424B7 1 d852351d424b7.htm 424B7

Table of Contents

Filed Pursuant to Rule 424(b)(7) Registration Number 333-280737

PROSPECTUS SUPPLEMENT (To Prospectus dated July 9, 2024)

5,708,885 shares



Kodiak Gas Services, Inc.

Common Stock

The selling stockholder identified in this prospectus supplement (the "selling stockholder") is offering 5,708,885 shares of common stock, par value \$0.01 per share ("common stock"), of Kodiak Gas Services, Inc. ("we," "us" and "our"). We will not receive any proceeds from the sale of shares by the selling stockholder.

Pursuant to an agreement between us and the selling stockholder, and subject to the completion of this offering, we intend to purchase \$15 million of shares of common stock, or 434,783 shares, from the selling stockholder in a private transaction at a price per share equal to the public offering price. The closing of this offering is not conditioned upon the completion of the share repurchase.

The underwriters may also purchase up to an additional 856,332 shares of common stock from the selling stockholder at the public offering price less the underwriting discount set forth below within 30 days following the date of this prospectus supplement. We will not receive any proceeds from the sale of shares by the selling stockholder if the underwriters exercise their option to purchase additional shares. See "Selling Stockholder" beginning on page S-9.

The common stock is listed on the New York Stock Exchange (the "NYSE") under the symbol "KGS". The last sale price of the common stock as reported by the NYSE on November 13, 2024 was \$35.85 per share.

Investing in the common stock involves risks, including those described in the "<u>Risk Factors</u>" section beginning on page S-5 of this prospectus supplement, on page 5 of the accompanying prospectus and in the documents incorporated by reference in this prospectus supplement and the accompanying prospectus.

	Per Snare	Iotai
Initial price to public	\$ 34.5000	\$ 196,956,533
Underwriting discounts and commissions(1)	\$ 1.2938	\$ 7,385,870
Proceeds, before expenses, to the selling stockholder(2)	\$ 33.2063	\$ 189,570,663

⁽¹⁾ See "Underwriting" for a description of the compensation payable to the underwriters.

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

The underwriters expect to deliver the shares against payment therefor on or about November 18, 2024.

Joint Active Bookrunners

Goldman Sachs & Co. LLC

J.P. Morgan

Joint Bookrunners

BofA Securities Rothschild & Co

Barclays

Mizuho Stifel **Raymond James Truist Securities**

Don Chana

RBC Capital Markets
TPH&Co.

The date of this prospectus supplement is November 14, 2024.

⁽²⁾ Assumes no exercise of the underwriters' option to purchase additional shares of common stock.

Table of Contents

TABLE OF CONTENTS

Prospectus Supplement

	Page
ABOUT THIS PROSPECTUS SUPPLEMENT	S-ii
WHERE YOU CAN FIND MORE INFORMATION	S-iii
INFORMATION INCORPORATED BY REFERENCE	S-iv
CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS	S-v
SUMMARY	S-1
RISK FACTORS	S-5
USE OF PROCEEDS	S-8
DIVIDEND POLICY	S-9
SELLING STOCKHOLDER	S-10
U.S. FEDERAL INCOME TAX CONSIDERATIONS FOR NON-U.S. HOLDERS	S-12
<u>UNDERWRITING</u>	S-17
LEGAL MATTERS	S-23
EXPERTS	S-23
Prospectus	
ABOUT THIS PROSPECTUS	1
WHERE YOU CAN FIND MORE INFORMATION	2
INFORMATION INCORPORATED BY REFERENCE	3
OUR COMPANY	4
RISK FACTORS	5
CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS	6
USE OF PROCEEDS	8
SELLING STOCKHOLDERS	9
PLAN OF DISTRIBUTION	11
DESCRIPTION OF CAPITAL STOCK	13
DESCRIPTION OF WARRANTS	20
DESCRIPTION OF UNITS	21
LEGAL MATTERS	22
<u>EXPERTS</u>	22

Table of Contents

ABOUT THIS PROSPECTUS SUPPLEMENT

This document is in two parts. The first part is this prospectus supplement, which describes the specific terms of this offering and also adds to and updates information contained in the accompanying prospectus. The second part is the accompanying prospectus, which, among other things, gives more general information, some of which may not apply to this offering. Generally, when we use the term "prospectus," we are referring to both parts combined. You should read this entire prospectus supplement as well as the accompanying prospectus and the documents incorporated by reference that are described under the "Information Incorporated by Reference" section in this prospectus supplement. To the extent that any statement in this prospectus supplement is inconsistent with statements made in the accompanying prospectus, you should rely on the information contained in this prospectus supplement, which will be deemed to modify or supersede those made in the accompanying prospectus.

In making an investment decision, prospective investors must rely on their own examination of us and the terms of this offering, including the merits and risks involved. Neither we, the selling stockholder, the underwriters nor any of our or their representatives are making any representation to you regarding the legality of an investment in our common stock by you under applicable laws. You should consult with your own advisors as to legal, tax, business, financial and related aspects of an investment in our common stock.

Any statement made in this prospectus or in a document incorporated or deemed to be incorporated by reference into this prospectus will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus or in any other subsequently filed document that is also incorporated by reference into this prospectus modifies or supersedes that statement. Any statement so modified or superseded will not be deemed, except as so modified or superseded, to constitute a part of this prospectus. Please read "Where You Can Find More Information" in this prospectus supplement.

You should assume that the information appearing in this prospectus supplement, the accompanying prospectus and any free writing prospectus is accurate only as of the date on its respective cover, regardless of the time of delivery of this prospectus supplement or any sale of our common stock, and that any information incorporated by reference herein or therein is accurate only as of the date of the document incorporated by reference, unless we indicate otherwise. You should not assume that the information contained in this prospectus supplement, the documents incorporated by reference in this prospectus supplement or the accompanying base prospectus is accurate as of any date other than the respective dates of those documents. Our business, financial condition, results of operations and prospects may have changed since those dates.

Neither we, the selling stockholder, nor the underwriters have authorized anyone to provide you with information that is different from or in addition to the information contained or incorporated by reference in this prospectus supplement and the accompanying prospectus and in any related free writing prospectus that we file with the SEC. Accordingly, neither we, the selling stockholder nor the underwriters take any responsibility for, or can provide any assurance as to the reliability of, any information that others may provide.

Neither we, the selling stockholder, nor the underwriters nor any of our or their representatives are making an offer to sell these securities in any jurisdiction where an offer or sale would be unlawful.

When used in this prospectus, except where the context otherwise requires, the terms "we," "us" and "our" refer to Kodiak Gas Services, Inc. and its consolidated subsidiaries.

Table of Contents

WHERE YOU CAN FIND MORE INFORMATION

We have filed a registration statement with the SEC under the Securities Act of 1933, as amended (the "Securities Act"), that registers the offer and sale of the common stock covered by this prospectus supplement. This prospectus, which forms part of the registration statement, does not contain all of the information included in that registration statement. For further information about us and the securities covered by this prospectus supplement, you should refer to the registration statement and its exhibits. Certain information is also incorporated by reference in this prospectus supplement as described under "Information Incorporated by Reference."

We are subject to the information and periodic reporting requirements of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and, in accordance therewith, file periodic reports, proxy statements and other information with the SEC. Such periodic reports, proxy statements and other information are available at the website of the SEC at http://www.sec.gov. We also furnish our stockholders with annual reports containing our financial statements audited by an independent registered public accounting firm and quarterly reports containing our unaudited financial information. We maintain a website at www.kodiakgas.com. You may access our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports, filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act with the SEC free of charge at our website as soon as reasonably practicable after this material is electronically filed with, or furnished to, the SEC. The reference to our website or web address does not constitute incorporation by reference of the information contained at that site.

We have not authorized anyone to provide you with any information other than that contained in this prospectus supplement or in a document to which we expressly have referred you. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. You should assume that the information appearing in this prospectus supplement is accurate only as of the date on the front cover of this prospectus supplement.

S-iii

Table of Contents

INFORMATION INCORPORATED BY REFERENCE

The SEC allows us to "incorporate by reference" information into this prospectus supplement. This means that we can disclose information to you by referring you to those documents. The documents that have been incorporated by reference are an important part of this prospectus supplement, and you should review that information in order to understand the nature of any investment by you in our shares of common stock. We incorporate by reference the following documents that we have filed with the SEC (other than any portions of these documents that were deemed to have been furnished and not filed in accordance with the SEC rules, including pursuant to Item 2.02 or Item 7.01 of any Current Report on Form 8-K, including any financial statements or exhibits related thereto and furnished pursuant to Item 9.01), unless otherwise indicated herein:

- our Annual Report on Form 10-K for the year ended December 31, 2023, filed with the SEC on March 7, 2024;
- the description of our common stock contained in our Form 8-A, filed with the SEC on June 28, 2023, including any amendment to that Form that we may file in the future for the purpose of updating the description of our common stock;
- our Quarterly Report on Form 10-Q for the quarters ended March 31, 2024, filed with the SEC on May 9, 2024, June 30, 2024, filed with the SEC on August 13, 2024, and September 30, 2024, filed with the SEC on November 7, 2024;
- our <u>Definitive Proxy Statement</u> on Schedule 14A, filed with the SEC on March 25, 2024 and;
- our current reports on Form 8-K filed with the SEC on <u>January 23, 2024, February 2, 2024, March 8, 2024, April 1, 2024, May 3, 2024, May 31, 2024, June 24, 2024, September 11, 2024</u> and <u>September 27, 2024</u>.

Upon request, we will provide to each person, including any beneficial owner, to whom this prospectus is delivered, a copy of any or all of the reports or documents that have been incorporated by reference in this prospectus. If you would like a copy of any of these documents, at no cost, please write or call us at:

Kodiak Gas Services, Inc. 9950 Woodloch Forest Drive, Suite 1900 The Woodlands, Texas 77380 (936) 539-3300

All documents filed by us pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act after the date of this prospectus supplement and before the termination of this offering also shall be deemed to be incorporated herein by reference. We are not, however, incorporating by reference any documents or portions thereof that are not deemed "filed" with the SEC, including any information furnished pursuant to Items 2.02 or 7.01 of Form 8-K. Any statements in any such future filings will automatically be deemed to modify and supersede any information in any document we previously filed with the SEC that is incorporated or deemed to be incorporated herein by reference to the extent that statements in the later filed document modify or replace such earlier statements. Any such statement so modified or superseded shall not be deemed to constitute a part of this prospectus supplement, except as so modified or superseded.

S-iv

Table of Contents

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus supplement, the accompanying prospectus and the documents incorporated by reference herein and therein contain "forward-looking statements" within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. Forward-looking statements are neither historical facts nor assurances of future performance. Instead, they are based only on our current beliefs, expectations and assumptions regarding the future of our business, future plans and strategies, projections, anticipated events and trends, the economy and other future conditions. Forward-looking statements can be identified by words such as: "anticipate," "intend," "plan," "goal," "seek," "believe," "project," "estimate," "expect," "strategy," "future," "likely," "may," "should," "will" and similar references to future periods. Examples of forward-looking statements include, among others, statements we make regarding:

- Expected operating results, such as revenue growth and earnings, and our ability to service our indebtedness;
- Anticipated levels of capital expenditures and uses of capital;
- Current or future volatility in the credit markets and future market conditions;
- Potential or pending acquisition transactions or other strategic transactions, the timing thereof, the receipt of necessary approvals to close such transactions, our ability to finance such transactions, and our ability to achieve the intended operational, financial and strategic benefits from any such transactions;
- Expected synergies and efficiencies to be achieved as a result of our acquisition of CSI Compressco LP ("CSI Compressco" and such acquisition, the "CSI Acquisition");
- Expectations regarding leverage and dividend profile as a result of the CSI Acquisition, including the amount and timing of future dividend payments;
- Expectations of the effect on our financial condition of claims, litigation, environmental costs, contingent liabilities, and governmental and regulatory investigations and proceedings;
- Production and capacity forecasts for the natural gas and oil industry;
- Strategy for customer retention, growth, fleet maintenance, market position and financial results;
- Our interest rate hedges; and
- Strategy for risk management.

Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict and many of which are outside of our control. Our actual results and financial condition may differ materially from those indicated in the forward-looking statements. Therefore, you should not place undue reliance on any of these forward-looking statements. Important factors that could cause our actual results and financial condition to differ materially from those indicated in the forward-looking statements include, among others, the following:

- A reduction in the demand for natural gas and oil;
- The loss of, or the deterioration of the financial condition of, any of our key customers;
- Nonpayment and nonperformance by our customers, suppliers or vendors;
- Competitive pressures that may cause us to lose market share;
- The structure of our Contract Services contracts and the failure of our customers to continue to contract for services after expiration of the primary term;
- Our ability to successfully integrate any acquired businesses, including CSI Compressco, and realize the expected benefits thereof;

Table of Contents

- · Our ability to fund purchases of additional compression equipment;
- A deterioration in general economic, business, geopolitical or industry conditions, including as a result of the conflict between Russia and Ukraine and the Israel-Hamas War, inflation and slow economic growth in the United States;
- A downturn in the economic environment, as well as inflationary pressures;
- International operations and related mobilization and demobilization of compression units, operational interruptions, delays, upgrades, refurbishment and repair of compression assets and any related delays and cost overruns or reduced payment of contracted rates;
- Tax legislation and administrative initiatives or challenges to our tax positions;
- The loss of key management, operational personnel or qualified technical personnel;
- Our dependence on a limited number of suppliers;
- The cost of compliance with existing and new governmental regulations, including climate change legislation;
- The cost of compliance with regulatory initiatives and stakeholders' pressures, including environmental, social and governance scrutiny;
- The inherent risks associated with our operations, such as equipment defects and malfunctions;
- Our reliance on third-party components for use in our information technology systems;
- Legal and reputational risks and expenses relating to the privacy, use and security of employee and client information;
- Threats of cyber-attacks or terrorism;
- Agreements that govern our debt contain features that may limit our ability to operate our business and fund future growth and also increase our exposure to risk during adverse economic conditions;
- Volatility in interest rates;
- Our ability to access the capital and credit markets or borrow on affordable terms to obtain additional capital that we may require;
- Our ability to successfully implement our share repurchase program;
- Major natural disasters, severe weather events or other similar events that could disrupt operations;
- Unionization of our labor force, labor interruptions and new or amended labor regulations;
- Renewal of insurance;
- The effectiveness of our disclosure controls and procedures; and
- Such other factors set forth in Part I, Item 1A, "Risk Factors" of our Annual Report on Form 10-K for the fiscal year ended December 31, 2023, and Part I, Item 2, "Management's Discussion and Analysis of Financial Condition and Results of Operations" of our Quarterly Report on Form 10-Q for the quarterly periods ended March 31, 2024, June 30, 2024 and September 30, 2024.

Any forward-looking statement made by us in this prospectus supplement, the accompanying prospectus and the documents incorporated herein and therein is based only on information currently available to us and speaks only as of the date on which it is made. Except as may be required by applicable law, we undertake no obligation to publicly update any forward-looking statement whether as a result of new information, future developments or otherwise.

Table of Contents

All forward-looking statements, expressed or implied, included in this prospectus supplement, the accompanying prospectus and the documents incorporated herein and therein are expressly qualified in their entirety by this cautionary statement. This cautionary statement should also be considered in connection with any subsequent written or oral forward-looking statements that we or persons acting on our behalf may issue.

Investors should note that we announce financial information in SEC filings. We may use the "Investors" section of our website (www.kodiakgas.com) to communicate with investors. It is possible that the financial and other information posted there could be deemed to be material information. The information on our website is not part of this prospectus supplement.

S-vii

Table of Contents

SUMMARY

This summary provides a brief overview of information contained elsewhere in this prospectus supplement. Because it is abbreviated, this summary does not contain all of the information that you should consider before investing in our common stock. You should read the entire prospectus supplement, as well as the accompanying prospectus and the documents incorporated by reference herein and therein, carefully. You should read "Risk Factors" for more information about important risks that you should consider carefully before buying our common stock. References to the "selling stockholder" in this prospectus supplement refer to the selling stockholder named under "Selling Stockholder" that is offering shares of common stock in this offering.

Our Company

We are the largest contract compression services provider in the continental United States with a revenue-generating fleet of approximately 4.3 million horsepower. We focus on providing contract compression and related services to oil and gas producers and midstream customers in high-volume gas gathering systems, processing facilities, multi-well gas lift applications and natural gas transmission systems. Shares of our common stock trade on the NYSE under the ticker symbol "KGS".

Our principal executive offices are located at 9950 Woodloch Forest Drive, Suite 1900, The Woodlands, Texas 77380, and our telephone number is (936) 539-3300. We maintain a website at www.kodiakgas.com. Information contained on, or accessible through, our website is not incorporated by reference in this prospectus supplement. We make our periodic reports and other information filed with or furnished to the SEC available, free of charge, through our website, as soon as reasonably practicable after those reports and other information are electronically filed with or furnished to the SEC. Except for information specifically incorporated by reference into this prospectus supplement that may be accessed from our website, the information on, or otherwise accessible through, our website or any other website does not constitute a part of this prospectus supplement.

Share Repurchase

Pursuant to an agreement between us and the selling stockholder, and subject to the completion of this offering, we intend to purchase \$15 million of shares of common stock, or 434,783 shares, from the selling stockholder in a private transaction at a price per share equal to the public offering price. We refer to this repurchase as the "Share Repurchase." The closing of the Share Repurchase is contingent on the closing of this offering. We intend to fund the Share Repurchase with borrowings under the ABL Facility pursuant to our Fourth Amended and Restated Credit Agreement, dated as of March 22, 2023, as the same has been or may be amended from time to time. Any shares of our common stock that we repurchase in the Share Repurchase will be held as treasury shares. The Share Repurchase will be completed pursuant to the Share Repurchase Program, see "—Recent Developments—Share Repurchase Program" below for more information.

The closing of this offering is not conditioned upon the completion of the Share Repurchase and therefore there can be no assurance that the Share Repurchase will be completed. The description and the other information in this prospectus supplement regarding the Share Repurchase is included in this prospectus supplement solely for informational purposes. Nothing in this prospectus supplement should be construed as an offer to sell, or the solicitation of an offer to buy, any common stock subject to the Share Repurchase.

Table of Contents

Recent Developments

Share Repurchase Program

On November 14, 2024, the Company announced the authorization by our Board of Directors (the "Board") of a share repurchase program, beginning on the date thereof and continuing through and including December 31, 2025, allowing us to repurchase up to \$50.0 million of shares of our common stock (the "Share Repurchase Program"). The shares may be repurchased from time to time through various methods, including but not limited to, in open market transactions, through privately negotiated transactions or by other means in accordance with applicable securities laws, certain of which may be made pursuant to trading plans meeting the requirements of Rule 10b5-1 and 10b-18 under the Exchange Act. The timing of repurchases under the program, as well as the number and value of shares repurchased under the program, will be determined by the Company at its discretion and will depend on a variety of factors, including the market price of our common stock, oil and gas commodity prices, general market and economic conditions, available liquidity, compliance with the Company's debt and other agreements, applicable legal requirements and other considerations. The exact number of shares to be repurchased by us is not guaranteed, and the program may be modified, suspended or discontinued at any time without prior notice. We are not obligated to repurchase any dollar amount or number of shares under the program. After the completion of the Share Repurchase described above, there will be \$35.0 million remaining under the Share Repurchase Program.

Table of Contents

The Offering

Issuer Kodiak Gas Services, Inc.

Common stock outstanding before this offering 87,576,081 shares.

Common stock offered by the selling stockholder 5,708,885 shares.

See "Selling Stockholder."

after this offering and the Share Repurchase

Shares of common stock to be outstanding immediately 87,141,298 shares, which reflects the repurchase of \$15 million in shares of our common stock, or 434,783 shares, in the Share Repurchase and excludes approximately 5,694,225 shares of common stock reserved for issuance pursuant to our equity compensation plans and approximately 1,741,401 shares of common stock that have been issued pursuant to our equity compensation plans but have not yet vested.

Shares held by the selling stockholder after this offering 44,856,332 shares (or 44,000,000 shares if the underwriters exercise in full their option to

purchase additional shares).

See "Selling Stockholder."

Use of proceeds We will not receive any of the proceeds from the sale of shares of our common stock by the

selling stockholder in this offering. See "Use of Proceeds."

Share Repurchase Pursuant to an agreement between us and the selling stockholder, and subject to the

> completion of this offering, we intend to purchase \$15 million of shares of common stock, or 434,783 shares, from the selling stockholder in a private transaction at a price per share equal to the public offering price. The closing of this offering is not conditioned upon the completion of the Share Repurchase. The closing of the Share Repurchase is contingent on the closing of this offering. The Share Repurchase will be completed pursuant to the Share Repurchase Program, see "Summary—Recent Developments—Share Repurchase

Program" above for more information.

Risk factors See "Risk Factors" beginning on page S-4 and the other information included in, or

> incorporated by reference into, this prospectus supplement and the accompanying prospectus for a discussion of certain factors you should carefully consider before deciding

to invest in the common stock.

Table of Contents

Dividend policy We pay quarterly dividends to our shareholders at the discretion of the Board. On

October 21, 2024, the Board declared a quarterly dividend of \$0.41 per share of common stock payable on November 8, 2024, to shareholders of record as of November 1, 2024.

See "Dividend Policy."

Holders

U.S. Federal Income Tax Considerations for Non-U.S. For a discussion of U.S. federal income tax considerations that may be relevant for non-U.S. stockholders, see "U.S. Federal Income Tax Considerations for Non-U.S.

Holders."

Computershare Trust Company, N.A. Transfer agent and registrar

Listing and trading symbol Our common stock is traded on the NYSE under the symbol "KGS".

Table of Contents

RISK FACTORS

Any investment in shares of common stock involves a high degree of risk. You should carefully consider the risks described below and all of the information contained in this prospectus supplement, the accompanying prospectus, any free writing prospectus and the documents incorporated by reference herein and therein before deciding whether to purchase shares of common stock. In particular, you should carefully consider, among other things, the risks to our business and other matters described in our Annual Report on Form 10-K for the year ended December 31, 2023, Quarterly Report on Form 10-Q for the quarters ended March 31, 2024, June 30, 2024 and September 30, 2024, and other filings we make with the SEC incorporated by reference into this prospectus supplement and the accompanying prospectus. If any such risks and uncertainties actually occur, you may lose all or part of your investment. Additional risks and uncertainties not presently known to us or that we currently deem immaterial may also impair our business, financial condition or results of operations and result in a loss of all or part of your investment.

Risks related to this offering and the common stock

The trading price of our common stock is subject to volatility.

The trading price of our common stock may be volatile. The value of an investment in our common stock may decrease or increase abruptly, and such volatility may bear little or no relation to our financial or operational performance. The price of our common stock may fall in response to market appraisal of our strategy or if our results of operations and/or prospects are below the expectations of market analysts or stakeholders. In addition, equity and debt markets have, from time to time, experienced significant price and volume fluctuations that have affected the market price of securities, and may, in the future, experience similar fluctuations which may be unrelated to our operating performance and prospects but nevertheless affect the price of our common stock. Broad equity and debt market fluctuations resulting from general economic conditions, as well as our ability to meet or exceed market expectations, may materially and adversely affect the trading prices of our common stock.

Sales of a substantial number of shares of common stock in the public markets, or the perception that such sales could occur, could reduce the market price of the common stock.

Sales of a substantial number of shares of common stock in the public market, or the perception that such sales could occur, could adversely affect the market price of our common stock. Under the registration rights agreement, dated July 3, 2023, between us and the selling stockholder (the "Registration Rights Agreement"), which was executed in connection with the closing of our initial public offering ("IPO"), we agreed to register the resale of 59,000,000 shares of our common stock that were issued to the selling stockholder in connection with our IPO. Following the completion of this offering, the selling stockholder will own 44,856,332 shares of our common stock that we have registered for resale (or 44,000,000 shares if the underwriters exercise in full their option to purchase additional shares). Subject to the restrictions set forth in the following paragraph, the selling stockholder may sell such shares in its discretion. We are unable to predict the effect that future sales by the selling stockholder or sales by other stockholders may have on the prevailing market price of our common stock.

Subject to certain exceptions described in the "Underwriting" section of this prospectus supplement, we, our officers and directors and the selling stockholder have agreed to enter into lock-up agreements with the underwriters of this offering pursuant to which we and they have agreed, or will agree, that we and they will not dispose of or hedge any shares of common stock or any securities convertible into or exchangeable for shares of common stock for a period of 60 days after the date of this prospectus supplement. The representatives of the underwriters may permit us, our officers, our directors or the selling stockholder to sell shares prior to the end of the lock-up period. Sales of a substantial number of such shares upon expiration of, or the perception that such sales may occur, or early release of the securities subject to, the lock-up agreements, could cause our stock price to fall or make it more difficult for you to sell common stock at a time and price that you deem appropriate.

Table of Contents

We may issue common stock or equity securities senior to the common stock in the future for a number of reasons, including to finance our operations and growth plans, to adjust our ratio of debt-to-equity, to satisfy our obligations upon the exercise of options or for other reasons. Future sales or issuances of shares of common stock or other equity securities, or the availability of shares of common stock or such other equity securities for future sale or issuance, may negatively affect the trading price of the common stock. No prediction can be made as to the effect, if any, that future sales or issuance of shares of common stock or other equity or equity-linked securities will have on the trading price of our common stock.

Frontier TopCo Partnership, L.P. ("Kodiak Holdings") holds, and will continue to hold, a significant portion of the outstanding shares of our common stock, which may limit the ability of our public stockholders to influence significant corporate decisions.

Currently, our largest stockholder is Kodiak Holdings, an affiliate of the funds known as EQT Infrastructure III SCSp ("EQT Infrastructure III") and EQT Infrastructure IV SCSp. Upon completion of this offering, and assuming completion of the Share Repurchase, Kodiak Holdings will beneficially own approximately 51.5% of our shares of common stock in the aggregate (or approximately 50.5% if the underwriters exercise in full their option to purchase additional shares). The foregoing beneficial ownership percentages are based on 87,576,081 shares of common stock outstanding as of November 13, 2024, and, unless otherwise noted, does not take into account the 1,495,804 shares of Series A Preferred Stock issued and outstanding as of November 13, 2024 (the "Series A Preferred Stock").

Pursuant to the terms of the Stockholders' Agreement (the "Stockholders' Agreement"), dated July 3, 2023, between us and Kodiak Holdings, Kodiak Holdings is entitled to nominate (i) two directors for so long as Kodiak Holdings owns, directly or indirectly, at least 35% of the voting power of all shares of our capital stock entitled to vote generally in the election of directors; and (ii) one director, for so long as Kodiak Holdings owns, directly or indirectly, at least 10% but less than 35% of the voting power of all shares of our capital stock entitled to vote generally in the election of directors. The Stockholders' Agreement also granted Kodiak Holdings rights to approve certain of our corporate actions, including among other things, amendments to our organizational documents, equity issuances, the incurrence of certain indebtedness, changing the size of the Board, certain dispositions of assets, modifying our dividend policy, consummating a change of control transaction or entering into voluntary liquidation or the commencement of bankruptcy proceedings. As a result of its share ownership and rights under the Stockholders' Agreement, Kodiak Holdings may be able to significantly influence significant corporate matters and transactions. This concentration of ownership may delay, deter or prevent acts that would be favored by our public stockholders, such as a change of control transaction that would result in the payment of a premium to such stockholders.

Investors in this offering may experience future dilution.

In order to raise additional capital, effect acquisitions or for other purposes, we may in the future offer additional shares of common stock or other securities convertible into, or exchangeable for, common stock at prices that may be less than the price per share of this offering. We have an effective shelf registration statement from which additional shares of common stock and other securities can be offered. We cannot assure you that we will be able to sell shares or other securities in any other offering at a price per share that is equal to or greater than the price per share paid by investors in this offering. If the price per share at which we sell additional shares of common stock or related securities in future transactions is less than the price per share in this offering, investors who purchase common stock in this offering will suffer a dilution of their investment. In addition, equity awards under our share-based compensation plans may cause further dilution.

Table of Contents

Our amended and restated certificate of incorporation ("Charter") and second amended and restated bylaws ("Bylaws") contain provisions that could delay, discourage or prevent a takeover attempt even if a takeover might be beneficial to our stockholders, and such provisions may adversely affect the market price of our common stock.

Provisions contained in our Charter and Bylaws could make it more difficult for a third party to acquire us. Our Charter and Bylaws also impose various procedural and other requirements, which could make it more difficult for stockholders to effect certain corporate actions. For example, our Charter authorizes our Board to determine the rights, preferences, privileges and restrictions of unissued series of preferred stock without any vote or action by our stockholders. Thus, the Board can authorize and issue shares of preferred stock with voting or conversion rights that could adversely affect the voting or other rights of holders of our capital stock. These rights may have the effect of delaying or deterring a change of control of us. Additionally, for example, our Bylaws (i) establish limitations on the removal of directors and on the ability of our stockholders to call special meetings, (ii) include advance notice requirements for nominations for election to the Board and for proposing matters that can be acted upon at stockholder meetings, (iii) provide that the Board is expressly authorized to adopt, or to alter or repeal, the Bylaws, and (iv) provide for a classified Board, consisting of three classes of approximately equal size, each class serving staggered three-year terms, so that only approximately one-third of our directors are elected each year. Those, and other provisions of our Charter and Bylaws, could limit the price that certain investors might be willing to pay in the future for shares of our common stock.

Table of Contents

USE OF PROCEEDS

We will not receive any proceeds from the sale of shares of common stock by the selling stockholder. The selling stockholder will receive all of the net proceeds from the sale of these shares. See "Selling Stockholder."

S-8

Table of Contents

DIVIDEND POLICY

We pay quarterly dividends to our shareholders at the discretion of the Board. On October 21, 2024, the Board declared a dividend of \$0.41 per share of common stock totaling approximately \$35.9 million payable on November 8, 2024, to shareholders of record as of November 1, 2024. Although we currently intend to return capital to shareholders in the form of a quarterly cash dividend, the amount and timing of these returns of capital to shareholders may vary from time to time. The decision whether to return capital to shareholders, as well as the timing and amount of any return of capital to shareholders, is subject to the discretion of the Board, which regularly evaluates our proposed capital returns to shareholders and the requirements, if any, under the General Corporation Law of the State of Delaware.

S-9

Table of Contents

SELLING STOCKHOLDER

The table below sets forth certain information known to us with respect to the beneficial ownership of the shares of common stock held by the selling stockholder before and after giving effect to this offering, including completion of the Share Repurchase. The percent of beneficial ownership for the selling stockholder is based on 87,576,081 shares of common stock issued and outstanding as of November 13, 2024, and, except where indicated, does not take into account the 1,495,804 shares of Series A Preferred Stock issued and outstanding as of November 13, 2024.

	~-	Shares of common stock beneficially owned prior to this offering ⁽¹⁾		Shares of common		Shares of common stock beneficially owned completion of this offering ⁽¹⁾	
			Combined	stock being	•		Combined
			Voting	offered			Voting
	Number	Percentage(2)	Percentage(3)	hereby	Number	Percentage(2)	Percentage(3)
Frontier TopCo Partnership, L.P.(4)	51,000,000	58.2%	57.3%	5,708,885	44,856,332	51.5%	50.6%

- (1) The amounts and percentages of common stock beneficially owned are reported on the basis of regulations of the SEC governing the determination of beneficial ownership of securities. Under the rules of the SEC, a person is deemed to be a "beneficial owner" of a security if that person has or shares voting power, which includes the power to vote or direct the voting of such security, or investment power, which includes the power to dispose of or to direct the disposition of such security. Under these rules, more than one person may be deemed to be a beneficial owner of the same securities, and a person may be deemed to be a beneficial owner of securities as to which such person has no economic interest.
- (2) Does not take into account 1,495,804 shares of Series A Preferred Stock issued and outstanding as of November 13, 2024
- (3) Reflects the combined voting percentage based on 87,576,081 shares of common stock and 1,495,804 shares of Series A Preferred Stock issued and outstanding as of November 13, 2024. Each holder of Series A Preferred Stock is entitled to one vote for each share of Series A Preferred Stock on all matters submitted to a vote of the holders of common stock.
- (4) Consists of shares of common stock held directly by Kodiak Holdings. Frontier Topco GP, LLC ("Frontier GP") is the general partner of Kodiak Holdings. EQT Infrastructure III indirectly owns 100% of the membership interests in Frontier GP. EQT Fund Management S.à r.l. ("EFMS") has exclusive responsibility for the management and control of the business and affairs of investment vehicles which constitute the majority of the total commitments to EQT Infrastructure III. As such, EFMS has the power to control Frontier GP's voting and investment decisions and may be deemed to have beneficial ownership of the securities held by Kodiak Holdings. EFMS is overseen by a board that acts by majority approval. The individual members of such board are Joshua Stone, Peter Veldman, Sara Huda, Magnus Siocrona and Patrik Burnas. The registered address of Kodiak Holdings and Frontier GP is 108 Lakeland Ave, Dover, Kent County, Delaware, 19901 USA. The registered address of EFMS is 51A, Boulevard Royal, L-2449 Luxembourg, Grand Duchy of Luxembourg, which is also the mailing address of each of Kodiak Holdings and Frontier GP. Kodiak Holdings has pledged the shares it owns as collateral under that certain Amended and Restated Credit Agreement, dated as of May 19, 2022, as amended by that certain First Amendment, dated March 31, 2023, among Kodiak Gas Services, LLC, Frontier Intermediate Holding, LLC, the administrative agent, and the lenders party thereto, the obligations of which were assumed by Kodiak Holdings (and which were further assumed by a parent entity of Kodiak Holdings), and has granted the lenders thereunder certain consent rights over Kodiak Holdings' exercise of its rights under the Stockholders' Agreement.

Table of Contents

Material Relationships with the Selling Stockholder

Share Repurchase

Pursuant to an agreement between us and the selling stockholder, and subject to the completion of this offering, we intend to purchase \$15 million of shares of common stock, or 434,783 shares, from the selling stockholder in a private transaction at a price per share equal to the public offering price. On September 11, 2024, we repurchased 1,000,000 shares of common stock from the selling stockholder at a price of \$25.00 per share. See "Summary—Share Repurchase" for more information.

Stockholders' Agreement

In connection with the consummation of the IPO, we entered into the Stockholders' Agreement, that provides Kodiak Holdings and its affiliates who hold shares of common stock certain rights to designate nominees for election to the Board. The Stockholders' Agreement provides that, subject to compliance with applicable law and stock exchange rules, for so long as Kodiak Holdings and its affiliates beneficially own at least 35% of the shares of common stock then outstanding, Kodiak Holdings is entitled to designate two directors to the Board; and for so long as Kodiak Holdings and its affiliates beneficially own at least 10% of the shares of common stock then outstanding, Kodiak Holdings is entitled to designate at least one director. For so long as Kodiak Holdings has the right to designate directors to the Board, it will also have the right to appoint the same number of board observers, who are entitled to attend all meetings of the Board in a non-voting, observer capacity. Alex Darden and Nirav Shah currently occupy the directorships pursuant to which Kodiak Holdings has nomination rights under the Stockholders' Agreement.

For so long as Kodiak Holdings beneficially owns at least 35% of the shares of common stock then outstanding, we may not, without the approval of Kodiak Holdings, take any of the following actions: change the size of the Board; amend, restate, modify or waive the Charter or Bylaws; enter into voluntary liquidation or dissolution, commence bankruptcy or insolvency proceedings, adopt a plan with respect to any of the foregoing or decide not to oppose any similar proceeding commenced by a third party; consummate a transaction that would result in a change of control or a sale of all or substantially all of our assets; incur debt for borrowed money (or liens securing such debt) in excess of \$50 million, including incremental incurrences under existing debt facilities; authorize, create (by way of reclassification, merger, consolidation or otherwise) or issue in excess of \$25 million of any equity securities of any kind (other than pursuant to any equity compensation plan approved by the compensation committee or intracompany issuances among us and our subsidiaries), including any designation of the rights (including special voting rights) of one or more classes of preferred stock; modify our dividend policy; or sell, transfer or otherwise dispose of assets not in the ordinary course of business in a transaction or series of transactions with a fair market value in excess of \$100 million.

Registration Rights Agreement

In connection with the consummation of the IPO, we entered into the Registration Rights Agreement. Under the Registration Rights Agreement, we agreed to register the sale of shares of common stock held by Kodiak Holdings under certain circumstances, and to provide such shareholders with certain customary underwritten offering, block trade and piggyback rights.

Table of Contents

U.S. FEDERAL INCOME TAX CONSIDERATIONS FOR NON-U.S. HOLDERS

The following is a summary of certain material U.S. federal income tax considerations related to the acquisition, ownership and disposition of common stock acquired pursuant to this offering by a non-U.S. holder (as defined below). This summary does not purport to be a complete analysis of all potential tax considerations related thereto. This summary is limited to non-U.S. holders who hold shares of common stock as capital assets within the meaning of Section 1221 of the Internal Revenue Code of 1986, as amended (the "Code") (generally, for investment purposes).

This summary is based on the current provisions of the Code, final, temporary and proposed U.S. Treasury regulations promulgated thereunder, administrative rulings and pronouncements and judicial decisions and published positions of the Internal Revenue Service (the "IRS"), all as in effect on the date hereof, and all of which are subject to change or differing interpretations, possibly with retroactive effect, so as to result in U.S. federal income tax consequences different than those set forth below. We have not sought and will not seek any ruling from the IRS with respect to the statements made and the conclusions reached in the following summary, and there can be no assurance that the IRS or a court will agree with such statements and conclusions or that a court would not sustain any challenge by the IRS in the event of litigation.

This summary does not address all aspects of U.S. federal income taxation that may be relevant to non-U.S. holders in light of their personal circumstances. In addition, this summary does not address the Medicare tax on certain investment income, U.S. federal estate or gift tax laws, any state, local or non-U.S. tax laws or any tax treaties. This summary also does not address tax considerations applicable to investors that may be subject to special treatment under the U.S. federal income tax laws, such as:

- any direct, indirect or constructive owner of the selling stockholder;
- banks, insurance companies or other financial institutions;
- tax-exempt organizations or governmental organizations;
- qualified foreign pension funds defined in Section 897(l)(2) of the Code (or any entities all of the interests of which are held by a qualified foreign pension fund);
- brokers or dealers in securities or currencies;
- traders in securities that use the mark-to-market method of accounting for U.S. federal income tax purposes;
- persons subject to the alternative minimum tax;
- partnerships, S corporations or other pass-through entities for U.S. federal income tax purposes or holders of interests therein;
- "controlled foreign corporations," "passive foreign investment companies" and corporations that accumulate earnings to avoid U.S. federal income tax;
- persons that acquired common stock through the exercise of employee stock options or otherwise as compensation or through a
 tax-qualified retirement plan;
- certain former citizens or long-term residents of the United States;
- persons subject to the anti-inversion rules of Section 7874 of the Code; and
- persons that hold common stock as part of a straddle, appreciated financial position, synthetic security, hedge, conversion transaction, wash sale or other integrated investment or risk reduction transaction.

THIS DISCUSSION IS FOR INFORMATION PURPOSES ONLY AND IS NOT INTENDED AS TAX ADVICE. PROSPECTIVE INVESTORS ARE URGED TO CONSULT THEIR TAX ADVISORS

S-12

Table of Contents

WITH RESPECT TO THE APPLICATION OF THE U.S. FEDERAL INCOME TAX LAWS TO THEIR PARTICULAR SITUATION, AS WELL AS ANY TAX CONSIDERATIONS RELATING TO THE ACQUISITION, OWNERSHIP AND DISPOSITION OF COMMON STOCK ARISING UNDER THE U.S. FEDERAL ESTATE OR GIFT TAX LAWS OR UNDER THE LAWS OF ANY STATE, LOCAL, NON-U.S. OR OTHER TAXING JURISDICTION OR UNDER ANY APPLICABLE INCOME TAX TREATY.

Non-U.S. Holder Defined

For purposes of this discussion, a "non-U.S. holder" is a beneficial owner of common stock that is not, for U.S. federal income tax purposes, a partnership (or an investor therein) or any of the following:

- an individual who is a citizen or resident of the United States;
- a corporation (or other entity treated as a corporation for U.S. federal income tax purposes) created or organized in or under the laws of the United States, any state thereof or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income tax regardless of its source; or
- a trust (i) the administration of which is subject to the primary supervision of a U.S. court and which has one or more United States persons (within the meaning of Section 7701(a)(30) of the Code) who have the authority to control all substantial decisions of the trust or (ii) which has made a valid election under applicable U.S. Treasury regulations to be treated as a United States person.

If a partnership (including an entity or arrangement treated as a partnership for U.S. federal income tax purposes) holds common stock, the tax treatment of a partner in the partnership generally will depend upon the status of the partner, upon the activities of the partnership and the partner, and upon certain determinations made at the partner level. Accordingly, we urge partnerships and partners in partnerships (including entities or arrangements treated as partnerships for U.S. federal income tax purposes) considering the purchase of common stock to consult their tax advisors regarding the U.S. federal income tax considerations relating to the acquisition, ownership and disposition of common stock by such partnership.

Distributions

If we make cash or other property distributions on the common stock, other than certain pro rata distributions of common stock, such distributions will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. To the extent those distributions exceed our current and accumulated earnings and profits, the distributions will be treated as a non-taxable return of capital, which will reduce the non-U.S. holder's tax basis in the common stock until such basis equals zero, and thereafter as capital gain from the sale or exchange of such common stock. See "—Gain on Disposition of Common Stock." Subject to the withholding requirements applicable under FATCA (as defined below) and with respect to effectively connected dividends, each of which is discussed below, any dividends paid to a non-U.S. holder on the common stock generally will be subject to U.S. federal withholding tax at a rate of 30% of the gross amount of the dividend unless an applicable income tax treaty provides for a lower rate. To receive the benefit of a reduced treaty rate, a non-U.S. holder must generally provide the applicable withholding agent with a properly completed and executed IRS Form W-8BEN, IRS Form W-8BEN-E or other applicable or successor form certifying qualification for the reduced rate. A non-U.S. holder that does not timely furnish the required documentation, but that qualifies for a reduced treaty rate, may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS.

Dividends paid to a non-U.S. holder that are effectively connected with a trade or business conducted by the non-U.S. holder in the United States (and, if required by an applicable income tax treaty, are treated as attributable to a permanent establishment maintained by the non-U.S. holder in the United States) generally will be taxed on a net income basis at the rates and in the manner generally applicable to United States persons (as

Table of Contents

defined under the Code). Such effectively connected dividends will not be subject to U.S. federal withholding tax if the non-U.S. holder satisfies certain certification requirements by providing the applicable withholding agent with a properly completed and executed IRS Form W-8ECI (or other applicable or successor form) certifying eligibility for exemption. If the non-U.S. holder is a corporation for U.S. federal income tax purposes, it may also be subject to a branch profits tax at a 30% rate (or such lower rate as specified by an applicable income tax treaty) on its effectively connected earnings and profits (as adjusted for certain items), which will include effectively connected dividends.

Non-U.S. holders should consult their tax advisors regarding their entitlement to benefits under an applicable income tax treaty and the manner of claiming the benefits of such treaty.

Gain on Disposition of Common Stock

Subject to the discussion below under "—Backup Withholding and Information Reporting" and "—Additional Withholding Requirements Under FATCA," a non-U.S. holder generally will not be subject to U.S. federal income or withholding tax on any gain realized upon the sale or other taxable disposition of common stock unless:

- the non-U.S. holder is an individual who has been present in the United States for 183 days or more during the calendar year in which the sale or disposition occurs and certain other conditions are met;
- the gain is effectively connected with a trade or business conducted by the non-U.S. holder in the United States (and, if required by an applicable income tax treaty, is attributable to a permanent establishment maintained by the non-U.S. holder in the United States); or
- the common stock constitutes a United States real property interest by reason of our status as a United States real property holding corporation (a "USRPHC") for U.S. federal income tax purposes.

A non-U.S. holder described in the first bullet point above will be subject to U.S. federal income tax at a rate of 30% (or such lower rate as specified by an applicable income tax treaty) on the amount of such gain, which generally may be offset by U.S. source capital losses.

A non-U.S. holder whose gain is described in the second bullet point above or, subject to the exceptions described in the next paragraph, the third bullet point above, generally will be taxed on a net income basis at the rates and in the manner generally applicable to United States persons (as defined under the Code) unless an applicable income tax treaty provides otherwise. If such non-U.S. holder is a corporation for U.S. federal income tax purposes, it may also be subject to a branch profits tax (at a 30% rate or such lower rate specified by an applicable income tax treaty) on its effectively connected earnings and profits (as adjusted for certain items), which will include any effectively connected gain described in the second bullet point above.

Generally, a corporation is a USRPHC if the fair market value of its United States real property interests equals or exceeds 50% of the sum of the fair market value of its worldwide real property interests and its other assets used or held for use in a trade or business. We believe that we currently are not a USRPHC for U.S. federal income tax purposes, and we do not expect to become a USRPHC for the foreseeable future. However, in the event that we become a USRPHC, as long as our common stock is and continues to be "regularly traded on an established securities market," (within the meaning of the U.S. Treasury regulations) only a non-U.S. holder that actually or constructively owns, or owned at any time during the shorter of the five-year period ending on the date of the disposition or the non-U.S. holder's holding period for the common stock, more than 5% of our common stock will be treated as disposing of a U.S. real property interest and will be taxable on gain realized on the disposition of our common stock as a result of our status as a USRPHC. If we were to become a USRPHC and our common stock were not considered to be regularly traded on an established securities market, a non-U.S. holder (regardless of the percentage of stock owned) would be treated as disposing of a U.S. real property interest and would be subject to U.S. federal income tax on a taxable disposition of our common stock (as described in

Table of Contents

the preceding paragraph), and a 15% withholding tax would apply to the gross proceeds from such disposition (and to any distributions treated as a non-taxable return of capital or capital gain from the sale or exchange of such common stock as described above under "—Distributions"). Non-U.S. holders should consult their tax advisors with respect to the application of the foregoing rules to their ownership and disposition of common stock.

Backup Withholding and Information Reporting

Any dividends paid to a non-U.S. holder must be reported annually to the IRS and to the non-U.S. holder. Copies of these information returns may also be made available to the tax authorities in the country in which the non-U.S. holder resides or is established. Payments of dividends to a non-U.S. holder generally will not be subject to backup withholding if the non-U.S. holder establishes an exemption by properly certifying its non-U.S. status on an IRS Form W-8BEN, IRS Form W-8BEN-E or other applicable or successor form.

Payments of the proceeds from a sale or other disposition by a non-U.S. holder of common stock effected by or through a U.S. office of a broker generally will be subject to information reporting and backup withholding (at the applicable rate, which is currently 24%) unless the non-U.S. holder establishes an exemption by properly certifying its non-U.S. status on an IRS Form W-8BEN, IRS Form W-8BEN-E or other applicable or successor form and certain other conditions are met. Information reporting and backup withholding generally will not apply to any payment of the proceeds from a sale or other disposition of common stock effected outside the United States by a non-U.S. office of a broker. However, unless such broker has documentary evidence in its records that the non-U.S. holder is not a United States person and certain other conditions are met, or the non-U.S. holder otherwise establishes an exemption, information reporting will apply to a payment of the proceeds of the disposition of common stock effected outside the United States by such a broker if it has certain relationships within the United States.

Backup withholding is not an additional tax. Rather, the U.S. federal income tax liability (if any) of persons subject to backup withholding will be reduced by the amount of tax withheld. If backup withholding results in an overpayment of taxes, a refund may be obtained, provided that the required information is timely furnished to the IRS.

Non-U.S. holders, including any non-U.S. holder that actually or constructively owns, or owned at any time during the shorter of the five-year period ending on the date of the disposition or the non-U.S. holder's holding period for the common stock, more than 5% of the common stock, should consult their tax advisors regarding the application of these rules to their particular circumstances.

Additional Withholding Requirements Under FATCA

Sections 1471 through 1474 of the Code, and the U.S. Treasury regulations and administrative guidance issued thereunder (FATCA), impose a 30% withholding tax on any dividends paid on the common stock and (subject to the proposed U.S. Treasury regulations discussed below) on the gross proceeds from a sale or other disposition of common stock, in each case, if paid to a "foreign financial institution" or a "non-financial foreign entity" (each as defined in the Code) (including, in some cases, when such foreign financial institution or non-financial foreign entity is acting as an intermediary), unless (i) in the case of a foreign financial institution, such institution enters into an agreement with the U.S. government to withhold on certain payments, and to collect and provide to the U.S. tax authorities substantial information regarding U.S. account holders of such institution (which includes certain equity and debt holders of such institution, as well as certain account holders that are non-U.S. entities with U.S. owners), (ii) in the case of a non-financial foreign entity, such entity certifies that it does not have any "substantial United States owners" (as defined in the Code) or provides the applicable withholding agent with a certification identifying the direct and indirect substantial United States owners of the entity (in either case, on a properly completed and executed IRS Form W-8BEN-E or successor form, as applicable), or (iii) the foreign financial institution or non-financial foreign entity otherwise qualifies for an

Table of Contents

exemption from these rules and provides appropriate documentation (such as a properly completed and executed IRS Form W-8BEN-E or successor form, as applicable). Foreign financial institutions located in jurisdictions that have an intergovernmental agreement with the United States governing these rules may be subject to different rules. Under certain circumstances, a holder might be eligible for refunds or credits of such taxes. Proposed U.S. Treasury regulations that may be relied upon pending adoption of final U.S. Treasury regulations have indefinitely suspended the withholding tax on gross proceeds. Consequently, FATCA withholding is not expected to apply to gross proceeds from the sale or other disposition of common stock. Non-U.S. holders are encouraged to consult their tax advisors regarding the effects of FATCA on their investment in the common stock.

INVESTORS CONSIDERING THE PURCHASE OF COMMON STOCK ARE URGED TO CONSULT THEIR TAX ADVISORS REGARDING THE APPLICATION OF THE U.S. FEDERAL INCOME TAX LAWS TO THEIR PARTICULAR SITUATIONS AND THE APPLICABILITY AND EFFECT OF U.S. FEDERAL ESTATE AND GIFT TAX LAWS AND ANY STATE, LOCAL OR NON-U.S. TAX LAWS AND TAX TREATIES.

Table of Contents

UNDERWRITING

We, the selling stockholder and the underwriters named below have entered into an underwriting agreement with respect to the shares of common stock being offered. Subject to certain conditions, each underwriter has severally agreed to purchase the number of shares of common stock indicated in the following table. Barclays Capital Inc., Goldman Sachs & Co. LLC and J.P. Morgan Securities LLC are the representatives of the underwriters.

Underwriters	Number of Shares
Barclays Capital Inc.	1,309,237
Goldman Sachs & Co. LLC	1,309,236
J.P. Morgan Securities LLC	1,309,236
BofA Securities, Inc.	222,647
Mizuho Securities USA LLC	222,647
Raymond James & Associates, Inc.	222,647
RBC Capital Markets, LLC	222,647
Rothschild & Co US Inc.	222,647
Stifel, Nicolaus & Company, Incorporated	222,647
Truist Securities, Inc.	222,647
Tudor, Pickering, Holt & Co. Securities, Inc.	222,647
Total	5,708,885

The underwriters are committed to take and pay for all of the shares of common stock being offered, if any are taken, other than the shares of common stock covered by the option described below unless and until this option is exercised.

The underwriters have an option to buy up to an additional 856,332 shares of common stock from the selling stockholder to cover sales by the underwriters of a greater number of shares of common stock than the total number set forth in the table above. They may exercise that option for 30 days. If any shares of common stock are purchased pursuant to this option, the underwriters will severally purchase shares in approximately the same proportion as set forth in the table above.

The following table show the per share and total underwriting discounts and commissions to be paid to the underwriters by the selling stockholder. Such amounts are shown assuming both no exercise and full exercise of the underwriters' option to purchase 856,332 additional shares.

Paid by the Selling Stockholder	No Exercise	Full Exercise
Per Share	\$ 1.2938	\$ 1.2938
Total	\$ 7,385,870	\$ 8,493,750

Shares of common stock sold by the underwriters to the public will initially be offered at the initial public offering price set forth on the cover of this prospectus supplement. Any shares sold by the underwriters to securities dealers may be sold at a discount of up to \$0.77625 per share from the initial public offering price. After the initial offering of the shares, the representatives may change the offering price and the other selling terms. The offering of the shares of common stock by the underwriters is subject to receipt and acceptance and subject to the underwriters' right to reject any order in whole or in part.

We, our officers and directors and the selling stockholder (the "Lock-Up Parties") have agreed with the underwriters, subject to certain exceptions, not to dispose of or hedge any of their common stock or securities convertible into or exchangeable for shares of common stock during the period from the date of this prospectus

Table of Contents

supplement continuing through the date 60 days after the date of this prospectus supplement (the "Lock-Up Period"), except with the prior written consent of two of the representatives. These agreements do not, among other things, prohibit (a) transfer of shares of common stock (i) as bona fide gifts or charitable contributions, or for bona fide estate planning purposes, (ii) by will, testamentary document or intestate succession, (iii) to any member of the Lock-Up Party's immediate family or to any trust for the benefit of the Lock-Up Party or the immediate family of the Lock-Up Party, (iv) to a partnership, limited liability company or other entity of which the Lock-Up Party and the immediate family of the Lock-Up Party are the legal and beneficial owner of all of the outstanding equity securities or similar interests, (v) to a nominee or custodian of a person or entity to whom a disposition or transfer would be permissible under clauses (a)(i) through (iv) above, (vi) to another corporation, partnership, limited liability company or other business entity that is an affiliate (as defined in Rule 405 under the Securities Act) of the Lock-Up Party or to any investment fund or other entity which fund or entity is controlled or managed by the Lock-Up Party or affiliates of the Lock-Up Party, or as part of a distribution by the Lock-Up Party to its equityholders, (vii) by operation of law, such as pursuant to a qualified domestic order, divorce settlement, divorce decree or separation agreement, (viii) to us from an employee upon death, disability or termination of employment, in each case, of such employee, (ix) in connection with a sale of their shares of common stock acquired (A) from the underwriters or (B) in open market transactions after the closing date of this offering, (x) to us in connection with the vesting, settlement or exercise of restricted stock units, options, warrants or other rights to purchase shares of common stock (including, in each case, by way of "net" or "cashless" exercise) that are scheduled to expire or automatically vest during the Lock-Up Period, or (xi) with the prior written consent of two of the representatives, subject to certain requirements; (b) entering into a written plan meeting the requirements of Rule 10b5-1 under the Exchange Act; and (c) transfer of shares of common stock pursuant to a bona fide third-party tender offer, merger, consolidation or other similar transaction that is approved by the Board, provided that in the event that such tender offer, merger, consolidation or other similar transaction is not completed, the shares of common stock will remain subject to the provisions of this agreement.

In connection with the offering, the underwriters may purchase and sell shares of common stock in the open market. These transactions may include short sales, stabilizing transactions and purchases to cover positions created by short sales. Short sales involve the sale by the underwriters of a greater number of shares than they are required to purchase in the offering, and a short position represents the amount of such sales that have not been covered by subsequent purchases. A "covered short position" is a short position that is not greater than the amount of additional shares for which the underwriters' option described above may be exercised. The underwriters may cover any covered short position by either exercising their option to purchase additional shares or purchasing shares in the open market. In determining the source of shares to cover the covered short position, the underwriters will consider, among other things, the price of shares available for purchase in the open market as compared to the price at which they may purchase additional shares pursuant to the option described above. "Naked" short sales are any short sales that create a short position greater than the amount of additional shares for which the option described above may be exercised. The underwriters must cover any such naked short position by purchasing shares in the open market. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the common stock in the open market after pricing that could adversely affect investors who purchase in the offering. Stabilizing transactions consist of various bids for or purchases of common stock made by the underwriters in the open market prior to the completion of the offering.

The underwriters may also impose a penalty bid. This occurs when a particular underwriter repays to the underwriters a portion of the underwriting discount received by it because the representatives have repurchased shares sold by or for the account of such underwriter in stabilizing or short covering transactions.

Purchases to cover a short position and stabilizing transactions, as well as other purchases by the underwriters for their own accounts, may have the effect of preventing or retarding a decline in the market price of our common stock, and together with the imposition of the penalty bid, may stabilize, maintain or otherwise affect the market price of the common stock. As a result, the price of the common stock may be higher than the price that otherwise might exist in the open market. The underwriters are not required to engage in these

Table of Contents

activities and may end any of these activities at any time. These transactions may be effected on NYSE, in the over-the-counter market or otherwise.

European Economic Area

In relation to each Member State of the European Economic Area (each, a "Relevant Member State"), an offer to the public of any shares of common stock may not be made in that Relevant Member State, except that an offer to the public in that Relevant Member State of any shares of common stock may be made at any time under the following exemptions under the EU Prospectus Regulation:

a) to any legal entity which is a "qualified investor" as defined under the EU Prospectus Regulation;

b) to fewer than 150 natural or legal persons (other than "qualified investors" as defined under the EU Prospectus Regulation), subject to obtaining the prior consent of the underwriters for any such offer; or

c) in any other circumstances falling within Article 1(4) of the EU Prospectus Regulation, provided that no such offer of shares of common stock shall result in a requirement for us or any of the underwriters to publish a prospectus pursuant to Article 3 of the Prospectus Regulation or a supplemental prospectus pursuant to Article 23 of the Prospectus Regulation and each person who initially acquires any shares of common stock or to whom any offer is made will be deemed to have represented, warranted and agreed to and with each of the underwriters and us that it is a qualified investor within the meaning of Article 2 of the EU Prospectus Regulation.

In the case of any shares of common stock being offered to a financial intermediary as that term is used in Article 1(4) of the EU Prospectus Regulation, each financial intermediary will also be deemed to have represented, warranted and agreed that the shares of common stock acquired by it in the offer have not been acquired on a non-discretionary basis on behalf of, nor have they been acquired with a view to their offer or resale to, persons in circumstances which may give rise to an offer of any shares of common stock to the public, other than their offer or resale in a Relevant Member State to qualified investors as so defined or in circumstances in which the prior consent of the underwriters has been obtained to each such proposed offer or resale.

We, the underwriters and their affiliates will rely upon the truth and accuracy of the foregoing representations, warranties and agreements. Notwithstanding the above, a person who is not a "qualified investor" and who has notified the underwriters of such fact in writing may, with the prior consent of the Notwithstanding the above, a person who is not a "qualified investor" and who has notified the underwriters of such fact in writing may, with the prior consent of the underwriters, be permitted to acquire shares of common stock in the offer.

For the purposes of this provision, the expression an "offer to the public" in relation to any shares of common stock in any Relevant Member State means the communication in any form and by any means of sufficient information on the terms of the offer and any shares of common stock to be offered so as to enable an investor to decide to purchase or subscribe for any shares of common stock, and the expression "EU Prospectus Regulation" means Regulation (EU) 2017/1129.

United Kingdom

An offer to the public of any shares of common stock may not be made in the United Kingdom, except that an offer to the public in the United Kingdom of any shares of common stock may be made at any time under the following exemptions under the UK Prospectus Regulation:

a) to any legal entity which is a "qualified investor" as defined under the UK Prospectus Regulation;

S-19

Table of Contents

b) to fewer than 150 natural or legal persons (other than "qualified investors" as defined under the UK Prospectus Regulation), subject to obtaining the prior consent of the underwriters for any such offer; or

c) in any other circumstances falling within section 86 of the Financial Services and Markets Act 2000 (as amended, "FSMA"), provided that no such offer of shares of common stock shall result in a requirement for us or any underwriter to publish a prospectus pursuant to section 85 of the FSMA or a supplemental prospectus pursuant to Article 23 of the UK Prospectus Regulation and each person who initially acquires any shares of common stock or to whom any offer is made will be deemed to have represented, warranted and agreed to and with each of the underwriters and us that it is a qualified investor within the meaning of Article 2 of the UK Prospectus Regulation.

In the case of any shares of common stock being offered to a financial intermediary as that term is used in Article 1(4) of the UK Prospectus Regulation, each financial intermediary will also be deemed to have represented, warranted and agreed that the shares of common stock acquired by it in the offer have not been acquired on a non-discretionary basis on behalf of, nor have they been acquired with a view to their offer or resale to, persons in circumstances which may give rise to an offer of any shares of common stock to the public, other than their offer or resale in the United Kingdom to qualified investors as so defined or in circumstances in which the prior consent of the underwriters has been obtained to each such proposed offer or resale.

We, the underwriters and their affiliates will rely upon the truth and accuracy of the foregoing representations, warranties and agreements. Notwithstanding the above, a person who is not a "qualified investor" and who has notified the underwriters of such fact in writing may, with the prior consent of the underwriters, be permitted to acquire shares of common stock in the offer.

For the purposes of this provision, the expression an "offer to the public" in relation to any shares of common stock in the United Kingdom means the communication in any form and by any means of sufficient information on the terms of the offer and any shares of common stock to be offered so as to enable an investor to decide to purchase or subscribe for any shares of common stock.

This Prospectus is only being distributed to and is only directed at: (A) persons who are outside the United Kingdom; or (B) qualified investors who are also (i) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the "Order"), or (ii) high net worth companies, and other persons to whom it may lawfully be communicated, falling within Article 49(2)(a) to (d) of the Order (all such persons falling within (1)-(3) together being referred to as "relevant persons"). The shares of common stock are only available to, and any invitation, offer or agreement to subscribe, purchase or otherwise acquire the shares of common stock will be engaged in only with, relevant persons. Any person who is not a relevant person should not act or rely on this Prospectus or any of its contents.

Canada

The shares may be sold in Canada only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 Prospectus Exemptions or subsection 73.3(1) of the Securities Act (Ontario), and are permitted clients, as defined in National Instrument 31-103 Registration Requirements, Exemptions, and Ongoing Registrant Obligations. Any resale of the shares must be made in accordance with an exemption form, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus supplement (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory of these rights or consult with a legal advisor.

Table of Contents

Pursuant to section 3A.3 of National Instrument 33-105 Underwriting Conflicts (NI 33-105), the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

Hong Kong

The shares may not be offered or sold in Hong Kong by means of any document other than (i) in circumstances which do not constitute an offer to the public within the meaning of the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32 of the Laws of Hong Kong) ("Companies (Winding Up and Miscellaneous Provisions) Ordinance") or which do not constitute an invitation to the public within the meaning of the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong) ("Securities and Futures Ordinance"), or (ii) to "professional investors" as defined in the Securities and Futures Ordinance and any rules made thereunder, or (iii) in other circumstances which do not result in the document being a "prospectus" as defined in the Companies (Winding Up and Miscellaneous Provisions) Ordinance, and no advertisement, invitation or document relating to the shares may be issued or may be in the possession of any person for the purpose of issue (in each case whether in Hong Kong or elsewhere), which is directed at, or the contents of which are likely to be accessed or read by, the public in Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to shares which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" in Hong Kong as defined in the Securities and Futures Ordinance and any rules made thereunder.

Singapore

This prospectus supplement has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares may not be circulated or distributed, nor may the shares be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than (i) to an institutional investor (as defined under Section 4A of the Securities and Futures Act, Chapter 289 of Singapore (the "SFA")) under Section 274 of the SFA, (ii) to a relevant person (as defined in Section 275(2) of the SFA) pursuant to Section 275(1) of the SFA, or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions specified in Section 275 of the SFA or (iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA, in each case subject to conditions set forth in the SFA.

Where the shares are subscribed or purchased under Section 275 of the SFA by a relevant person which is a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor, the securities (as defined in Section 239(1) of the SFA) of that corporation shall not be transferable for 6 months after that corporation has acquired the shares under Section 275 of the SFA except: (1) to an institutional investor under Section 274 of the SFA or to a relevant person (as defined in Section 275(2) of the SFA), (2) where such transfer arises from an offer in that corporation's securities pursuant to Section 275(1A) of the SFA, (3) where no consideration is or will be given for the transfer, (4) where the transfer is by operation of law, (5) as specified in Section 276(7) of the SFA, or (6) as specified in Regulation 32 of the Securities and Futures (Offers of Investments) (Shares and Debentures) Regulations 2005 of Singapore ("Regulation 32")

Where the shares are subscribed or purchased under Section 275 of the SFA by a relevant person which is a trust (where the trustee is not an accredited investor (as defined in Section 4A of the SFA)) whose sole purpose is to hold investments and each beneficiary of the trust is an accredited investor, the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferable for 6 months after that trust has acquired the shares under Section 275 of the SFA except: (1) to an institutional investor under Section 274 of the SFA or to a relevant person (as defined in Section 275(2) of the SFA), (2) where such transfer arises from an offer that is

Table of Contents

made on terms that such rights or interest are acquired at a consideration of not less than S\$200,000 (or its equivalent in a foreign currency) for each transaction (whether such amount is to be paid for in cash or by exchange of securities or other assets), (3) where no consideration is or will be given for the transfer, (4) where the transfer is by operation of law, (5) as specified in Section 276(7) of the SFA, or (6) as specified in Regulation 32.

Japan

The securities have not been and will not be registered under the Financial Instruments and Exchange Act of Japan (Act No. 25 of 1948, as amended), or the FIEA. The securities may not be offered or sold, directly or indirectly, in Japan or to or for the benefit of any resident of Japan (including any person resident in Japan or any corporation or other entity organized under the laws of Japan) or to others for reoffering or resale, directly or indirectly, in Japan or to or for the benefit of any resident of Japan, except pursuant to an exemption from the registration requirements of the FIEA and otherwise in compliance with any relevant laws and regulations of Japan.

Pursuant to an agreement between us and the selling stockholder, and subject to the completion of this offering, we intend to purchase \$15 million of shares of common stock, or 434,783 shares, from the selling stockholder in a private transaction at a price per share equal to the public offering price. The closing of this offering is not conditioned upon the completion of the Share Repurchase. The closing of the Share Repurchase is contingent on the closing of this offering.

Pursuant to the Registration Rights Agreement, we have agreed to pay the selling stockholder's expenses incurred in connection with the offering, excluding underwriting discounts and commissions. The underwriters have agreed to reimburse us for certain expenses in connection with the offering. We have also agreed to reimburse the underwriters for certain of their expenses in an amount up to \$30,000.

We and the selling stockholder have agreed to indemnify the several underwriters against certain liabilities, including liabilities under the Securities Act of 1933.

The underwriters and their respective affiliates are full service financial institutions engaged in various activities, which may include sales and trading, commercial and investment banking, advisory, investment management, investment research, principal investment, hedging, market making, brokerage and other financial and non-financial activities and services. Certain of the underwriters and their respective affiliates have provided, and may in the future provide, a variety of these services to the issuer and to persons and entities with relationships with the issuer, for which they received or will receive customary fees and expenses.

In the ordinary course of their various business activities, the underwriters and their respective affiliates, officers, directors and employees may purchase, sell or hold a broad array of investments and actively trade securities, derivatives, loans, commodities, currencies, credit default swaps and other financial instruments for their own account and for the accounts of their customers, and such investment and trading activities may involve or relate to assets, securities and/or instruments of the issuer (directly, as collateral securing other obligations or otherwise) and/or persons and entities with relationships with the issuer. The underwriters and their respective affiliates may also communicate independent investment recommendations, market color or trading ideas and/or publish or express independent research views in respect of such assets, securities or instruments and may at any time hold, or recommend to clients that they should acquire, long and/or short positions in such assets, securities and instruments.

Table of Contents

LEGAL MATTERS

The validity of the shares of common stock being offered by this prospectus supplement and the accompanying prospectus and certain other legal matters will be passed upon for us and for the selling stockholder by Kirkland & Ellis LLP, Houston, Texas. Certain legal matters will be passed upon for the underwriters by Latham & Watkins LLP.

EXPERTS

The consolidated financial statements of Kodiak Gas Services, Inc. as of December 31, 2023 and 2022 and for each of the three years in the period ended December 31, 2023 incorporated by reference in this prospectus supplement have been so incorporated in reliance on the report of BDO USA, P.C., an independent registered public accounting firm given on the authority of said firm as experts in auditing and accounting.

The consolidated financial statements of CSI Compressco LP as of and for the years ended December 31, 2023 and 2022, and management's assessment of the effectiveness of internal control over financial reporting as of December 31, 2023, incorporated by reference in this prospectus and elsewhere in the registration statement have been so incorporated by reference in reliance upon the reports of Grant Thornton LLP, independent registered public accountants, upon the authority of said firm as experts in accounting and auditing.

Table of Contents

PROSPECTUS

KODIAK GAS SERVICES, INC.

Common Stock Preferred Stock Warrants Units

Up to 59,000,000 Shares of Common Stock Offered by the Selling Stockholders

This prospectus relates to the offer and sale from time to time, together or separately, in one or more offerings of common stock of Kodiak Gas Services, Inc. ("Kodiak", "we", "us" or the "Company"), \$0.01 par value per share ("Common Stock"), preferred stock ("Preferred Stock"), warrants to purchase Common Stock, Preferred Stock or any combination thereof ("Warrants") and units ("Units", and collectively with the Common Stock, Preferred Stock and Warrants, the "Securities"), by the Company. In addition, the selling stockholders named in this prospectus or any supplement to this prospectus may offer and sell up to 59,000,000 shares of our Common Stock from time to time in amounts, at prices and on terms that will be determined at the time of any such offering.

We are registering the offer and sale of the shares of the Common Stock owned by the selling stockholders to satisfy registration rights we have granted to the selling stockholders pursuant to a registration rights agreement dated as of July 3, 2023 (the "Registration Rights Agreement"). We have agreed to bear all of the expenses incurred in connection with the registration of the Common Stock covered by this prospectus. The selling stockholders will pay or assume brokerage commissions and similar charges, if any, incurred in the sale of the Common Stock.

Unless we inform you otherwise in a prospectus supplement or free writing prospectus, we intend to use the net proceeds from the sale of the Securities we are offering for general corporate purposes. We will not receive any proceeds from the offer or sale of the Common Stock by the selling stockholders pursuant to this prospectus. See "Selling Stockholders" for a more detailed discussion about the selling stockholders.

The Securities to which this prospectus relates may be offered and sold from time to time directly by us or the selling stockholders or alternatively through underwriters, broker dealers or agents. We or the selling stockholders, as applicable, will determine at what price we or the selling stockholders may sell the Common Stock offered by this prospectus, and such sales may be made at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale, or at negotiated prices. For additional information on the methods of sale that may be used by us or the selling stockholders, see the section entitled "*Plan of Distribution*."

We may amend or supplement this prospectus from time to time by filing amendments or supplements as required. You should carefully read this prospectus and any prospectus supplement or amendment before you invest. You also should read the documents we have referred you to in the "Where You Can Find More Information" section of this prospectus for information about us and our financial statements.

We have not, and the selling stockholders have not, authorized anyone to give you any information other than in this prospectus and the information incorporated by reference herein. We take no responsibility for, and can provide no assurances as to the reliability of, any other information that others may give you.

Our Common Stock is quoted on The New York Stock Exchange ("NYSE") under the symbol KGS. On July 8, 2024, the last reported sale price of Common Stock on the NYSE was \$26.67 per share. We will provide information in the prospectus supplement for the trading market, if any, for any Preferred Stock, Warrants or Units we may offer.

Our principal executive office is located at 9950 Woodloch Forest Drive, Suite 1900, The Woodlands, Texas 77380, and our telephone number is (936) 539-3300.

Investing in our Securities involves risks. You should carefully review the risks and uncertainties described under the heading "Risk Factors" contained on page 5 herein and in the applicable prospectus supplement and under similar headings in the other documents incorporated by reference into this prospectus.

NEITHER THE SECURITIES AND EXCHANGE COMMISSION NOR ANY STATE SECURITIES COMMISSION HAS APPROVED OR DISAPPROVED OF THESE SECURITIES OR PASSED UPON THE ACCURACY OR ADEQUACY OF THE DISCLOSURES IN THE PROSPECTUS, ANY REPRESENTATION TO THE CONTRARY IS A CRIMINAL OFFENSE.

The date of this prospectus is July 9, 2024

Table of Contents

TABLE OF CONTENTS

	Page
ABOUT THIS PROSPECTUS	1
WHERE YOU CAN FIND MORE INFORMATION	2
INFORMATION INCORPORATED BY REFERENCE	3
<u>OUR COMPANY</u>	4
RISK FACTORS	5
CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS	6
<u>USE OF PROCEEDS</u>	8
SELLING STOCKHOLDERS	9
PLAN OF DISTRIBUTION	11
DESCRIPTION OF CAPITAL STOCK	13
DESCRIPTION OF WARRANTS	20
DESCRIPTION OF UNITS	21
<u>LEGAL MATTERS</u>	22
<u>EXPERTS</u>	22

This prospectus is part of a registration statement that we have filed with the Securities and Exchange Commission (the "SEC") pursuant to which we or the selling stockholders named herein may, from time to time, offer and sell or otherwise dispose of the Securities covered by this prospectus. You should not assume that the information contained in this prospectus is accurate on any date subsequent to the date set forth on the front cover of this prospectus or that any information we have incorporated by reference is correct on any date subsequent to the date of the document incorporated by reference, even though this prospectus is delivered or the Securities are sold or otherwise disposed of on a later date. It is important for you to read and consider all information contained in this prospectus, including the documents incorporated by reference therein, in making your investment decision. You should also read and consider the information in the documents to which we have referred you under the caption "Where You Can Find More Information" in this prospectus.

We have not authorized anyone to provide any information or to make any representations other than those contained in this prospectus or in any free writing prospectuses we have prepared. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We are not, and the selling stockholders are not, making an offer to sell these Securities in any jurisdiction where an offer or sale is not permitted.

This prospectus contains forward-looking statements that are subject to a number of risks and uncertainties, many of which are beyond our control. Please read "Risk Factors" and "Cautionary Note Regarding Forward-Looking Statements."

i

Table of Contents

ABOUT THIS PROSPECTUS

This prospectus is part of a "shelf registration statement" on Form S-3 that we filed with the SEC, utilizing a "shelf" registration process. Under this shelf registration process, we may offer and sell from time to time, together or separately, in one or more offerings, any combination of the Securities described in this prospectus, and the selling stockholders named herein may offer and sell from time to time, in one or more offerings, shares of Common Stock as described in this prospectus.

This prospectus provides you with a general description of the Securities we or the selling stockholders may offer. Each time we or the selling stockholders offer Securities, we will provide a prospectus supplement accompanied by this prospectus. The prospectus supplement will contain specific information about the nature of the Company or the persons offering Securities and the terms of the Securities being offered at that time. The prospectus supplement may also add, update or change information contained in this prospectus. If there is any inconsistency between the information in this prospectus and any prospectus supplement, you should rely on the information in the prospectus supplement.

We have provided you only with the information contained in this prospectus, including information incorporated by reference in this prospectus and the accompanying prospectus supplement. We have not, and the selling stockholders have not, authorized anyone to give you any information other than in this prospectus and the information incorporated by reference herein. Neither we nor the selling stockholders take any responsibility for, and can provide no assurance as to the reliability of any other information that others may give you. Neither we nor the selling stockholders are making an offer to sell securities in any jurisdiction where the offer or sale of securities is not permitted. You should not assume that the information included in this prospectus, any applicable prospectus supplement, or the documents incorporated by reference herein is accurate as of any date other than their respective dates. Our business, financial condition, results of operations and prospects may have changed since those dates.

You should read carefully the entire prospectus and any applicable prospectus supplement, as well as the documents incorporated by reference in this prospectus, before making an investment decision.

When used in this prospectus, except where the context otherwise requires, the terms "we," "us," "our" and "the Company" refer to Kodiak Gas Services, Inc. and its consolidated subsidiaries.

Table of Contents

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a Registration Statement on Form S-3 to register the offer and sale of the Securities covered hereby. This prospectus, which forms part of the Registration Statement, does not contain all of the information included in that Registration Statement. For further information about us and the Securities covered by this prospectus, you should refer to the Registration Statement and its exhibits. Certain information is also incorporated by reference in this prospectus as described under "Incorporation of Certain Documents by Reference."

We are subject to the information and periodic reporting requirements of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and, in accordance therewith, file periodic reports, proxy statements and other information with the SEC. Such periodic reports, proxy statements and other information are available at the website of the SEC at http://www.sec.gov. We also furnish our stockholders with annual reports containing our financial statements audited by an independent registered public accounting firm and quarterly reports containing our unaudited financial information. We maintain a website at www.kodiakgas.com. You may access our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and amendments to those reports, filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act with the SEC free of charge at our website as soon as reasonably practicable after this material is electronically filed with, or furnished to, the SEC. The reference to our website or web address does not constitute incorporation by reference of the information contained at that site.

We have not authorized anyone to provide you with any information other than that contained in this prospectus or in a document to which we expressly have referred you. We take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. You should assume that the information appearing in this prospectus is accurate only as of the date on the front cover of this prospectus.

Table of Contents

INFORMATION INCORPORATED BY REFERENCE

The SEC allows us to incorporate by reference the information we file with it. This means that we can disclose information to you by referring you to those documents. The documents that have been incorporated by reference are an important part of the prospectus, and you should review that information in order to understand the nature of any investment by you in our shares of Common Stock. Information that we later provide to the SEC, and which is deemed to be "filed" with the SEC, will automatically update information previously filed with the SEC, and may update or replace information in this prospectus and information previously filed with the SEC. We incorporate by reference the following documents that we have filed with the SEC (other than any portions of these documents that were deemed to have been furnished and not filed in accordance with the SEC rules, including pursuant to Item 2.02 or Item 7.01 of any Current Report on Form 8-K, including any financial statements or exhibits related thereto and furnished pursuant to Item 9.01), unless otherwise indicated herein:

- our Annual Report on <u>Form 10-K</u> for the year ended December 31, 2023 filed on March 7, 2024;
- the description of our Common Stock contained in our <u>Form 8-A</u> filed on June 28, 2023, including any amendment to that Form that we may file in the future for the purpose of updating the description of our Common Stock;
- our Quarterly Report on Form 10-Q for the quarter ended March 31, 2024 filed on May 9, 2024;
- our <u>Definitive Proxy Statement</u> on Schedule 14A filed on March 25, 2024 and;
- our current reports on Form 8-K filed with the SEC on <u>January 23, 2024</u>, <u>February 2, 2024</u>, <u>March 8, 2024</u>, <u>April 1, 2024</u>, <u>May 3, 2024</u>,
 May 31, 2024, and <u>June 24, 2024</u>.

All documents subsequently filed by us pursuant to Section 13(a), 13(c), 14 or 15(d) of the Exchange Act, including all such documents we may file with the SEC after the date of the initial registration and prior to the effectiveness of the Registration Statement (excluding, in each case, any information deemed furnished rather than filed), shall be deemed to be incorporated by reference in this prospectus until the termination of each offering under this prospectus.

Upon request, we will provide to each person, including any beneficial owner, to whom this prospectus is delivered, a copy of any or all of the reports or documents that have been incorporated by reference in this prospectus. If you would like a copy of any of these documents, at no cost, please write or call us at:

Kodiak Gas Services, Inc. 9950 Woodloch Forest Drive, Suite 1900 The Woodlands, Texas 77380 (936) 539-3300

Any statement contained in a document which is incorporated by reference in this prospectus is automatically updated and superseded if information contained in the prospectus modifies or replaces this information.

Table of Contents

OUR COMPANY

Kodiak is the largest contract compression services provider in the continental United States with a revenue-generating fleet of approximately 4.3 million horsepower. We focus on providing contract compression and related services to oil and gas producers and midstream customers in high-volume gas gathering systems, processing facilities, multi-well gas lift applications and natural gas transmission systems. Shares of our Common Stock trade on the NYSE under the ticker symbol "KGS".

Our principal executive offices are located at 9950 Woodloch Forest Drive, Suite 1900, The Woodlands, Texas 77380, and our telephone number is (936) 539-3300. We maintain a website at www.kodiakgas.com. Information contained on, or accessible through, our website is not incorporated by reference in this prospectus.

4

Table of Contents

RISK FACTORS

Investing in the Securities described herein involves risk. We urge you to carefully consider the risk factors described in our most recent Annual Report on Form 10-K and any updates in our Quarterly Reports on Form 10-Q, together with any other SEC filings that are incorporated by reference in this prospectus and, if applicable, in any prospectus supplement used in connection with an offering of our Securities, as well as the information relating to us identified herein in "Cautionary Statement Regarding Forward-Looking Statements," before making an investment decision. Although we discuss key risks in our discussion of risk factors, new risks may emerge in the future, which may prove to be significant. Our subsequent filings with the SEC may contain amended and updated discussions of significant risks. We cannot predict future risks or estimate the extent to which they may affect our financial performance.

Table of Contents

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains "forward-looking statements" within the meaning of the safe harbor provisions of the U.S. Private Securities Litigation Reform Act of 1995. Forward-looking statements are neither historical facts nor assurances of future performance. Instead, they are based only on our current beliefs, expectations and assumptions regarding the future of our business, future plans and strategies, projections, anticipated events and trends, the economy and other future conditions. Forward-looking statements can be identified by words such as: "anticipate," "intend," "goal," "seek," "believe," "project," "estimate," "expect," "strategy," "future," "likely," "may," "should," "will" and similar references to future periods. Examples of forward-looking statements include, among others, statements we make regarding:

- · Expected operating results, such as revenue growth and earnings, and our ability to service our indebtedness;
- Anticipated levels of capital expenditures and uses of capital;
- Current or future volatility in the credit markets and future market conditions;
- Potential or pending acquisition transactions or other strategic transactions, the timing thereof, the receipt of necessary approvals to close such transactions, our ability to finance such transactions, and our ability to achieve the intended operational, financial and strategic benefits from any such transactions;
- Expected synergies and efficiencies to be achieved as a result of our acquisition of CSI Compressco LP ("CSI Compressco" and such acquisition, the "CSI Acquisition");
- Expectations regarding leverage and dividend profile as a result of the CSI Acquisition, including the amount and timing of future dividend payments;
- Expectations of the effect on our financial condition of claims, litigation, environmental costs, contingent liabilities, and governmental and regulatory investigations and proceedings;
- Production and capacity forecasts for the natural gas and oil industry;
- Strategy for customer retention, growth, fleet maintenance, market position and financial results;
- Our interest rate hedges; and
- Strategy for risk management.

Because forward-looking statements relate to the future, they are subject to inherent uncertainties, risks and changes in circumstances that are difficult to predict and many of which are outside of our control. Our actual results and financial condition may differ materially from those indicated in the forward-looking statements. Therefore, you should not place undue reliance on any of these forward-looking statements. Important factors that could cause our actual results and financial condition to differ materially from those indicated in the forward-looking statements include, among others, the following:

- A reduction in the demand for natural gas and oil;
- The loss of, or the deterioration of the financial condition of, any of our key customers;
- Nonpayment and nonperformance by our customers, suppliers or vendors;
- Competitive pressures that may cause us to lose market share;
- The structure of our Compression Operations contracts and the failure of our customers to continue to contract for services after expiration of the primary term;
- Our ability to successfully integrate any acquired businesses, including CSI Compressco, and realize the expected benefits thereof;

Table of Contents

- · Our ability to fund purchases of additional compression equipment;
- A deterioration in general economic, business, geopolitical or industry conditions, including as a result of the conflict between Russia and Ukraine and the Israel-Hamas War, inflation and slow economic growth in the United States;
- A downturn in the economic environment, as well as inflationary pressures;
- Tax legislation and administrative initiatives or challenges to our tax positions;
- The loss of key management, operational personnel or qualified technical personnel;
- Our dependence on a limited number of suppliers;
- The cost of compliance with existing and new governmental regulations, including climate change legislation;
- The cost of compliance with regulatory initiatives and stakeholders' pressures, including environmental, social and governance scrutiny;
- The inherent risks associated with our operations, such as equipment defects and malfunctions;
- Our reliance on third-party components for use in our information technology systems;
- Legal and reputational risks and expenses relating to the privacy, use and security of employee and client information;
- Threats of cyber-attacks or terrorism;
- Agreements that govern our debt contain features that may limit our ability to operate our business and fund future growth and also increase our exposure to risk during adverse economic conditions;
- Volatility in interest rates;
- Our ability to access the capital and credit markets or borrow on affordable terms to obtain additional capital that we may require;
- The effectiveness of our disclosure controls and procedures; and
- Such other factors set forth in Part I, Item 1A, "Risk Factors" of our Annual Report on Form 10-K for the fiscal year ended December 31, 2023, and Part I, Item 2, "Management's Discussion and Analysis of Financial Condition and Results of Operations" of our Quarterly Report on Form 10-Q for the quarterly period ended March 31, 2024.

Any forward-looking statement made by us in this prospectus is based only on information currently available to us and speaks only as of the date on which it is made. Except as may be required by applicable law, we undertake no obligation to publicly update any forward-looking statement whether as a result of new information, future developments or otherwise.

All forward-looking statements, expressed or implied, included in this prospectus are expressly qualified in their entirety by this cautionary statement. This cautionary statement should also be considered in connection with any subsequent written or oral forward-looking statements that we or persons acting on our behalf may issue.

Investors should note that we announce financial information in SEC filings. We may use the "Investors" section of our website (www.kodiakgas.com) to communicate with investors. It is possible that the financial and other information posted there could be deemed to be material information. The information on our website is not part of this prospectus.

Table of Contents

USE OF PROCEEDS

Unless we inform you otherwise in a prospectus supplement or free writing prospectus, we intend to use the net proceeds from the sale of Securities we are offering for general corporate purposes. This may include, among other things, additions to working capital, repayment or refinancing of existing indebtedness or other corporate obligations, financing of capital expenditures and acquisitions and investment in existing and future projects. Any specific allocation of the net proceeds of an offering of Securities to a specific purpose will be determined at the time of the offering and will be described in an accompanying prospectus supplement or free writing prospectus.

The selling stockholders may offer and sell up to an aggregate of 59,000,000 shares of Common Stock under this prospectus. See the section entitled, "Selling Stockholders." Accordingly, we will not receive any proceeds from the sales of Common Stock sold by the selling stockholders. We will bear the costs associated with the sale of any shares of Common Stock under this prospectus by the selling stockholders, other than underwriting fees, discounts and commissions.

Table of Contents

SELLING STOCKHOLDERS

This prospectus covers the offering for resale of up to an aggregate of 59,000,000 shares of Common Stock, that may be offered and sold from time to time under this prospectus by the selling stockholders identified below, subject to any appropriate adjustment as a result of any stock dividend, stock split or distribution, or in connection with a combination of shares, and any security into which such shares of Common Stock shall have been converted or exchanged in connection with a recapitalization, reorganization, reclassification, merger, consolidation, exchange, distribution or otherwise.

On July 3, 2023, we entered into the Registration Rights Agreement with the selling stockholders pursuant to which we were obligated to prepare and file a registration statement to permit the resale of certain shares of Common Stock held by the selling stockholders from time to time as permitted by Rule 415 promulgated under the Securities Act of 1933, as amended (the "Securities Act").

We have prepared the table, the paragraph immediately following this paragraph, and the related notes based on information supplied to us by the selling stockholders and such information is as of July 2, 2024 (except as otherwise noted). We have not sought to verify such information. We believe, based on information supplied by the selling stockholders, that except as may otherwise be indicated in the footnotes to the table below, the selling stockholders have sole voting and dispositive power with respect to the shares of Common Stock reported as beneficially owned by them. Because the selling stockholders identified in the table may sell some or all of the shares of Common Stock owned by them which are included in this prospectus, and because there are currently no agreements, arrangements or understandings with respect to the sale of any of the shares of Common Stock, no estimate can be given as to the number of the shares of Common Stock available for resale hereby that will be held by the selling stockholders upon termination of this offering. In addition, the selling stockholders may have sold, transferred or otherwise disposed of, or may sell, transfer or otherwise dispose of, at any time and from time to time, the shares of Common Stock it holds in transactions exempt from the registration requirements of the Securities Act after the date on which the selling stockholders provided the information set forth on the table below. We have, therefore, assumed for the purposes of the following table, that the selling stockholders will sell all of the shares of Common Stock beneficially owned by them that are covered by this prospectus. The selling stockholders are not obligated to sell any of the shares of Common Stock offered by this prospectus. The percent of beneficial ownership for the selling stockholders is based on 84,294,358 shares of Common Stock outstanding as of July 2, 2024, and, unless otherwise noted, does not take into account the 5,562,273 shares of Series A Preferred Stock issued and outstandi

	Shares of Common Stock			Shares of Common Stock	
	Beneficially Owned Prior		Shares of Common	Beneficially Owned After Completion	
	to the Offe	ering(1)	Stock Offered	of the Offering	
	Number	Percentage	Hereby	Number	Percentage
Selling stockholders:	·				
Frontier TopCo Partnership, L.P.	59,000,000	69.9%	59,000,000	0	_

(1) The amounts and percentages of Common Stock beneficially owned are reported on the basis of regulations of the SEC governing the determination of beneficial ownership of securities. Under the rules of the SEC, a person is deemed to be a "beneficial owner" of a security if that person has or shares voting power, which includes the power to vote or direct the voting of such security, or investment power, which includes the power to dispose of or to direct the disposition of such security. Under these rules, more than one person may be deemed to be a beneficial owner of the same securities, and a person may be deemed to be a beneficial owner of securities as to which such person has no economic interest.

Based on a Schedule 13G filed by Frontier TopCo Partnership, L.P. ("Kodiak Holdings") on February 12, 2024. Consists of shares of Common Stock held directly by Kodiak Holdings. Frontier Topco GP, LLC ("Frontier GP") is the general partner of Kodiak Holdings. EQT Infrastructure III SCSp ("EQT Infrastructure III") and EQT Infrastructure IV SCSp ("EQT Infrastructure IV") collectively own 100% of the membership interests in Frontier GP. EQT Fund Management S.a` r.l. ("EFMS") has exclusive

Table of Contents

responsibility for the management and control of the business and affairs of investment vehicles which constitute the majority of the total commitments to EQT Infrastructure III and EQT Infrastructure IV. As such, EFMS has the power to control Frontier GP's voting and investment decisions and may be deemed to have beneficial ownership of the securities held by Kodiak Holdings. EFMS is overseen by a board that acts by majority approval. The individual members of such board are Joshua Stone, Peter Veldman and Sara Huda. The registered address of Kodiak Holdings and Frontier GP is 108 Lakeland Ave, Dover, Kent County, Delaware, 19901 USA. The registered address of EFMS is 51A, Boulevard Royal, L-2449 Luxembourg, Grand Duchy of Luxembourg, which is also the mailing address of each of Kodiak Holdings and Frontier GP. Kodiak Holdings has pledged the shares it owns as collateral under that certain Amended and Restated Credit Agreement, dated as of May 19, 2022, as amended by that certain First Amendment, dated March 31, 2023, among Kodiak Gas Services, LLC, Frontier Intermediate Holding, LLC, the administrative agent, and the lenders party thereto, the obligations of which were assumed by Kodiak Holdings (and which were further assumed by a parent entity of Kodiak Holdings), and has granted the lenders thereunder certain consent rights over Kodiak Holdings' exercise of its rights under the Stockholders' Agreement (as defined below).

Table of Contents

PLAN OF DISTRIBUTION

As of the date of this prospectus, we have not determined any plan of distribution and we have not been advised by the selling stockholders as to any plan of distribution. Distributions of Common Stock by the selling stockholders, or by their partners, pledgees, donees (including charitable organizations), transferees or other successors in interest, may from time to time be offered for sale either directly by such individuals, or through underwriters, dealers or agents or on any exchange on which the Common Stock may from time to time be traded, in the over-the-counter market, or in independently negotiated transactions or otherwise. The methods by which the Securities may be sold by us or the selling stockholders include:

- privately negotiated transactions;
- underwritten transactions;
- exchange distributions and/or secondary distributions;
- in market transactions on any national securities exchange, transactions other than on exchanges or sales in the over-the-counter market;
- ordinary brokerage transactions and transactions in which the broker solicits purchasers;
- broker-dealers may agree with the selling stockholders to sell a specified number of such shares at a stipulated price per share;
- a block trade (which may involve crosses) in which the broker or dealer so engaged will attempt to sell the Securities as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker or dealer as principal and resale by such broker or dealer for its own account pursuant to this prospectus;
- short sales:
- through the writing of options on the shares or other hedging transactions, whether or not the options or such other derivative securities are listed on an exchange;
- through the distributions of the shares by the selling stockholders to their partners, members or stockholders;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

We or the selling stockholders may also sell shares of Common Stock under Rule 144 under the Securities Act, in each case if available, rather than under this prospectus.

Such transactions may be effected by us or the selling stockholders at market prices prevailing at the time of sale or at negotiated prices. We or the selling stockholders may effect such transactions by selling the Securities to underwriters or to or through broker-dealers, and such underwriters or broker-dealers may receive compensation in the form of discounts or commissions from us or the selling stockholders and may receive commissions from the purchasers of the securities for whom they may act as agent. We or the selling stockholders may agree to indemnify any underwriter, broker-dealer or agent that participates in transactions involving sales of the Securities against certain liabilities, including liabilities arising under the Securities Act. We have agreed to register the Common Stock for sale under the Securities Act and to indemnify the selling stockholders and each person who participates as an underwriter in the offering of the Common Stock against certain civil liabilities, including certain liabilities under the Securities Act.

In connection with sales of the Common Stock under this prospectus, the selling stockholders may enter into hedging transactions with broker-dealers, who may in turn engage in short sales of the Common Stock in the

Table of Contents

course of hedging the positions they assume. The selling stockholders also may sell Common Stock short and deliver them to close their short positions, or loan or pledge the securities to broker-dealers that in turn may sell them.

The selling stockholders may from time to time pledge or grant a security interest in some or all of the Common Stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell Common Stock from time to time under this prospectus, or under an amendment to this prospectus under Rule 424 or other applicable provision of the Securities Act amending the list of selling stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus.

There can be no assurances that the selling stockholders will sell any or all of the Common Stock offered under this prospectus.

Table of Contents

DESCRIPTION OF CAPITAL STOCK

The following description of the Company's capital stock is not complete and may not contain all the information you should consider before investing in the Company's capital stock. This description is summarized from, and qualified in its entirety by reference to, our Amended and Restated Certificate of Incorporation (the "Charter") and our Second Amended and Restated Bylaws (the "Bylaws"), which have been publicly filed with the SEC. See "Where You Can Find More Information" and "Information Incorporated by Reference."

Authorized Capitalization

The Charter provides that the Company is authorized to issue 800,000,000 shares of capital stock, divided into two classes consisting of (a) 750,000,000 shares of Common Stock and (b) 50,000,000 shares of Preferred Stock, 6,000,000 of which are currently designated as Series A Preferred Stock, par value of \$0.01 per share (the "Series A Preferred Stock")

Common Stock

As of July 2, 2024, there were 84,294,358 shares of Common Stock issued and outstanding.

Voting Rights

Each holder of Common Stock, as such, is entitled to one vote for each share of Common Stock held of record by such holder on all matters on which stockholders generally are entitled to vote. Notwithstanding the foregoing, to the fullest extent permitted by law, holders of Common Stock, as such, have no voting power with respect to, and are not entitled to vote on, any amendment to the Charter (including any Certificate of Designation relating to any series of Preferred Stock) that relates solely to the terms of one or more outstanding series of Preferred Stock if the holders of such affected series are entitled, either separately or together with the holders of one or more other such series, to vote thereon pursuant to the Charter (including any Certificate of Designation relating to any series of Preferred Stock) or pursuant to the Delaware General Corporation Law (the "DGCL"). Except as otherwise provided in the Charter or required by applicable law, the holders of Common Stock shall vote together as a single class (or, if the holders of one or more series of Preferred Stock (such as the Series A Preferred Stock) are entitled to vote together with the holders of Common Stock, as a single class with the holders of such other series of Preferred Stock) on all matters submitted to a vote of the stockholders generally.

Exchange Rights

Subject to certain limitations, each common unit ("OpCo Unit") of Kodiak Gas Services, LLC ("Kodiak Services") held by an electing unitholder ("Electing Unitholder") is redeemable for either, at Kodiak Services' election, (i) one share of Common Stock (together with the cancellation of one share of Series A Preferred Stock), subject to conversion rate adjustments for stock splits, stock dividends, reclassification and other similar transactions, or (ii) an equivalent amount of cash, pursuant to the terms of the Sixth Amended and Restated Limited Liability Company Agreement of Kodiak Services (the "OpCo LLC Agreement"). Subject to certain exceptions in the OpCo LLC Agreement, Electing Unitholders are not be able to sell, transfer or redeem OpCo Units and Series A Preferred Stock prior to September 29, 2024 (180 days following the consummation of the CSI Acquisition).

Dividends and Liquidation

Subject to the rights and preferences of any Preferred Stock that the Company may issue in the future (including, with respect to distributions in liquidation, the Series A Preferred Stock), the holders of Common Stock are entitled to receive:

• dividends as may be declared by the board of directors of the Company (the "Board"); and

Table of Contents

· all of the Company's assets available for distribution to stockholders in liquidation, pro rata, based on the number of shares held.

No redemption or sinking fund provisions is applicable to the Common Stock. All outstanding shares of Common Stock are fully paid and non-assessable.

Preferred Stock

As of July 2, 2024, there were 5,562,273 shares of Preferred Stock issued and outstanding.

Authorized and unissued shares of Preferred Stock may be issued from time to time in one or more additional series as the Board, by resolution or resolutions, may from time to time determine, each of said series to be distinctively designated. The voting powers, preferences and relative, participating, optional and other special rights, and the qualifications, limitations or restrictions thereof, if any, of each such series of Preferred Stock may differ from those of any and all other series of Preferred Stock (including the Series A Preferred Stock) at any time outstanding, and, subject to certain exceptions set forth in the Charter, and applicable law, the Board may fix or alter, by resolution or resolutions, the designation, number, voting powers, preferences and relative, participating, optional and other special rights, and the qualifications, limitations and restrictions thereof, of each series of Preferred Stock.

Series A Preferred Stock

Dividends

Except with respect to dividends in connection with the adoption of a "poison pill" or similar shareholders rights plan, the holders of Series A Preferred Stock will not be entitled to receive any dividends (including cash, stock or property) in respect of their Series A Preferred Stock. However, in the event of a dividend to holders of shares of Common Stock in the form of shares of Common Stock or rights to acquire shares of Common Stock, the holders of Series A Preferred Stock will be entitled to simultaneously receive a dividend of Series A Preferred Stock or rights to acquire Series A Preferred Stock, in each case in the same proportion and manner.

Liquidation Preference

Any shares of Series A Preferred Stock offered hereby will be fully paid and nonassessable. In addition, in the event of any voluntary or involuntary liquidation, dissolution or winding-up of the Company, each holder of Series A Preferred Stock will be entitled to receive out of the assets of the Company available for distribution to the Company's stockholders, before any distribution of assets is made on shares of Common Stock, an amount equal to \$0.01 per share of Series A Preferred Stock. Neither the voluntary sale, conveyance, exchange or transfer, for cash, shares of stock, securities or other consideration, of all or substantially all of the Company's property or assets, nor the merger or consolidation of the Company with or into any corporation or other entity or the merger or consolidation of any corporation or other entity with or into the Company will be deemed to be a voluntary or involuntary liquidation, dissolution of winding-up of the Company.

Voting Rights

Each holder of Series A Preferred Stock will be entitled to one vote for each share of Series A Preferred Stock on all matters submitted to a vote of the holders of Common Stock, as adjusted to account for any subdivision or combination of shares of Common Stock. Except as otherwise provided in the Charter or required by applicable law, the holders of the Series A Preferred Stock will vote together as a single class with the holders of Common Stock on all matters submitted to a vote of the Company's stockholders generally.

Merger or Consolidation

In the event of a merger or consolidation of the Company with or into another entity (whether or not the Company is the surviving entity) or any other transaction in which shares of Common Stock are exchanged for or

Table of Contents

converted into other stock or securities, or the right to receive cash and/or any other property, the holders of Series A Preferred Stock will not be entitled to receive any economic consideration in respect of the Series A Preferred Stock.

Transfer Restrictions

To the extent that any OpCo Units of Kodiak Services are transferred to the Company or Kodiak Services pursuant to a redemption in accordance with the OpCo LLC Agreement, then simultaneous with that transfer, an equal number of shares of Series A Preferred Stock registered in the name of the transferor will automatically and without further action on the part of the Company or that transferor be transferred to the Company and will no longer be outstanding. Subject to the foregoing and certain exceptions, the transfer of any OpCo Units pursuant to the terms of the OpCo LLC Agreement will result in the automatic transfer of an equal number of shares of Series A Preferred Stock from the same transferor to the same transferee.

Other Series of Preferred Stock

If we offer other series of Preferred Stock under this prospectus, a prospectus supplement relating to the particular series of Preferred Stock offered will include the specific terms of those Preferred Stock, including, among other things, the following:

- the designation, stated value, and liquidation preference of the Preferred Stock and the number of Preferred Stock to constitute the series;
- the number of shares of Preferred Stock to be offered:
- the public offering price at which the Preferred Stock will be issued;
- any sinking fund provisions of the Preferred Stock;
- the voting rights, if any, of the Preferred Stock;
- whether the Preferred Stock will be redeemable and, if so, the price and the terms and conditions on which the Preferred Stock may be redeemed, including the time during which the Preferred Stock may be redeemed and any accumulated dividends thereof, if any, that the holders of the Preferred Stock will be entitled to receive upon the redemption thereof;
- the terms and conditions, if any, on which the Preferred Stock will be convertible into, or exchangeable for, any other class or series, including the price or prices or the rate or rates of conversion or exchange and the method, if any, of adjusting the same; and
- any additional designations, preferences, rights, powers, duties and restrictions of the Preferred Stock.

The applicable prospectus supplement relating to any such Preferred Stock we offer will also include a discussion of certain material U.S. federal income tax consequences relating to ownership of the Preferred Stock (other than those consequences described in this prospectus).

The particular terms of any series of Preferred Stock will also be described in a certificate of designation or amendment to our charter, which will be filed as an exhibit to or incorporated by reference in this prospectus at or before the time of issuance of any such series of Preferred Stock.

The transfer agent and registrar for the any other series of Preferred Stock will be designated in the applicable prospectus supplement.

Anti-Takeover Provisions

Notwithstanding the opt out from Section 203 of the DGCL, some provisions of the Charter and the Bylaws could make certain change of control transactions more difficult, including acquisitions of the Company by means of a tender offer, a proxy contest or otherwise. These provisions may also have the effect of preventing

Table of Contents

changes in the Board. It is possible that these provisions could make it more difficult to accomplish or could deter transactions that stockholders may otherwise consider to be in their best interest or in the Company's best interests, including transactions that might result in a premium over the market price for our Common Stock. Therefore, these provisions could adversely affect the price of our Common Stock.

These provisions, summarized below, are intended to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed to encourage persons seeking to acquire control of the Company to first negotiate with the Board. The Company believes that the benefits of increased protection and the Company's potential ability to negotiate with the proponent of an unsolicited proposal to acquire or restructure the Company arising from such provisions outweigh the disadvantages of discouraging these proposals because, among other things, negotiation of these proposals could result in an improvement of their terms.

Opt Out of Section 203 of the DGCL

In the Charter, the Company elected not to be subject to the provisions of Section 203 of the DGCL regulating corporate takeovers. In general, those provisions, if applicable, would prohibit a Delaware corporation, including those whose securities are listed for trading on the NYSE, from engaging in any business combination with any interested stockholder for a period of three years following the time that the stockholder became an interested stockholder, unless:

- the transaction that resulted in the stockholder becoming an interested stockholder, or the business combination, is approved by the board of directors before the time the interested stockholder attained that status;
- upon consummation of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced; or
- on or after the date the interested stockholder attained that status, the business combination is approved by the board of directors and authorized at a meeting of stockholders by at least two-thirds of the outstanding voting stock that is not owned by the interested stockholder.

Our Charter and Bylaws

Among other things, our Charter and Bylaws:

- establish advance notice procedures with regard to stockholder proposals relating to the nomination of candidates for election as directors or business to be brought before meetings of the Company's stockholders. These procedures provide that notice of stockholder proposals must be timely delivered to the Company's corporate secretary prior to the meeting at which the action is to be taken. Generally, to be timely in connection with an annual meeting, notice must be delivered to the Company's corporate secretary not less than 90 days nor more than 120 days prior to the first anniversary of the date of the Company's proxy statement released to the stockholders for the preceding year's annual meeting. The Bylaws specify the requirements as to form and content of such stockholders' notices. These requirements may deter stockholders from bringing matters before the stockholders at an annual or special meeting;
- authorize the Board to issue undesignated Preferred Stock. This ability makes it possible for the Board to issue, without stockholder approval, Preferred Stock with voting or other rights or preferences that could impede the success of any attempt to change control of the Company. These and other provisions may have the effect of deferring hostile takeovers or delaying changes in control or management of the Company;
- provide that, subject to the rights of any holders of Preferred Stock the authorized number of directors may be changed only by resolution of the Board;

Table of Contents

• provide that, if EQT AB (publ), a Swedish public limited liability company, and its affiliates, subsidiaries, successors and assigns ("EQT"), beneficially owns, in the aggregate, less than 35% of the voting power of the stock of the Company entitled to vote generally in the election of directors, any action required or permitted to be taken by the stockholders of the Company must be effected at a duly called annual or special meeting of such holders and may not be effected by any consent in writing by such holders, subject to the rights of the holders of any series of Preferred Stock with respect to such series;

- provide that, subject to the Stockholders' Agreement, all vacancies, including newly created directorships, shall, except as otherwise required with regards to rights granted to holders of Preferred Stock, except as otherwise required by law or, if applicable, the rights of holders of a series of Preferred Stock, be filled by the affirmative vote of a majority of the directors then in office, even if less than a quorum, a sole remaining director, or the stockholders and that, at any time when EQT beneficially owns, in the aggregate, less than 35% in voting power of the stock of the Company entitled to vote generally in the election of directors, all vacancies, including newly created directorships, occurring in the Board shall be filled only by a majority of the directors then in office, although less than a quorum, or by a sole remaining director (and not by stockholders);
- provide that, except as otherwise required by law and subject to the rights of the holders of any series of Preferred Stock, special meetings of the stockholders may be called only by or at the direction of the Board or the Chairman of the Board; provided, however, that at any time when EQT beneficially owns, in the aggregate, at least 35% in voting power of the stock of the Company entitled to vote generally in the election of directors, special meetings may also be called by or at the direction of the Board or the Chairman of the Board at the request of EOT:
- provide that, the Board shall be divided into three classes of directors, with each class as nearly equal in number as possible, serving staggered three-year terms, other than directors which may be elected by holders of Preferred Stock, if any and that, at any time when EQT beneficially owns, in the aggregate, less than 35% in voting power of the stock of the Company entitled to vote generally in the election of directors, directors may be removed only for cause and only by the affirmative vote of the holders of at least two thirds in voting power of all the then-outstanding shares of stock of the Company entitled to vote thereon, voting together as a single class. This system of electing and remaining directors may tend to discourage a third party from making a tender offer or otherwise attempting to obtain control of the Company because it generally makes it more difficult for stockholders to replace a majority of the directors:
- provide that, the Company generally renounces any interest or expectancy in any business opportunity (existing and future) that might be a
 corporate opportunity, including one that involves any aspect of the energy business or industry and that may be from time to time
 presented to EQT or certain other persons, and that such persons have no obligation to offer the Company those investments or
 opportunities;
- provide that, if EQT beneficially owns, in the aggregate, less than 35% in voting power of the stock of the Company entitled to vote generally in the election of directors, the Bylaws may be amended by stockholders, and certain provisions of the Charter may be amended, only with the affirmative vote of the holders of at least two-thirds in voting power of all the then-outstanding shares of stock of the Company entitled to vote thereon.

Forum Selection

The Charter provides that unless the Company consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware will, to the fullest extent permitted by applicable law, be the sole and exclusive forum for:

• any derivative action or proceeding brought on the Company's behalf;

Table of Contents

- any action asserting a claim of breach of a fiduciary duty owed by any of the Company's directors, officers, or employees to the Company
 or the Company's stockholders;
- any action asserting a claim against the Company or any director or officer of the Company arising pursuant to any provision of the DGCL, the Charter or the Bylaws; or
- any action asserting a claim governed by the internal affairs doctrine.

The Charter further provides that, unless the Company consents in writing to the selection of an alternative forum, the federal district courts of the United States shall be the exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act or the Exchange Act.

The Charter also provides that, to the fullest extent permitted by law, any person purchasing or otherwise acquiring any interest in shares of the Company's capital stock will be deemed to have notice of, and to have consented to, these forum selection provisions. Although the Company believes these provisions benefit the Company by providing increased consistency in the application of law for the specified types of actions and proceedings, the provisions may have the effect of discouraging lawsuits against the Company's directors, officers, and employees. The enforceability of similar exclusive forum provisions in other companies' certificates of incorporation has been challenged in legal proceedings, and it is possible that, in connection with one or more actions or proceedings described above, a court could rule that this provision in the Charter is inapplicable or unenforceable.

Stockholders' Agreement

The Stockholders' Agreement, dated as of July 3, 2023, by and among the Company, Kodiak Holdings and the other parties thereto (the "Stockholders' Agreement"), provides that, subject to compliance with applicable law and stock exchange rules, for so long as Kodiak Holdings and its affiliates beneficially own at least 35% of the Company's Common Stock then outstanding, it shall be entitled to designate two directors to the Board; and for so long as Kodiak Holdings and its affiliates beneficially own at least 10% of the Company's Common Stock then outstanding, it shall be entitled to designate at least one director. So long as Kodiak Holdings has the right to designate directors to the Board, it will also have the right to appoint the same number of the Board observers, who will be entitled to attend all meetings of the Board in a non-voting, observer capacity.

For so long as Kodiak Holdings beneficially owns at least 35% of outstanding Common Stock, the Company and its subsidiaries may not, without the approval of Kodiak Holdings, take any of the following actions:

- change the size of the Board;
- amend, restate, modify or waive the Charter or Bylaws;
- enter into voluntary liquidation or dissolution, commence bankruptcy or insolvency proceedings, adopt a plan with respect to any of the foregoing or decide not to oppose any similar proceeding commenced by a third party;
- consummate a transaction that would result in a change of control of the Company or a sale of all or substantially all of the Company's
 assets;
- incur debt for borrowed money (or liens securing such debt) in excess of \$50 million, including incremental incurrences under existing debt facilities;
- authorize, create (by way of reclassification, merger, consolidation or otherwise) or issue in excess of \$25 million of any equity securities of any kind (other than pursuant to any equity compensation plan approved by the compensation committee or intra-company issuances among the Company and its subsidiaries), including any designation of the rights (including special voting rights) of one or more classes of Preferred Stock;

Table of Contents

- modify the Company's dividend policy; and
- sell, transfer or otherwise dispose of the Company's assets not in the ordinary course of business in a transaction or series of transactions with a fair market value in excess of \$100 million.

Limitation of Liability and Indemnification of Officers and Directors

As permitted by Section 145 of the DGCL, the Bylaws provide that:

- the Company shall indemnify the Company's directors and executive officers to the fullest extent permitted by the DGCL, subject to limited exceptions, and that the Company may indemnify other officers, employees or other agents;
- the Company shall advance expenses to the Company's directors and executive officers in connection with a legal proceeding to the fullest extent permitted by the DGCL, subject to limited exceptions; and
- the rights provided in the Bylaws are not exclusive.

Any amendment to, or repeal of, these provisions will not eliminate or reduce the effect of these provisions in respect of any act, omission or claim that occurred or arose prior to that amendment or repeal. If the DGCL is amended to provide for further limitations on the personal liability of directors or officers of corporations, then the personal liability of the Company's directors and officers will be further limited to the fullest extent permitted by the DGCL.

Table of Contents

DESCRIPTION OF WARRANTS

We may issue Warrants for the purchase of our Common Stock, Preferred Stock or any combination thereof. Warrants may be issued independently or together with our securities offered by any prospectus supplement and may be attached to or separate from any such offered securities. Each series of Warrants will be issued under a separate warrant agreement to be entered into between us and a bank or trust company, as warrant agent, all as set forth in the prospectus supplement relating to the particular issue of Warrants. The warrant agent will act solely as our agent in connection with the Warrants and will not assume any obligation or relationship of agency or trust for or with any holders of Warrants or beneficial owners of Warrants. The following summary of certain provisions of the Warrants does not purport to be complete and is subject to, and is qualified in its entirety by reference to, all provisions of the warrant agreements.

You should refer to the prospectus supplement relating to a particular issue of Warrants for the terms of and information relating to the Warrants, including, where applicable:

- (1) the number of securities purchasable upon exercise of the Warrants and the price at which such securities may be purchased upon exercise of the Warrants;
- (2) the date on which the right to exercise the Warrants commences and the date on which such right expires (the "Expiration Date");
- (3) the United States federal income tax consequences applicable to the Warrants;
- (4) the amount of the Warrants outstanding as of the most recent practicable date; and
- (5) any other terms of the Warrants.

Warrants will be offered and exercisable for United States dollars only. Warrants will be issued in registered form only. Each Warrant will entitle its holder to purchase such number of securities at such exercise price as is in each case set forth in, or calculable from, the prospectus supplement relating to the Warrants. The exercise price may be subject to adjustment upon the occurrence of events described in such prospectus supplement. After the close of business on the Expiration Date (or such later date to which we may extend such Expiration Date), unexercised Warrants will become void. The place or places where, and the manner in which, Warrants may be exercised will be specified in the prospectus supplement relating to such Warrants.

Prior to the exercise of any Warrants, holders of the Warrants will not have any of the rights of holders of securities, including the right to receive payments of any dividends on the securities purchasable upon exercise of the Warrants, or to exercise any applicable right to vote.

Table of Contents

DESCRIPTION OF UNITS

We may issue Units of Securities consisting of one or more of the following Securities: Common Stock, Preferred Stock, Warrants or any combination thereof. We may evidence each series of Units issued by unit certificates that we will issue under a separate agreement. We may enter into unit agreements with a unit agent. Each unit agent will be a bank or trust company that we select. You should read the particular terms of these documents, which will be described in more detail in the applicable prospectus supplement.

If we offer any Units, certain terms of that series of Units will be described in the applicable prospectus supplement, including, without limitation, the following, as applicable:

- the title of the series of Units;
- identification and description of the separate constituent securities comprising the Units;
- the price or prices at which the Units will be issued;
- the date, if any, on and after which the constituent Securities comprising the Units will be separately transferable;
- if appropriate, a discussion of material United States federal income tax considerations; and
- any other terms of the Units and their constituent Securities.

Table of Contents

LEGAL MATTERS

Certain legal matters in connection with the Securities offered hereby will be passed upon for us by Kirkland & Ellis LLP, Houston, Texas.

EXPERTS

The consolidated financial statements of Kodiak Gas Services, Inc. as of December 31, 2023 and 2022 and for each of the three years in the period ended December 31, 2023 incorporated by reference in this Prospectus and in the Registration Statement have been so incorporated in reliance on the report of BDO USA, P.C., an independent registered public accounting firm given on the authority of said firm as experts in auditing and accounting.

The consolidated financial statements of CSI Compressco LP as of and for the years ended December 31, 2023 and 2022, and management's assessment of the effectiveness of internal control over financial reporting as of December 31, 2023, incorporated by reference in this prospectus and elsewhere in the registration statement have been so incorporated by reference in reliance upon the reports of Grant Thornton LLP, independent registered public accountants, upon the authority of said firm as experts in accounting and auditing.

Table of Contents

5,708,885 shares



Kodiak Gas Services, Inc.

Common Stock

PROSPECTUS SUPPLEMENT

Barclays
Goldman Sachs & Co. LLC
J.P. Morgan
BofA Securities
Mizuho
Raymond James
RBC Capital Markets
Rothschild & Co
Stifel

Truist Securities

TPH&Co.

November 14, 2024