effectiveness will not have been terminated, suspended or rescinded, and (ii) the Prospectus will continue to accurately describe the Placement Shares at the time any Placement Share is issued and sold.

(b) All Placement Shares will be issued and sold (i) in compliance with all applicable federal and state securities laws, rules and regulations and solely in the manner provided in the Registration Statement and the Prospectus and (ii) only upon payment of the consideration fixed therefor in accordance with the terms and conditions of the Sales Agreement (including any amendment or supplement thereto), and there will not have occurred any change in law or fact affecting the validity of any of the opinions rendered herein with respect thereto;

(c) The Company will have taken any action required to be taken by the Company to authorize the offer and issuance of each Placement Share, and such authorization will remain in effect and unchanged at all times during which each Placement Share is offered and will not have been modified or rescinded (subject to the further assumption that the sale of any Placement Share takes place in accordance with such authorization). The Articles of Incorporation and the Bylaws will not be amended from the date hereof in a manner that would affect the validity of any of the opinions rendered herein. The authorization of the Board of Directors with respect to the issuance and sale of the Placement Shares pursuant to the Sales Agreement will have not been amended from the date hereof in a manner that would affect the validity of any of the opinions rendered herein, and such authorization will remain in effect and unchanged at all times during which the Placement Shares are offered.

The opinions set forth above are subject to the effects of (a) bankruptcy, insolvency, fraudulent conveyance, fraudulent transfer, reorganization, receivership, moratorium and other similar laws relating to or affecting the enforcement of creditors' rights or remedies generally; (b) general principles of equity, regardless of whether such principles are considered in a proceeding at law or in equity; and (c) an implied covenant of good faith, reasonableness, fair dealing and standards of materiality.

We assume no obligation to update or supplement any of our opinions to reflect any changes of law or fact that may occur.

We hereby consent to the filing of this opinion letter as an exhibit to the Company's Current Report on Form 8-K being filed on the date hereof and to the reference to this firm's name under the captions titled "Legal Matters" in the Prospectus. In giving our consent, we do not thereby admit that we are experts with respect to any part of the Registration Statement or the Prospectus or within the meaning of the term "expert", as used in Section 11 of the Securities Act or the rules and regulations promulgated thereunder, nor do we admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations thereunder.

Yours truly,

/s/ K&L Gates LLP



## FOURTH AMENDMENT TO CREDIT AGREEMENT

THIS FOURTH AMENDMENT TO CREDIT AGREEMENT (the "Amendment"), dated as of February 26, 2020 ("Fourth Amendment Closing Date") is made by and among KOPPERS INC., a Pennsylvania corporation (the "Borrower"), the GUARANTORS (as defined in the Credit Agreement (as hereinafter defined)), the LENDERS (as defined in the Credit Agreement), and PNC BANK, NATIONAL ASSOCIATION, as Administrative Agent for the Lenders (in such capacity, the "Administrative Agent").

## WITNESSETH:

WHEREAS, the Borrower, the Guarantors, the Lenders and the Administrative Agent are parties to that certain Credit Agreement dated as of February 17, 2017, as amended by a First Amendment to Credit Agreement dated as of February 26, 2018, as amended by a Second Amendment to Credit Agreement and Joinder dated as of April 10, 2018, and as amended by a Third Amendment to Credit Agreement, dated as of May 1, 2019 (as so amended, the "Credit Agreement"); and

WHEREAS, the Borrower has requested that the Lenders amend certain provisions of the Credit Agreement related to potential Equity Issuances (as defined in the Credit Agreement) as well as certain other changes, including, among other things, (i) amending the mandatory prepayment associated with such Equity Issuances and (ii) amending the financial covenants to remove the steps downs contained therein that are tied to Equity Issuances, and the Lenders are willing to effect such credit accommodations upon and subject to the terms and conditions of this Amendment.

NOW, THEREFORE, the parties hereto, in consideration of their mutual covenants and agreements hereinafter set forth and intending to be legally bound hereby, covenant and agree as follows:

1. Definitions. Except as set forth in this Amendment, defined terms used herein shall have the meanings given to them in the Credit Agreement.
2. Amendments to Section 1.1 [Certain Definitions]. Section 1.1 of the Credit Agreement is hereby amended as follows:
  - (a) The following definition is hereby deleted from Section 1.1 in its entirety:

"Euro-Rate Termination Date"

- (b) The following new definitions are hereby added to Section 1.1 in alphabetical order:

"BHC Act Affiliate of a party shall mean an "affiliate" (as such term is defined under, and interpreted in accordance with, 12 U.S.C. 1841(k)) of such party."

“Benchmark Replacement shall mean, with respect to any Optional Currency, the sum of: (a) the alternate benchmark rate that has been selected by the Administrative Agent and the Borrower for such Optional Currency giving due consideration to (i) any selection or recommendation of a replacement rate or the mechanism for determining such a rate by the Relevant Governmental Body with respect to such Optional Currency or (ii) any evolving or then-prevailing market convention for determining a rate of interest as a replacement to the Euro-Rate for (A) with respect to Dollar Loans under the Euro-Rate Option, U.S. dollar-denominated credit facilities or (B) with respect to Optional Currency Loans, U.S. credit facilities providing for loans in such Optional Currency and (b) the Benchmark Replacement Adjustment; provided that, if the Benchmark Replacement as so determined would be less than zero, the Benchmark Replacement will be deemed to be zero for the purposes of this Agreement.”

“Benchmark Replacement Adjustment shall mean, with respect to any replacement of the Euro- Rate for any Optional Currency with an alternate benchmark rate for each applicable Interest Period for such Optional Currency, the spread adjustment, or method for calculating or determining such spread adjustment, (which may be a positive or negative value or zero) that has been selected by the Administrative Agent and the Borrower (a) giving due consideration to (i) any selection or recommendation of a spread adjustment, or method for calculating or determining such spread adjustment, for the replacement of the Euro-Rate in such Optional Currency with the applicable Benchmark Replacement for such Optional Currency (excluding such spread adjustment) by the Relevant Governmental Body with respect to such Optional Currency or (ii) any evolving or then- prevailing market convention for determining a spread adjustment, or method for calculating or determining such spread adjustment, for such replacement of the Euro-Rate for (A) with respect to Dollar Loans under the Euro-Rate Option, U.S. dollar-denominated credit facilities at such time or (B) with respect to Optional Currency Loans, U.S. credit facilities providing for loans in such Optional Currency and (b) which may also reflect adjustments to account for (i) the effects of the transition from the Euro-Rate for such Optional Currency to the Benchmark Replacement for such Optional Currency and (ii) yield- or risk-based differences between the Euro-Rate and the Benchmark Replacement for such Optional Currency.”

“Benchmark Replacement Conforming Changes shall mean, with respect to any Benchmark Replacement for any Optional Currency, any technical, administrative or operational changes (including changes to the definition of “Base Rate,” the definition of “Interest Period,” timing and frequency of determining rates and making payments of interest and other administrative matters) that the Administrative Agent decides may be appropriate to reflect the adoption and implementation of such Benchmark Replacement for such Optional Currency and to permit the administration thereof by the Administrative Agent in a manner substantially consistent with market practice in the United States (or, if the Administrative Agent decides that adoption of any portion of such market practice is not administratively feasible or if the Administrative Agent determines that no market practice for the administration of the Benchmark Replacement exists, in such other manner of administration as the Administrative Agent decides is reasonably necessary in connection with the administration of this Agreement).”

“Benchmark Replacement Date” shall mean the earlier to occur of the following events with respect to the Euro-Rate for any Optional Currency:

- (1) in the case of clause (1) or (2) of the definition of “Benchmark Transition Event,” the later of (a) the date of the public statement or publication of information referenced therein and (b) the date on which the administrator of the Euro-Rate for such Optional Currency permanently or indefinitely ceases to provide the Euro-Rate for such Optional Currency; or
- (2) in the case of clause (3) of the definition of “Benchmark Transition Event,” the date of the public statement or publication of information referenced therein.”

“Benchmark Transition Event” shall mean the occurrence of one or more of the following events with respect to the Euro-Rate for any Optional Currency:

(1) a public statement or publication of information by or on behalf of the administrator of the Euro-Rate for such Optional Currency announcing that such administrator has ceased or will cease to provide the Euro-Rate for such Optional Currency, permanently or indefinitely, provided that, at the time of such statement or publication, there is no successor administrator that will continue to provide the Euro-Rate for such Optional Currency;

(2) a public statement or publication of information by an Official Body having jurisdiction over the Administrative Agent, the regulatory supervisor for the administrator of the Euro-Rate for such Optional Currency, the U.S. Federal Reserve System, an insolvency official with jurisdiction over the administrator for the Euro-Rate for such Optional Currency, a resolution authority with jurisdiction over the administrator for the Euro-Rate for such Optional Currency, which states that the administrator of the Euro-Rate for such Optional Currency has ceased or will cease to provide the Euro-Rate for such Optional Currency permanently or indefinitely, provided that, at the time of such statement or publication, there is no successor administrator that will continue to provide the Euro-Rate for such Optional Currency; or

(3) a public statement or publication of information by the regulatory supervisor for the administrator of the Euro-Rate for such Optional Currency or an Official Body having jurisdiction over the Administrative Agent announcing that the Euro-Rate for such Optional Currency is no longer representative.”

“Benchmark Unavailability Period” shall mean, with respect to any Optional Currency, if a Benchmark Transition Event and its related Benchmark Replacement Date have occurred with respect to the Euro-Rate for such Optional Currency and solely to the extent that the Euro-Rate for such Optional Currency has not been replaced with a Benchmark Replacement, the period (x) beginning at the time that such Benchmark Replacement Date for such Optional Currency has occurred if, at such time, no Benchmark Replacement for such Optional Currency has replaced the Euro-Rate for such Optional Currency for all purposes hereunder in accordance with Section 4.4.2 and (y) ending at the time that a Benchmark Replacement for such available currency has replaced the Euro-Rate for such Optional Currency for all purposes hereunder pursuant to Section 4.4.2.”

“Covered Entity shall mean 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).”

“Covered Party shall have the meaning specified in Section 11.17 [Acknowledgement Regarding Any Supported QFCs].”

“Default Right shall have 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.”

“Early Opt-in Event shall mean a determination by the Administrative Agent that (a) with respect to Dollar Loans under the Euro-Rate Option, U.S. dollar-denominated credit facilities being executed at such time, or that include language similar to that contained in this Section 4.4.2, are being executed or amended, as applicable, to incorporate or adopt a new benchmark interest rate to replace the Euro-Rate for loans in Dollars or (b) with respect to Optional Currency Loans, U.S. credit facilities providing for loans in such Optional Currency being executed at such time, or that include language similar to that contained in Section 4.4.2, are being executed or amended, as applicable, to incorporate or adopt a new benchmark interest rate to replace the Euro-Rate for loans in such Optional Currency.”

“QFC shall have the meaning assigned to the term “qualified financial contract” in, and shall be interpreted in accordance with, 12 U.S.C. 5390(c)(8)(D).”

“QFC Credit Support” shall have the meaning specified in Section 11.17 [Acknowledgement Regarding Any Supported QFCs].”

“Relevant Governmental Body shall mean (a) the Federal Reserve Board and/or the Federal Reserve Bank of New York, or a committee officially endorsed or convened by the Federal Reserve Board and/or the Federal Reserve Bank of New York or any successor thereto and (b) with respect to Optional Currency Loans, in addition to the Persons named in clause (a) of this definition, the comparable Official Body or other applicable Person for loans in such Optional Currency as determined by the Administrative Agent in its sole discretion.”

“Supported QFC shall have the meaning specified in Section 11.17 [Acknowledgement Regarding Any Supported QFCs].”

“U.S. Special Resolution Regimes shall have the meaning specified in Section 11.17 [Acknowledgement Regarding Any Supported QFCs].”

3. New Section 1.6 [Euro-Rate Notification]. The following new Section 1.6 is hereby added to the Credit Agreement to immediately follow Section 1.5:

“1.6 Euro-Rate Notification. Section 4.4.2 [Successor Euro-Rate Index] of this Agreements provides a mechanism for determining an alternative rate of interest in the event that one or more Relevant Interbank Market offered rates is no longer available or in certain other circumstances. The Administrative Agent does not warrant or accept any responsibility for and shall not have any liability with respect to, the administration, submission or any other matter related to any Relevant Interbank Market offered rate or other rates in the definition of “Euro-Rate” or with respect to any alternative or successor rate thereto, or replacement rate therefor.”

4. Amendment to Section 4.4.2 [Successor Euro-Rate Index]. The provisions of Section 4.4.2 of the Credit Agreement are hereby deleted and replaced in their entirety, as follows:

“(i) Benchmark Replacement. Notwithstanding anything to the contrary herein or in any other Loan Document, if the Administrative Agent determines that a Benchmark Transition Event or an Early Opt-in Event has occurred with respect to the Euro-Rate for any Optional Currency, the Administrative Agent and the Borrower may amend this Agreement to replace the Euro-Rate for such Optional Currency with a Benchmark Replacement for such Optional Currency; and any such amendment will become effective at 5:00 p.m. New York City time on the fifth (5th) Business Day after the Administrative Agent has provided such proposed amendment to all Lenders, so long as the Administrative Agent has not received, by such time, written notice of objection to such amendment from Lenders comprising the Required Lenders. Until the Benchmark Replacement with respect to the Euro-Rate for any Optional Currency is effective, each advance, conversion and renewal of a Loan in such Optional Currency under the Euro-Rate Option will continue to bear interest with reference to the Euro-Rate for such Optional Currency; provided however, during a Benchmark Unavailability Period with respect to any Optional Currency (i) any pending selection of, conversion to or renewal of a Loan in such Optional Currency bearing interest under the Euro-Rate Option that has not yet gone into effect shall be deemed to be a selection of, conversion to or renewal of the Base Rate Option with respect to such Loan in the Dollar Equivalent amount of such Loan, (ii) all outstanding Loans in such Optional Currency bearing interest under the Euro-Rate Option shall automatically be (A) if in Dollars, converted to the Base Rate Option at the expiration of the existing Interest Period (or sooner, if Administrative Agent cannot continue to lawfully maintain such affected Loan under the Euro-Rate Option) (B) if in an Optional Currency, converted to a Loan in Dollars under the Base Rate Option in the Dollar Equivalent amount of such Loan at the expiration of the existing Interest Period (or sooner, if the Administrative Agent cannot continue to lawfully maintain such affected Loan under the Euro-Rate Option in such Optional Currency) and (iii) the component of the Base Rate based upon the Euro-Rate will not be used in any determination of the Base Rate.

(ii) Benchmark Replacement Conforming Changes. In connection with the implementation of a Benchmark Replacement, the Administrative Agent will have the right to make Benchmark Replacement Conforming Changes from time to time and, notwithstanding anything to the contrary herein or in any other Loan Document, any amendments implementing such Benchmark Replacement Conforming Changes will become effective without any further action or consent of any other party to this Agreement.

(iii) Notices; Standards for Decisions and Determinations. The Administrative Agent will promptly notify the Borrower and the Lenders of (i) the implementation of any Benchmark Replacement, (ii) the effectiveness of any Benchmark Replacement Conforming Changes and (iii) the commencement of any Benchmark Unavailability Period. Any determination, decision or

election that may be made by the Administrative Agent or the Lenders pursuant to this Section including any determination with respect to a tenor, rate or adjustment or of the occurrence or non-occurrence of an event, circumstance or date and any decision to take or refrain from taking any action, will be conclusive and binding absent manifest error and may be made in its or their sole discretion and without consent from any other party hereto, except, in each case, as expressly required pursuant to this Section.”

5. Amendment to Section 5.8.3 [Equity Issuance]. Section 5.8.3 of the Credit Agreement is hereby amended and restated as follows:

“5.8.3 Equity Issuance. The Borrower shall be required to apply one hundred percent (100%) of Net Cash Proceeds from each Equity Issuance or series of Equity Issuances to prepay (subject to Borrower’s indemnity obligations under Sections 5.9 [Increased Costs] and 5.11 [Indemnity]) the Term Loans until such time as the outstanding balance of the Term Loans is less than an amount equal to \$50,000,000, any such prepayment to be effected within five (5) Business Days following the receipt of the proceeds of each such Equity Issuance.”

6. Amendment to Section 8.2.1(vi) [Indebtedness]. Section 8.2.1(vi) of the Credit Agreement is hereby amended and restated as follows:

“(vi) Any (a) Lender-Provided Hedge or (b) other Interest Rate Hedge approved by the Administrative Agent;”

7. Amendment to Section 8.2.7(iv) [Disposition of Assets or Subsidiaries]. Section 8.2.7(iv) of the Credit Agreement is hereby amended and restated as follows:

“(iv) subject to the provisions of Section 8.2.9, (x) any transfer of the ownership interests in a wholly owned Subsidiary of the Borrower which is not a Loan Party to another wholly owned Subsidiary of the Borrower, (y) any transfer of assets of a Foreign Subsidiary to another Subsidiary of the Borrower and (z) any transfer of liabilities of a Foreign Subsidiary to another Foreign Subsidiary;”

8. Amendment to Section 8.2.16 [Maximum Total Secured Leverage Ratio]. Section 8.2.16 of the Credit Agreement is hereby amended and restated as follows:

“8.2.16 Maximum Total Secured Leverage Ratio. The Loan Parties shall not permit the Total Secured Leverage Ratio, calculated as of the end of each fiscal quarter for the four fiscal quarters then ended, to exceed 3.00 to 1.00, with a step down to 2.75 to 1.00 on December 31, 2020; provided, that if (i) the maximum Total Secured Leverage Ratio required pursuant to this Section 8.2.16 as of such date is not more than 2.75 to 1.00 and (ii) Undrawn Availability is at least \$50,000,000, then the Borrower may elect, with prior written notice to the Administrative Agent, to increase the applicable maximum Total Secured Leverage Ratio to 3.00 to 1.00 during the period of four (4) consecutive fiscal quarters immediately following the consummation of a Material Acquisition (commencing with the fiscal quarter in which such Material Acquisition occurs) (a “Material Acquisition Period”); provided further, that (a) immediately after the end of a Material Acquisition Period, the Total Secured Leverage Ratio shall automatically revert to 2.75 to 1.00 and (b) there shall be not more than one (1) Material Acquisition Period during the term of this Agreement.”

9. Amendment to Section 8.2.17 [Maximum Total Leverage Ratio]. Section 8.2.17 of the Credit Agreement is hereby amended and restated as follows:

“8.2.17 Maximum Total Leverage Ratio. The Loan Parties shall not permit the Total Leverage Ratio, calculated as of the end of each fiscal quarter for the four fiscal quarters then ended, to exceed 5.25 to 1.00, with step downs to (i) 5.00 to 1.00 on December 31, 2020, and (ii) 4.75 to 1.00 on December 31, 2021.”

10. New Section 11.17 [Acknowledgement Regarding Any Supported QFCs]. The following new Section 11.17 is hereby added to the Credit Agreement to immediately follow Section 11.16:

“11.17 Acknowledgement Regarding Any Supported QFCs. To the extent that the Loan Documents provide support, through a guarantee or otherwise, for a Lender-Provided Hedge or other Interest Rate Hedge or any other agreement or instrument that is a QFC (such support, “QFC Credit Support” and each such QFC a “Supported QFC”), the parties acknowledge and agree as follows with respect to the resolution power of the Federal Deposit Insurance Corporation under the Federal Deposit Insurance Act and Title II of the Dodd-Frank Wall Street Reform and Consumer Protection Act (together with the regulations promulgated thereunder, the “U.S. Special Resolution Regimes”) in respect of such Supported QFC and QFC Credit Support (with the provisions below applicable notwithstanding that the Loan Documents and any Supported QFC may in fact be stated to be governed by the laws of the State of New York and/or of the United States or any other state of the United States):

In the event a Covered Entity that is party to a Supported QFC (each, a “Covered Party”) becomes subject to a proceeding under a U.S. Special Resolution Regime, the transfer of such Supported QFC and the benefit of such QFC Credit Support (and any interest and obligation in or under such Supported QFC and such QFC Credit Support, and any rights in property securing such Supported QFC or such QFC Credit Support) from such Covered Party will be effective to the same extent as the transfer would be effective under the U.S. Special Resolution Regime if the Supported QFC and such QFC Credit Support (and any such interest, obligation and rights in property) were governed by the laws of the United States or a state of the United States. In the event a Covered Party or a BHC Act Affiliate of a Covered Party becomes subject to a proceeding under a U.S. Special Resolution Regime, Default Rights under the Loan Documents that might otherwise apply to such Supported QFC or any QFC Credit Support that may be exercised against such Covered Party are permitted to be exercised to no greater extent than such Default Rights could be exercised under the U.S. Special Resolution Regime if the Supported QFC and the Loan Documents were governed by the laws of the United States or a state of the United States. Without limitation of the foregoing, it is understood and agreed that rights and remedies of the parties with respect to a Defaulting Lender shall in no event affect the rights of any Covered Party with respect to a Supported QFC or any QFC Credit Support.”

11. Amendment to Exhibits. Exhibit 8.2.6 and Exhibit 8.3.3 of the Credit Agreement are hereby amended and restated in their entirety as set forth on, Exhibit 8.2.6 [Acquisition Compliance Certificate] and Exhibit 8.3.3 [Quarterly Compliance Certificate], attached hereto and made a part hereof.

12. Conditions Precedent. The Loan Parties and the Lenders acknowledge and agree that the amendments set forth herein shall only be effective upon the occurrence of all the following conditions precedent:

(a) Amendment. The Loan Parties, the Administrative Agent and the Required Lenders shall have executed and delivered this Amendment to the Administrative Agent.

(b) Fees. The Borrower shall have paid to the Administrative Agent all fees due and owing pursuant to the fee letter dated as of February 13, 2020 by and among the Borrower, the Administrative Agent and PNC Capital Markets LLC.

(c) Miscellaneous. Such other documents, agreements, instruments, deliverables and items deemed necessary by the Administrative Agent.

13. Representations, Warranties and Covenants. The Borrower and each Guarantor covenants and agrees with and represents and warrants to the Administrative Agent and the Lenders as follows:

(a) the Borrower's and Guarantors' obligations under the Credit Agreement, as modified hereby, are and shall remain secured by the Collateral, pursuant to the terms of the Credit Agreement and the other Loan Documents;

(b) the Borrower and each of the Guarantors possesses all of the powers requisite for it to enter into and carry out the transactions of the Borrower and each Guarantor referred to herein and to execute, enter into and perform the terms and conditions of this Amendment, the Credit Agreement and the other Loan Documents and any other documents contemplated herein that are to be performed by the Borrower or such Guarantor; any and all actions required or necessary pursuant to the Borrower's or such Guarantor's organizational documents or otherwise have been taken to authorize the due execution, delivery and performance by the Borrower and such Guarantor of the terms and conditions of this Amendment; the officers of the Borrower and each Guarantor executing this Amendment are the duly elected, qualified, acting and incumbent officers of such Loan Party and hold the titles set forth below their names on the signature lines of this Amendment; and such execution, delivery and performance will not conflict with, constitute a default under or result in a breach of any applicable law or any agreement, instrument, order, writ, judgment, injunction or decree to which the Borrower or such Guarantor is a party or by which the Borrower or such Guarantor or any of its properties is bound, and that all consents, authorizations and/or approvals required or necessary from any third parties in connection with the entry into, delivery and performance by the Borrower and such Guarantor of the terms and conditions of this Amendment, the Credit Agreement, the other Loan Documents and the transactions contemplated hereby have been obtained by the Borrower and such Guarantor and are full force and effect;



(c) this Amendment, the Credit Agreement, and the other Loan Documents constitute the valid and legally binding obligations of the Borrower and each Guarantor, enforceable against the Borrower and each Guarantor in accordance with their respective terms, except as such enforceability may be limited by applicable bankruptcy, insolvency, reorganization, moratorium or similar laws and by general equitable principles, whether enforcement is sought by proceedings at law or in equity;

(d) all representations and warranties made by the Borrower and each Guarantor in the Credit Agreement and the other Loan Documents are true and correct in all material respects (or in the case of any such representation and warranty that is qualified by materiality or reference to Material Adverse Change, in all respects) as of the date hereof, except to the extent that any such representation and warranty relates to a specific date, in which case such representation and warranty shall be true and correct in all material respects (or in the case of any such representation and warranty that is qualified by materiality or reference to Material Adverse Change, in all respects) as of such earlier date, with the same force and effect as if all such representations and warranties were fully set forth herein and made as of the date hereof and the Borrower and each Guarantor has complied with all covenants and undertakings in the Credit Agreement and the other Loan Documents;

(e) no Event of Default or Potential Default has occurred and is continuing under the Credit Agreement or the other Loan Documents; there exist no defenses, offsets, counterclaims or other claims with respect to the Borrower's or any Guarantor's obligations and liabilities under the Credit Agreement or any of the other Loan Documents; and

(f) the Borrower and each Guarantor hereby ratifies and confirms in full its duties and obligations under the Credit Agreement, the Guaranty Agreement, and the other Loan Documents applicable to it, each as modified hereby.

14. Incorporation into Credit Agreement and other Loan Documents. This Amendment shall be incorporated into the Credit Agreement by this reference and each reference to the Credit Agreement that is made in the Credit Agreement or any other document executed or to be executed in connection therewith shall hereafter be construed as a reference to the Credit Agreement as amended hereby. The term "Loan Documents" as defined in the Credit Agreement shall include this Amendment.

15. Severability. If any one or more of the provisions contained in this Amendment, the Credit Agreement, or the other Loan Documents shall be held invalid, illegal or unenforceable in any respect, the validity, legality or enforceability of the remaining provisions contained in this Amendment, the Credit Agreement or the other Loan Documents shall not in any way be affected or impaired thereby, and this Amendment shall otherwise remain in full force and effect.

16. Successors and Assigns. This Amendment shall apply to and be binding upon the Borrower and each Guarantor in all respects and shall inure to the benefit of each of the Administrative Agent and the Lenders and their respective successors and assigns, provided that

neither the Borrower nor any Guarantor may assign, transfer or delegate its duties and obligations hereunder. Nothing expressed or referred to in this Amendment is intended or shall be construed to give any person or entity other than the parties hereto a legal or equitable right, remedy or claim under or with respect to this Amendment, the Credit Agreement or any of the other Loan Documents, it being the intention of the parties hereto that this Amendment and all of its provisions and conditions are for the sole and exclusive benefit of the Borrower, the Guarantors, the Administrative Agent and the Lenders.

17. Reimbursement of Expenses. The Borrower unconditionally agrees to pay and reimburse the Administrative Agent and save the Administrative Agent harmless against liability for the payment of reasonable out-of-pocket costs, expenses and disbursements, including without limitation, fees and expenses of counsel incurred by the Administrative Agent in connection with the development, preparation, execution, administration, interpretation or performance of this Amendment and all other documents or instruments to be delivered in connection herewith.

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

19. Entire Agreement. This Amendment sets forth the entire agreement and understanding of the parties with respect to the transactions contemplated hereby and supersedes all prior understandings and agreements, whether written or oral, between the parties hereto relating to the subject matter hereof. No representation, promise, inducement or statement of intention has been made by any party which is not embodied in this Amendment, and no party shall be bound by or liable for any alleged representation, promise, inducement or statement of intention not set forth herein.

20. Headings. The various headings of this Amendment are inserted for convenience only and shall not affect the meaning or interpretation of this Amendment or any provisions hereof.

21. Construction. The rules of construction set forth in Section 1.2 [Construction] of the Credit Agreement shall apply to this Amendment.

22. Governing Law. This Amendment shall be deemed to be a contract under the laws of the State of New York and for all purposes shall be governed by and construed and enforced in accordance with the internal laws of the State of New York without regard to its conflict of laws principles.

23. Amendment/Novation. This Amendment amends, among other things, the Credit Agreement. All references to the "Credit Agreement" contained in the other Loan Documents delivered in connection with the Credit Agreement or this Amendment shall, and shall be deemed to refer to the Credit Agreement as amended by this Amendment. Notwithstanding the foregoing, the Obligations of the Borrower and the other Loan Parties outstanding under the Credit Agreement and the Loan Documents as of the Fourth Amendment Closing Date shall remain outstanding and shall constitute continuing Obligations without novation and shall

continue as such to be secured by the Collateral. Such Obligations shall in all respects be continuing and this Amendment shall not be deemed to evidence or result in a novation or repayment and reborrowing of such Obligations. The Liens securing payment of the Obligations under the Credit Agreement, as amended in the form attached to this this Amendment, shall in all respects be continuing, securing the payment of all Obligations.

**[REMAINDER OF PAGE INTENTIONALLY LEFT BLANK]  
[SIGNATURE PAGES FOLLOW]**

IN WITNESS WHEREOF, the parties hereto, by their officers thereunto duly authorized, have executed this Amendment as of the day and year first above written.

**BORROWER:**

**KOPPERS INC.,**  
a Pennsylvania corporation

By: /s/ Michael J. Zugay

Name: Michael J. Zugay

Title: Chief Financial Officer

**GUARANTORS:**

**KOPPERS HOLDINGS INC.,**  
a Pennsylvania corporation

**KOPPERS DELAWARE, INC.,**  
a Delaware corporation

**KOPPERS ASIA LLC,**  
a Delaware limited liability company

**KOPPERS PERFORMANCE CHEMICALS INC.,**  
a New York corporation

**KOPPERS RAILROAD STRUCTURES INC.,**  
a Delaware corporation

**KOPPERS RECOVERY RESOURCES LLC**  
a Kansas limited liability company

By: /s/ Steven R. Lacy

Name: Steven R. Lacy

Title: Secretary

**KOPPERS VENTURES INC.,**  
a Delaware corporation

**KOPPERS WORLD-WIDE VENTURES  
CORPORATION,**  
a Delaware corporation

By: /s/ Stephanie L. Apostolou

Name: Stephanie L. Apostolou

Title: Secretary

**BORROWER:**

**KOPPERS-NEVADA LIMITED-LIABILITY  
COMPANY,**

a Nevada limited liability company

**KOPPERS NZ LLC,**

a New York limited liability company

**WOOD PROTECTION MANAGEMENT LLC,**

a Nevada limited liability company

By:  /s/ Steven R. Lacy

Name: Steven R. Lacy

Title: Manager

**WOOD PROTECTION LP,**

a Texas limited partnership

By: **WOOD PROTECTION MANAGEMENT LLC,**

as General Partner

By:  /s/ Steven R. Lacy

Name: Steven R. Lacy

Title: Manager

**BORROWER:**

**KOPPERS UTILITY AND INDUSTRIAL PRODUCTS INC.,**

a South Carolina corporation

**COX WOOD PRESERVING COMPANY,**

a South Carolina corporation

**NATIONAL WOOD SOURCING, LLC,**

a South Carolina limited liability company

**SUSTAINABLE MANAGEMENT SYSTEMS, LLC,**

a South Carolina limited liability company

**ATLANTIC POLE- GEORGIA, LLC,**

a South Carolina limited liability company

**ATLANTIC POLE- VIRGINIA, LLC,**

a South Carolina limited liability company

**COX RECOVERY SERVICES, LLC,**

a South Carolina limited liability company

**RUBY'S CORNER, LLC,**

a South Carolina limited liability company

**SWEETWATER WOOD HOLDINGS, LLC,**

a South Carolina limited liability company

**CAROLINA POLE, INC.,**

a South Carolina corporation

**NORTH-SOUTH WOOD PRESERVING COMPANY, INC.,**

a South Carolina Corporation

**STRUCTURAL WOODS PRESERVING CO.,**

a North Carolina corporation

**COVE CITY WOOD PRESERVING, INC.,**

a North Carolina corporation

**CAROLINA POLE LELAND, INC.,**

a North Carolina corporation

**LELAND LAND LLC,**

a North Carolina limited liability company

**COX WOOD OF ALABAMA, LLC,**

an Alabama limited liability company

By: /s/ Steven R. Lacy

Name: Steven R. Lacy

Title: Secretary

**ADMINISTRATIVE AGENT AND LENDERS:**

**PNC BANK, NATIONAL ASSOCIATION,**  
as a Lender and as Administrative Agent

By:  /s/ Gregory E. Truitt

Name: Gregory E. Truitt

Title: Vice President

**WELLS FARGO BANK, NATIONAL ASSOCIATION,**  
as a Lender

By: /s/ Joseph F. King

Name: Joseph F. King

Title: Senior Vice President



**BANK OF AMERICA, N.A.,**  
as a Lender

By: /s/ Katherine Osele

Name: Katherine Osele

Title: Senior Vice President

**FIFTH THIRD BANK, NATIONAL ASSOCIATION**  
as a Lender

By: /s/ Michael S. Barnett

Name: Michael S. Barnett

Title: Senior Vice President

**BANK OF MONTREAL,**  
as a Lender

By: /s/ Joshua Hovermale

Name: Joshua Hovermale

Title: Director

**MUFG BANK, LTD.,**  
as a Lender

By: /s/ Deborah White

Name: Deborah White

Title: Director

**CITIZENS BANK, N.A., as successor by merger to  
Citizens Bank of Pennsylvania, as a Lender**

By: /s/ Carl S. Tabacjar, Jr.

Name: Carl S. Tabacjar, Jr.

Title: Senior Vice President

**KEYBANK NATIONAL ASSOCIATION,**  
as a Lender

By: /s/ Bruce Sharp

Name: Bruce Sharp

Title: Senior Banker

**NORTHWEST BANK,**  
as a Lender

By: /s/ C. Forrest Tefft

Name: C. Forrest Tefft

Title: Senior Vice President

**THE HUNTINGTON NATIONAL BANK,**  
as a Lender

By: /s/ Marcel Fournier

Name: Marcel Fournier

Title: Vice President



**FIRST NATIONAL BANK OF PENNSYLVANIA,**  
as a Lender

By: /s/ Dennis F. Lennon

Name: Dennis F. Lennon

Title: Vice President

**TRISTATE CAPITAL BANK,**  
as a Lender

By: /s/ Ellen Frank

Name: Ellen Frank

Title: Senior Vice President

**WASHINGTON FINANCIAL BANK,**  
as a Lender

By: /s/ William J. King, Jr.

Name: William J. King, Jr.

Title: Senior Vice President

**TRUIST BANK** (successor by merger to SunTrust Bank),  
as a Lender

By: /s/ Alexander Harrison

Name: Alexander Harrison

Title: Vice President