RSP Permian, Inc. Form S-3ASR March 17, 2015

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As filed with the Securities and Exchange Commission on March 17, 2015

Registration No. 333-

UNITED STATES SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM S-3

REGISTRATION STATEMENT UNDER THE SECURITIES ACT OF 1933

RSP PERMIAN, INC.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of incorporation or organization)

90-1022997

(I.R.S. Employer Identification Number)

3141 Hood Street, Suite 500 Dallas, Texas 75219 (214) 252-2700

 $(Address, including\ zip\ code, and\ telephone\ number, including\ area\ code, of\ registrant's\ principal\ executive\ offices)$

James E. Mutrie Vice President and General Counsel 3141 Hood Street, Suite 500 Dallas, Texas 75219 (214) 252-2700

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copies to: Douglas E. McWilliams Christopher G. Schmitt Vinson & Elkins L.L.P. 1001 Fannin Street, Suite 2500

Houston, Texas 77002

Approximate date of commencement of proposed sale of the securities to the public: From time to time after the effective date of this registration statement.

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box. o

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, other than securities offered only in connection with dividend or interest reinvestment plans, check the following box. ý

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a registration statement pursuant to General Instruction I.D. or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer o

Accelerated filer o

Non-accelerated filer ý

Smaller reporting company o

(Do not check if a smaller reporting company)

CALCULATION OF REGISTRATION FEE

Title of Each Class of Securities	Amount to be Proposed Maximum Offering Price per		Proposed Maximum Aggregate Offering	Amount of	
to be Registered	Registered	Share	Price	Registration fee	
Primary Offering:					
Common Stock, \$0.01 par value per share	(1)	(1)	(1)	(2)	
Secondary Offering:					
Common Stock, \$0.01 par value per share	4,600,000	\$28.36(3)	\$130,456,000.00(3)	\$15,158.99	

- (1)

 There is being registered hereunder an indeterminate number of shares of common stock as may be issued and sold, from time to time, by the registrant at indeterminate prices.
- (2)
 Pursuant to Rules 456(b) and 457(r) under the Securities Act of 1933, as amended, the registrant is deferring payment of the registration fees for all securities that may be offered by the registrant.
- The proposed maximum offering price per share and the proposed maximum aggregate offering price were estimated solely for purposes of calculating the registration fee, based on the average of the high and low prices for the registrant's common stock as quoted on the New York Stock Exchange on March 10, 2015, in accordance with Rule 457(c) under the Securities Act of 1933, as amended.

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PROSPECTUS

RSP Permian, Inc.

Common Stock

By this prospectus, we may offer and sell, from time to time in one or more offerings, our common stock at prices and on terms that will be determined at the time of any such offerings. This prospectus may also be used by the selling stockholders named in this prospectus in connection with resales, from time to time in one or more offerings, of up to 4,600,000 shares of our common stock held by such selling stockholders at prices and on terms that will be determined at the time of any such offerings. We refer to our common stock that may be offered by us or the selling stockholders pursuant to this prospectus and any applicable prospectus supplement collectively as the "securities."

We will not receive any proceeds from the sale of shares of common stock to be offered by the selling stockholders. However, we will pay the expenses, other than underwriting discounts and commissions, associated with the sale of shares by the selling stockholders.

This prospectus describes some of the general terms that may apply to our common stock. Each time any common stock is offered pursuant to this prospectus, we will provide a prospectus supplement containing more specific information about the offering, including the number of shares of our common stock to be sold by us and/or the selling stockholders. The prospectus supplement may also add, update or change information contained in this prospectus. We may also authorize one or more free writing prospectuses to be provided to you in connection with these offerings. You should read this prospectus, the applicable prospectus supplement and any related free writing prospectus, as well as the documents incorporated by reference herein or therein, carefully before you make your investment decision.

The shares of our common stock may be sold at a fixed price or prices, which may be changed, at market prices prevailing at the time of sale, at prices related to such prevailing market prices or at a negotiated price. The shares of our common stock offered by this prospectus and any accompanying prospectus supplement may be offered by us or the selling stockholders directly to purchasers or to or through underwriters, brokers or dealers or other agents. The prospectus supplement for each offering will describe in detail the plan of distribution for that offering and will set forth the names of any underwriters, brokers or dealers or agents involved in the offering and any applicable fees, commissions or discounts.

Our common stock is listed on the New York Stock Exchange under the symbol "RSPP."

Investing in our common stock involves risks. See "Risk Factors" on page 2 of this prospectus, as well as those contained in the accompanying prospectus supplement and the documents incorporated by reference herein or therein, for a discussion of factors you should consider before buying shares of our common stock.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of the securities described herein or passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.

Prospectus dated March 17, 2015

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Neither we nor the selling stockholders have authorized anyone to provide any information or to make any representations other than those contained or incorporated by reference in this prospectus, any accompanying prospectus supplement or any free writing prospectus 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. This prospectus is an offer to sell only the shares of common stock offered hereby and only under circumstances and in jurisdictions where it is lawful to do so. The information contained or incorporated by reference in this prospectus is current only as of its date.

ABOUT THIS PROSPECTUS

This prospectus is part of an automatic shelf registration statement that we filed with the Securities and Exchange Commission (the "SEC") as a "well-known seasoned issuer" as defined in Rule 405 under the Securities Act of 1933, as amended (the "Securities Act"). Under the automatic shelf registration process, we and the selling stockholders named herein may offer and sell, from time to time, shares of our common stock.

This prospectus provides you with a general description of the common stock that we or any selling stockholder named herein may offer. Each time we or any selling stockholder offer to sell common stock, we will provide a prospectus supplement that will contain specific information about the terms of that offering. The prospectus supplement that accompanies this prospectus may describe, as applicable: the public offering price, the price paid for the securities, the net proceeds and the other specific terms related to the offering of these securities. We may also authorize one or more free writing prospectuses to be provided to you that may contain material information relating to these offerings. The prospectus supplement and any related free writing prospectus may also add to, update or change information contained in this prospectus or in any documents that we have incorporated by reference into this prospectus and, accordingly, to the extent inconsistent, information in this prospectus is superseded by the information in the prospectus supplement or any related free writing prospectus.

This prospectus does not contain all of the information included in the registration statement. The registration statement filed with the SEC includes or incorporates by reference exhibits that provide more details about the matters discussed in this prospectus. You should carefully read this prospectus, the related exhibits filed with the SEC and any prospectus supplement, together with the additional information described below under the headings "Where You Can Find Additional Information" and "Incorporation of Documents by Reference."

No offer of these securities will be made in any jurisdiction where the offer is not permitted.

As used in this prospectus, unless the context otherwise requires, references to the "Company," "RSP," "we," "us" and "our" refer to RSP Permian, Inc. and, where appropriate, its subsidiary, RSP Permian, L.L.C.

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Forward-looking statements may include statements about:

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

The information in this prospectus, including in the documents incorporated by reference herein, includes forward-looking statements within the meaning of Section 27A of the Securities Act, Section 21E of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), and the Private Securities Litigation Reform Act of 1995. All statements, other than statements of historical fact contained in this prospectus and the documents incorporated by reference into it, regarding our strategy, future operations, financial position, estimated revenues and losses, projected costs, prospects, plans and objectives of management are forward-looking statements. When used, the words "could," "believe," "anticipate," "intend," "estimate," "expect," "project" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain such identifying words. These forward-looking statements are based on management's current expectations and assumptions about future events and are based on currently available information as to the outcome and timing of future events. When considering forward-looking statements, you should keep in mind the risk factors and other cautionary statements described under "Risk Factors" in this prospectus, the accompanying prospectus supplement, our most recent Annual Report on Form 10-K (the "Form 10-K"), any subsequent Quarterly Report on Form 10-Q and any Current Report on Form 8-K incorporated by reference herein. Should one or more of these risks or uncertainties occur, or should underlying assumptions prove incorrect, our actual results and plans could differ materially from those expressed in any forward looking statements.

our business strategy; our reserves; our exploration and development drilling prospects, inventories, projects and programs; our ability to replace the reserves we produce through drilling and property acquisitions; our financial strategy, liquidity and capital required for our development program; our realized oil, natural gas liquid ("NGL") and natural gas prices; the timing and amount of future production of oil, NGLs and natural gas; our hedging strategy and results; our future drilling plans; our competition and government regulations; our ability to obtain permits and governmental approvals; our pending legal or environmental matters;

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our marketing of oil, NGLs and natural gas;
our leasehold or business acquisitions;
costs of developing our properties;
general economic conditions;
credit markets;
uncertainty regarding our future operating results; and
our plans, objectives, expectations and intentions that are not historical.

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We caution you that these forward-looking statements are subject to all of the risks and uncertainties, most of which are difficult to predict and many of which are beyond our control, incident to the exploration for and development, production, gathering and sale of oil, NGLs and natural gas. These risks include, but are not limited to, commodity price volatility, inflation, lack of availability of drilling and production equipment and services, environmental risks, drilling and other operating risks, regulatory changes, the uncertainty inherent in estimating reserves and in projecting future rates of production, cash flow and access to capital, the timing of development expenditures and the other risks described under "Risk Factors" in this prospectus, the accompanying prospectus supplement, the Form 10-K, any subsequent Quarterly Report on Form 10-Q and any Current Report on Form 8-K incorporated by reference herein.

Reserve engineering is a process of estimating underground accumulations of oil, NGLs and natural gas that cannot be measured in an exact way. The accuracy of any reserve estimate depends on the quality of available data, the interpretation of such data and price and cost assumptions made by reserve engineers. In addition, the results of drilling, testing and production activities may justify revisions of estimates that were made previously. If significant, such revisions would change the schedule of any further production and development drilling. Accordingly, reserve estimates may differ significantly from the quantities of oil, NGLs and natural gas that are ultimately recovered.

All forward-looking statements, expressed or implied, attributable to us or persons acting on our behalf 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.

All forward-looking statements speak only as of the date they are made. Except as otherwise required by applicable law, we disclaim any duty to update any forward-looking statements, all of which are expressly qualified by the statements in this section, to reflect events or circumstances after the date of this prospectus.

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THE COMPANY

We are an independent oil and natural gas company focused on the acquisition, exploration, development and production of unconventional oil and associated liquids-rich natural gas reserves in the Permian Basin of West Texas. The vast majority of our acreage is located on large, contiguous acreage blocks in the core of the Midland Basin, a sub-basin of the Permian Basin, primarily in the adjacent counties of Midland, Martin, Andrews, Dawson, Ector and Glasscock. For more information about our business, operations and financial results, see the documents listed under "Where You Can Find Additional Information."

Corporate Information

Our principal executive offices are located at 3141 Hood Street, Suite 500, Dallas, Texas 75219, and our telephone number at that address is (214) 252-2700. Our website address is *www.rsppermian.com*. Our periodic reports and other information filed with or furnished to the SEC are 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 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.

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RISK FACTORS

Investing in our common stock involves a high degree of risk. Before deciding whether to purchase shares of our common stock, you should carefully consider the risks and uncertainties described under "Risk Factors" in the Form 10-K, any subsequent Quarterly Reports on Form 10-Q, any Current Report on Form 8-K incorporated by reference herein and the accompanying prospectus supplement, together with all of the other information included in, or incorporated by reference into, this prospectus and in the accompanying prospectus supplement. See "Incorporation by Reference." If any of these risks actually occur, our business, financial condition and results of operations could be materially and adversely affected and we may not be able to achieve our goals, the value of our securities could decline and you could lose some or all of your investment. Additional risks not presently known to us or that we currently deem immaterial may also impair our business operations.

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USE OF PROCEEDS

Unless the applicable prospectus supplement indicates otherwise, we intend to use the net proceeds from any sales of securities by us under this prospectus for general corporate purposes. We will not receive any proceeds from the sale of any securities by any selling stockholder named in this prospectus, unless otherwise indicated.

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DESCRIPTION OF CAPITAL STOCK

General

Our authorized capital stock consists of 300,000,000 shares of common stock, \$0.01 par value per share, of which 78,267,452 shares are issued and outstanding as of March 12, 2015 (including 1,041,766 shares of restricted stock that have been awarded to our directors and certain of our employees and consultants), and 15,000,000 shares of preferred stock, \$0.01 par value per share, of which no shares are issued and outstanding.

The following summary of our capital stock and our amended and restated certificate of incorporation and our amended and restated bylaws does not purport to be complete and is qualified in its entirety by reference to the provisions of applicable law and to our amended and restated certificate of incorporation and our amended and restated bylaws.

Common Stock

Except as provided by law or in a preferred stock designation, holders of common stock are entitled to one vote for each share held of record on all matters submitted to a vote of the stockholders, have the exclusive right to vote for the election of directors and do not have cumulative voting rights. Except as otherwise required by law, holders of common stock are not entitled to vote on any amendment to the amended and restated certificate of incorporation (including any certificate of designations relating to any series of preferred stock) that relates solely to the terms of any 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 our amended and restated certificate of incorporation (including any certificate of designations relating to any series of preferred stock) or pursuant to the General Corporation Law of the State of Delaware (the "DGCL"). Subject to prior rights and preferences that may be applicable to any outstanding shares or series of preferred stock, holders of common stock are entitled to receive ratably in proportion to the shares of common stock held by them such dividends (payable in cash, stock or otherwise), if any, as may be declared from time to time by our board of directors out of funds legally available for dividend payments. All outstanding shares of common stock are fully paid and non-assessable, and the shares of common stock to be issued upon completion of this offering will be fully paid and non-assessable.

The holders of common stock have no preferences or rights of conversion, exchange, preemption or other subscription rights. There are no redemption or sinking fund provisions applicable to our common stock. In the event of any voluntary or involuntary liquidation, dissolution or winding-up of our affairs, holders of common stock will be entitled to share ratably in our assets in proportion to the shares of common stock held by them that are remaining after payment or provision for payment of all of our debts and obligations and after distribution in full of preferential amounts to be distributed to holders of outstanding shares of preferred stock, if any.

Preferred Stock

Our amended and restated certificate of incorporation authorizes our board of directors, subject to any limitations prescribed by law, without further stockholder approval, to establish and to issue from time to time one or more classes or series of preferred stock, par value \$0.01 per share, covering up to an aggregate of 15,000,000 shares of preferred stock. Each class or series of preferred stock will cover the number of shares and will have the powers, preferences, rights, qualifications, limitations and restrictions determined by our board of directors, which may include, among others, dividend rights, liquidation preferences, voting rights, conversion rights, preemptive rights and redemption rights. Except as provided by law or in a preferred stock designation, the holders of preferred stock are not entitled to vote at or receive notice of any meeting of stockholders.

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Anti-Takeover Effects of Delaware Law, Our Amended and Restated Certificate of Incorporation and Our Amended and Restated Bylaws

Some provisions of Delaware law, our amended and restated certificate of incorporation and our amended and restated bylaws contain provisions that could make the following transactions more difficult: acquisitions of us by means of a tender offer, a proxy contest or otherwise or removal of our incumbent officers and directors. These provisions may also have the effect of preventing changes in our management. 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 our best interests, including transactions that might result in a premium over the market price for our shares.

These provisions are expected to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed to encourage persons seeking to acquire control of us to first negotiate with us. We believe that the benefits of increased protection and our potential ability to negotiate with the proponent of an unfriendly or unsolicited proposal to acquire or restructure us outweigh the disadvantages of discouraging these proposals because, among other things, negotiation of these proposals could result in an improvement of their terms.

Delaware Law

Our amended and restated certificate of incorporation provides that we are not governed by Section 203 of the DGCL, which, in the absence of such provisions, would have imposed additional requirements regarding mergers and other business combinations. Section 203 of the DGCL prohibits a Delaware corporation from engaging in any business combination with any interested stockholder for a period of three years following the date that the stockholder became an interested stockholder, unless:

the transaction is approved by the board of directors before the date 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 such time 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.

An interested stockholder is defined as a person who, together with any affiliates or associates of such person, beneficially owns, directly or indirectly, 15% or more of the outstanding voting shares of a Delaware corporation. The term "business combination" is broadly defined to include a broad array of transactions, including mergers, consolidations, sales or other dispositions of assets having a total value in excess of 10% of the consolidated assets of the corporation or all of the outstanding stock of the corporation, and some other transactions that would increase the interested stockholder's proportionate share ownership in the corporation.

Our Amended and Restated Certificate of Incorporation and Our Amended and Restated Bylaws

Provisions of our amended and restated certificate of incorporation and our amended and restated bylaws may delay or discourage transactions involving an actual or potential change in control or change in our management, including transactions in which stockholders might otherwise receive a premium for their shares, or transactions that our stockholders might otherwise deem to be in their best interests. Therefore, these provisions could adversely affect the price of our common stock.

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Among other things, our amended and restated certificate of incorporation and amended and restated bylaws:

establish advance notice procedures with regard to stockholder proposals relating to the nomination of candidates for election as directors or new business to be brought before meetings of our stockholders. These procedures provide that notice of stockholder proposals must be timely given in writing to our corporate secretary prior to the meeting at which the action is to be taken. Generally, to be timely, notice must be received at our principal executive offices not less than 90 days nor more than 120 days prior to the first anniversary date of the annual meeting for the preceding year. Our amended and restated bylaws specify the requirements as to form and content of all stockholders' notices. These requirements may preclude stockholders from bringing matters before the stockholders at an annual or special meeting;

provide our board of directors the ability to authorize undesignated preferred stock. This ability makes it possible for our board of directors 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 us. These and other provisions may have the effect of deferring hostile takeovers or delaying changes in control or management of our company;

provide that the authorized number of directors may be changed only by resolution of our board of directors;

provide that all vacancies, including newly created directorships, may, 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 directors then in office, even if less than a quorum;

provide that any action required or permitted to be taken by the stockholders must be effected at a duly called annual or special meeting of stockholders and may not be effected by any consent in writing in lieu of a meeting of such stockholders, subject to the rights of the holders of any series of preferred stock with respect to such series;

provide that our certificate of incorporation and bylaws may be amended by the affirmative vote of the holders of at least two-thirds of our then outstanding common stock;

provide that special meetings of our stockholders may only be called by our board of directors, our chief executive officer or the chairman of our board of directors;

provide for our board of directors to 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. This system of electing and removing directors may tend to discourage a third party from making a tender offer or otherwise attempting to obtain control of us because it generally makes it more difficult for stockholders to replace a majority of the directors;

provide that we renounce any interest in existing and future investments in other entities by, or the business opportunities of, the Sponsors (as defined in our amended and restated certificate of incorporation) or any of their officers, directors, agents, stockholders, members, partners, affiliates and subsidiaries (other than our directors that are presented business opportunities in their capacity as our directors) and that they have no obligation to offer us those investments or opportunities; and

provide that our bylaws can be amended by our board of directors.

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Forum Selection

Our amended and restated certificate of incorporation provides that unless we consent 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 our behalf;

any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers, employees or agents to us or our stockholders;

any action asserting a claim against us arising pursuant to any provision of the DGCL, our amended and restated certificate of incorporation or our amended and restated bylaws; or

any action asserting a claim against us that is governed by the internal affairs doctrine, in each such case subject to such Court of Chancery having personal jurisdiction over the indispensable parties named as defendants therein.

Our amended and restated certificate of incorporation also provides that any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock will be deemed to have notice of, and to have consented to, this forum selection provision. Although we believe these provisions will benefit us by providing increased consistency in the application of Delaware law for the specified types of actions and proceedings, the provisions may have the effect of discouraging lawsuits against our directors, officers, employees and agents. 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 our amended and restated certificate of incorporation is inapplicable or unenforceable.

Limitations of Liability and Indemnification Matters

Our amended and restated certificate of incorporation limits the liability of our directors for monetary damages for breach of their fiduciary duty as directors, except for liability that cannot be eliminated under the DGCL. Delaware law provides that directors of a company will not be personally liable for monetary damages for breach of their fiduciary duty as directors, except for liabilities:

for any breach of their duty of loyalty to us or our stockholders;

for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law;

for unlawful payment of dividend or unlawful stock repurchase or redemption, as provided under Section 174 of the DGCL; or

for any transaction from which the director derived an improper personal benefit.

Any amendment, repeal or modification of these provisions will be prospective only and would not affect any limitation on liability of a director for acts or omissions that occurred prior to any such amendment, repeal or modification.

Our amended and restated bylaws also provide that we will indemnify our directors and officers to the fullest extent permitted by Delaware law. If Delaware law is amended to authorize corporate action further eliminating or limiting the personal liability of a director, then the liability of our directors will be eliminated or limited to the fullest extent permitted by Delaware law, as so amended. Our amended and restated bylaws also permit us to purchase insurance on behalf of any officer, director, employee or other agent for any liability arising out of that person's actions as our officer, director, employee or agent, regardless of whether Delaware law would permit indemnification. We have entered into

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indemnification agreements with each of our directors and officers. These agreements require us to indemnify these individuals to the fullest extent permitted under Delaware law against liability that may arise by reason of their service to us, and to advance expenses incurred as a result of any proceeding against them as to which they could be indemnified. We believe that the limitation of liability provision in our amended and restated certificate of incorporation and the indemnification agreements facilitates our ability to continue to attract and retain qualified individuals to serve as directors and officers.

The limitation of liability and indemnification provisions in our certificate of incorporation and bylaws may discourage stockholders from bringing a lawsuit against directors for breach of their fiduciary duties. They may also reduce the likelihood of derivative litigation against directors and officers, even though an action, if successful, might benefit us and our stockholders. A stockholder's investment may be harmed to the extent we pay the costs of settlement and damage awards against directors and officers pursuant to these indemnification provisions. Insofar as indemnification for liabilities arising under the Securities Act may be permitted to our directors, officers and controlling persons pursuant to the foregoing provisions, or otherwise, we have been advised that, in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act, and is, therefore, unenforceable. There is no pending litigation or proceeding naming any of our directors or officers as to which indemnification is being sought, nor are we aware of any pending or threatened litigation that may result in claims for indemnification by any director or officer.

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is American Stock Transfer & Trust Company, LLC.

Listing

Our common stock is listed on the New York Stock Exchange under the symbol "RSPP."

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SELLING STOCKHOLDERS

This prospectus covers the offering of up to 4,600,000 shares of our common stock by the selling stockholders identified below. The selling stockholders identified below may from time to time offer and sell pursuant to this prospectus all or any portion of the 4,600,000 shares of our common stock registered hereunder. We are registering these 4,600,000 shares of our common stock for sale by the selling stockholders identified below pursuant to a registration rights agreement (the "Registration Rights Agreements"), dated January 23, 2014, between us, such selling stockholders and certain other stockholders, which we entered into in connection with our initial public offering ("IPO"). Pursuant to the Registration Rights Agreement, we will pay all expenses relating to the registration and offering of these shares, except that the selling stockholders will pay any underwriting discounts or commissions. However, we will not receive any of the proceeds from the sales of common stock by the selling stockholders. The term "selling stockholders" includes the stockholders listed in the table below and their transferees, pledgees, donees, assignees or other successors.

No offer or sale under this prospectus may be made by a stockholder unless that holder is listed in the table below, in a supplement to this prospectus or in an amendment to the related registration statement that has become effective. We may supplement or amend this prospectus to include additional selling stockholders or additional shares of our common stock held by the selling stockholders identified below.

The following table sets forth information relating to the selling stockholders as of March 6, 2015, based on information supplied to us by the selling stockholders on or prior to that date. We have not sought to verify such information. The selling stockholders may hold or acquire at any time shares of our common stock in addition to the shares offered by this prospectus and may have acquired additional shares of our common stock since the date on which the information reflected herein was provided to us. Additionally, the selling stockholders may have sold or transferred some or all of their shares of our common stock in transactions exempt from the registration requirements of the Securities Act since such date. Other information about the selling stockholders may also change over time. The following table sets forth the maximum number of shares of our common stock that may be sold under this prospectus by the selling stockholders identified below. The selling stockholders are not obligated to sell any of the shares of common stock offered by this prospectus. The selling stockholders reserve the right to accept or reject, in whole or in part, any proposed sale of shares. The selling stockholders may also offer and sell less than the number of shares indicated. The selling stockholders are not making any representation that any shares covered by this prospectus will or will not be offered for sale.

	Shares of Common Stock Beneficially Owned Prior to the Offering(1)		Shares of Common Stock That May be	Stock Beneficially Owned After Completion of the Offering(2)	
Name of Selling Stockholder	Number	Percent(3)	Offered	Number	Percent(3)
ACTOIL, LLC(4)	10,816,626	13.8%	2,876,102	7,940,524	10.1%
Natural Gas Partners VIII, L.P.(5)	541,470	*	143,975	397,495	*
Production Opportunities II, L.P.(6)	5,941,873	7.6%	1,579,923	4,361,950	5.6%

Less than 1%.

(1)

The amounts and percentages of common stock beneficially owned are reported on the bases 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. Securities that can be so acquired are deemed to be outstanding for purposes of

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computing such person's ownership percentage, but not for purposes of computing any other person's percentage. Under these rules, more than one person may be deemed 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. Except as otherwise indicated in these footnotes, each of the beneficial owners has, to our knowledge, sole voting and investment power with respect to the indicated shares of common stock.

- Assumes the sale of all shares held by the selling stockholders covered by this prospectus and assumes the selling stockholders do not acquire beneficial ownership of any additional shares of our common stock. The selling stockholders are not obligated to sell any of the shares of our common stock covered by this prospectus. Also assumes no sale by us of shares of our common stock under this registration statement.
- (3) Percentage of beneficial ownership is based upon 78,267,452 shares of common stock outstanding as of March 12, 2015.
- ACTOIL, LLC is a wholly owned subsidiary of TIAA Oil and Gas Investments, LLC, its sole member. TIAA Oil and Gas Investments, LLC is a wholly owned subsidiary of Teachers Insurance and Annuity Association of America, its sole member. Because of the foregoing relationships, each of ACTOIL, LLC, TIAA Oil and Gas Investments, LLC and Teachers Insurance and Annuity Association of America may be deemed to have voting and dispositive power over the reported shares and may also be deemed to be the beneficial owner of these shares. Each of ACTOIL, LLC, TIAA Oil and Gas Investments, LLC and Teachers Insurance and Annuity Association of America disclaim beneficial ownership of the reported shares in excess of its pecuniary interest in the shares.
- GFW VIII, L.L.C. and G.F.W. Energy VIII, L.P. may be deemed to share voting and dispositive power over the reported shares and therefore may also be deemed to be the beneficial owner of these shares by virtue of GFW VIII, L.L.C. being the sole general partner of G.F.W. Energy VIII, L.P., which is the general partner of Natural Gas Partners VIII, L.P. Kenneth A. Hersh, an Authorized Member of GFW VIII, L.L.C., may also be deemed to share the power to vote, or to direct the vote, and to dispose, or to direct the disposition of, such shares. Mr. Hersh does not own directly any shares of our common stock. David Albin, one of our directors, may also be deemed to share the power to vote, or to direct the vote, and to dispose, or to direct the disposition of, such shares by virtue of his shared control of GFW VIII, L.L.C. Mr. Albin does not own directly any shares of our common stock. GFW VIII, L.L.C. has delegated full power and authority to manage NGP VIII to NGP Energy Capital Management, L.L.C., and accordingly, NGP Energy Capital Management, L.L.C. may be deemed to share voting and dispositive power over these shares and therefore may also be deemed to be the beneficial owner of these shares. Each of GFW VIII, L.L.C., G.F.W. Energy VIII, NGP Energy Capital Management, L.L.C. and Messrs. Hersh and Albin disclaim beneficial ownership of the reported shares in excess of its or his pecuniary interest in the shares.
- Natural Gas Partners IX, L.P. and NGP IX Offshore Holdings, L.P. (together, "NGP IX") jointly own Production Opportunities II, L.P. The sole general partner of each of Natural Gas Partners IX, L.P. and NGP IX Offshore Holdings, L.P. is G.F.W. Energy IX, L.P., and the sole general partner of G.F.W. Energy IX, L.P. is GFW IX, L.L.C. As such, NGP IX, G.F.W. Energy IX, L.P. and GFW IX, L.L.C. may be deemed to share voting and dispositive power over the reported shares and therefore may also be deemed to be the beneficial owner of these shares. Kenneth A. Hersh, an Authorized Member of GFW IX, L.L.C., may also be deemed to share the power to vote, or to direct the vote, and to dispose, or to direct the disposition of, such shares. Mr. Hersh does not own directly any shares of our common stock. David Albin, one of our directors, may also be deemed to share the power to vote, or to direct the vote, and to dispose, or to direct the

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disposition of, those shares by virtue of his shared control of GFW IX, L.L.C. Mr. Albin does not own directly any shares of our common stock. GFW IX, L.L.C. has delegated full power and authority to manage Production Opportunities II, L.P. to NGP Energy Capital Management, L.L.C., and accordingly, NGP Energy Capital Management, L.L.C. may be deemed to share voting and dispositive power over these shares and therefore may also be deemed to be the beneficial owner of these shares. Each of NGP IX, G.F.W. Energy IX, L.P., GFW IX, L.L.C., NGP Energy Capital Management, L.L.C. and Messrs. Hersh and Albin disclaim beneficial ownership of the reported shares in excess of its or his pecuniary interest in the shares.

Material Relationships

Except as set forth in, or incorporated by reference into, this prospectus or in any prospectus supplement, none of the selling stockholders has held any position or office with, been employed by, or otherwise has had a material relationship with us or any of our affiliates during the three years prior to the date of this prospectus.

Transactions with the Selling Stockholders in Connection with Our IPO

In January 2014, in connection with our IPO, we entered into the following transactions with the selling stockholders:

We acquired net profits interests in oil and natural gas properties in the Permian Basin from ACTOIL, LLC in exchange for 10.816.626 shares of our common stock.

We acquired working interests in certain acreage and wells in the Permian Basin from Rising Star Energy Development Co., L.L.C. ("Rising Star") in exchange for 1,793,123 shares of the our common stock and the right to receive approximately \$1.7 million in cash. Rising Star's sole member and the general partner of Rising Star's sole member are owned by Natural Gas Partners VIII, L.P., certain members of our management team and certain other persons. In January 2015, Rising Star distributed all of its shares of the Company's common stock to its sole member, which in turn distributed all such shares to its limited partners (including Natural Gas Partners VIII, L.P.) and to its general partner, which in turn made a distribution to its members (including Natural Gas Partners VIII, L.P.), on a pro rata basis. In connection with such distribution, Rising Star assigned its rights and obligations under the Stockholders' Agreement (defined and described below) to Natural Gas Partners VIII, L.P. and all of its rights and obligations under the Registration Rights Agreement to all of the persons who received shares of the Company's common stock from Rising Star's sole member or the general partner of Rising Star's sole member.

The members of RSP Permian, L.L.C. contributed all of their interests in RSP Permian, L.L.C. to RSP Permian Holdco, L.L.C., a newly formed entity that is wholly owned by such members, and RSP Permian Holdco, L.L.C. contributed all of its interests in RSP Permian, L.L.C. to us in exchange for 28,536,427 shares of our common stock, an assignment of RSP Permian, L.L.C.'s pro rata share of an escrow related to a disposition of certain working interests and the right to receive approximately \$27.7 million in cash. RSP Permian Holdco, L.L.C. is owned by Production Opportunities II, L.P., certain members of our management team and certain of our employees. In December 2014, in anticipation of RSP Permian Holdco, L.L.C.'s pending liquidation, RSP Permian Holdco, L.L.C. distributed of all of its shares of the Company's common stock to its members (including Production Opportunities II, L.P.), on a pro rata basis. In connection with such distribution, RSP Permian Holdco, L.L.C. assigned all of its rights and obligations under the Stockholders' Agreement to Production Opportunities II, L.P. and all of its rights and obligations under the Registration Rights Agreement to its members.

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Stockholders' Agreement

We are party to a stockholders' agreement (the "Stockholders' Agreement") with Production Opportunities II, L.P., Natural Gas Partners VIII, L.P. and certain other stockholders. We entered into the Stockholders' Agreement on January 23, 2014 in connection with our IPO. The Stockholders' Agreement provides Production Opportunities II, L.P., Ted Collins, Jr. and Wallace Family Partnership, LP with the right to designate a certain number of nominees to our board of directors, subject to certain ownership requirements. Production Opportunities II, L.P., in particular, has the right to designate two nominees to our board of directors if it and its affiliates own 15% or more of the outstanding shares of our common stock and the right to designate one nominee if it and its affiliates own less than 15% but more than 5% of the outstanding shares of our common stock. In addition, pursuant to the Stockholders' Agreement, for so long as Production Opportunities II, L.P. and its affiliates collectively own 15% or more of the outstanding shares of our common stock, any committee of our board of directors is to include in its membership at least one director designated by Production Opportunities II, L.P., except to the extent that such membership would violate applicable securities laws or stock exchange rules.

As a result of an underwritten public offering of our common stock by us and certain of our stockholders in August 2014, Production Opportunities II, L.P. and its affiliates owned less than 15% (but more than 5%) of the outstanding shares of our common stock and therefore lost the right to have one of its nominees serve on each committee of our board of directors as well as the right to designate two nominees. However, the other parties to the Stockholders' Agreement, including us, waived the requirement to have a nominee of Production Opportunities II, L.P. tender his resignation to our board of directors.

PLAN OF DISTRIBUTION

We and the selling stockholders (including any selling stockholder's transferees, pledgees, donees, assignees or other successors-in-interest) may offer and sell the securities covered by this prospectus from time to time in one or more transactions, including without limitation:

through agents;

to or through underwriters, brokers or dealers; or

through a combination of any of these methods.

In addition, the manner in which we and the selling stockholders may sell some or all of the securities covered by this prospectus includes any method permitted by law, including, without limitation, through:

a block trade in which a broker-dealer will attempt to sell as agent, but may position or resell a portion of the block, as principal, in order to facilitate the transaction;

purchases by a broker-dealer, as principal, and resale by the broker-dealer for its account;

ordinary brokerage transactions and transactions in which a broker solicits purchasers; or

privately negotiated transactions.

We and the selling stockholders may also enter into hedging transactions. For example, we and the selling stockholders may:

enter into transactions with a broker-dealer or affiliate thereof in connection with which such broker-dealer or affiliate will engage in short sales of the common stock pursuant to this prospectus, in which case such broker-dealer or affiliate may use shares of common stock received from us and the selling stockholders to close out its short positions;

sell securities short and redeliver such shares to close out the short positions;

enter into option or other types of transactions that require us and the selling stockholders to deliver common stock to a broker-dealer or an affiliate thereof, who will then resell or transfer the common stock under this prospectus; or

loan or pledge the common stock to a broker-dealer or an affiliate thereof, who may sell the loaned shares or, in an event of default in the case of a pledge, sell the pledged shares pursuant to this prospectus.

The securities covered by this prospectus may be sold:

on a national securities exchange;

in the over-the-counter market; or

in transactions otherwise than on an exchange or in the over-the-counter market.

In addition, we and the selling stockholders may enter into derivative or hedging transactions with third parties, or sell securities not covered by this prospectus to third parties in privately negotiated transactions. In connection with such a transaction, the third parties may sell securities covered by and pursuant to this prospectus and an applicable prospectus supplement or pricing supplement, as the case may be. If so, the third party may use securities borrowed from us, the selling stockholders or others to settle such sales and may use securities received from us or the selling stockholders to close out any related short positions. We and the selling stockholders may also loan or pledge securities covered by this prospectus and an applicable prospectus supplement to third parties, who may sell the loaned

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securities or, in an event of default in the case of a pledge, sell the pledged securities pursuant to this prospectus and the applicable prospectus supplement or pricing supplement, as the case may be.

If required by applicable law, a prospectus supplement will state the terms of the offering of the securities, including:

the name or names of any participating underwriters, brokers, dealers or agents and the amounts of securities underwritten or purchased by each of them, if any;

the public offering price or purchase price of the securities and the net proceeds to be received by us and/or the selling stockholders from the sale;

any delayed delivery arrangements;

any underwriting discounts, commissions or agency fees and other items constituting underwriters', brokers', dealers' or agents' compensation;

any discounts or concessions allowed or reallowed or paid to dealers;

any securities exchange or markets on which the securities may be listed; and

other material terms of the offering.

The offer and sale of the securities described in this prospectus by us, the selling stockholders, the underwriters or the third parties described above may be effected from time to time in one or more transactions, including privately negotiated transactions, either:

at a fixed price or prices, which may be changed;

at market prices prevailing at the time of sale;

at prices related to the prevailing market prices; or

at negotiated prices.

In addition to selling common stock under this prospectus, the selling stockholders may:

transfer common stock in other ways not involving market maker or established trading markets, including directly by gift, distribution, or other transfer;

sell common stock under Rule 144 or Rule 145 of the Securities Act rather than under this prospectus, if the transaction meets the requirements of Rule 144 or Rule 145; or

sell common stock by any other legally available means.

General

Any public offering price and any discounts, commissions, concessions or other items constituting compensation allowed or paid to underwriters, dealers, agents or remarketing firms may be changed from time to time. Any selling stockholders, underwriters, dealers, agents and remarketing firms that participate in the distribution of the offered securities may be "underwriters" as defined in the Securities Act. Any discounts or commissions they receive from us or the selling stockholders and any profits they receive on the resale of the offered securities may be treated as underwriting discounts and commissions under the Securities Act. We and the selling stockholders will identify any underwriters, agents or dealers and describe their commissions, fees or discounts in the applicable prospectus supplement or pricing supplement, as the case may be.

We, the selling stockholders and other persons participating in the sale or distribution of the securities will be subject to applicable provisions of the Exchange Act, and the rules and regulations thereunder, including Regulation M. This regulation may limit the timing of purchases and sales of any

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of the securities by us and/or the selling stockholders or any other person. The anti-manipulation rules under the Exchange Act may apply to sales of securities in the market and to the activities of us and the selling stockholders and any affiliates of ours and the selling stockholders. Furthermore, Regulation M may restrict the ability of any person engaged in the distribution for a period of up to five business days before the distribution. These restrictions may affect the marketability of the securities and the ability of any person or entity to engage in market-making activities with respect to the securities.

We and the selling stockholders are not restricted as to the price or prices at which we may sell the securities. Sales of such securities may have an adverse effect on the market price of the securities.

Moreover, it is possible that a significant number of shares of common stock could be sold at the same time, which may have an adverse effect on the market price of the securities.

We cannot assure you that we or the selling stockholders will sell all or any portion of the securities offered hereby.

Underwriters and Agents

If underwriters are used in a sale, they will acquire the offered securities for their own account. The underwriters may resell the offered securities in one or more transactions, including negotiated transactions. These sales may be made at a fixed public offering price or prices, which may be changed, at market prices prevailing at the time of the sale, at prices related to such prevailing market prices or at negotiated prices. We and the selling stockholders may offer the securities to the public through an underwriting syndicate or through a single underwriter. The underwriters in any particular offering will be mentioned in the applicable prospectus supplement or pricing supplement, as the case may be.

Unless otherwise specified in connection with any particular offering of securities, the obligations of the underwriters to purchase the offered securities will be subject to certain conditions contained in an underwriting agreement that we and the applicable selling stockholders, if any, will enter into with the underwriters at the time of the sale to them. The underwriters will be obligated to purchase all of the securities of the series offered if any of the securities are purchased, unless otherwise specified in connection with any particular offering of securities. Any initial offering price and any discounts or concessions allowed, reallowed or paid to dealers may be changed from time to time.

We and the selling stockholders may designate agents to sell the offered securities. Unless otherwise specified in connection with any particular offering of securities, the agents will agree to use their best efforts to solicit purchases for the period of their appointment. We and the selling stockholders may also sell the offered securities to one or more remarketing firms, acting as principals for their own accounts or as agents for us or any selling stockholders. These firms will remarket the offered securities upon purchasing them in accordance with a redemption or repayment pursuant to the terms of the offered securities. A prospectus supplement or pricing supplement, as the case may be, will identify any remarketing firm and will describe the terms of its agreement, if any, with us and/or the selling stockholders and its compensation.

In connection with offerings made through underwriters or agents, we and the selling stockholders may enter into agreements with such underwriters or agents pursuant to which we and the selling stockholders receive outstanding securities in consideration for the securities being offered to the public for cash. In connection with these arrangements, the underwriters or agents may also sell securities covered by this prospectus to hedge their positions in these outstanding securities, including in short sale transactions. If so, the underwriters or agents may use the securities received from us or the selling stockholders under these arrangements to close out any related open borrowings of securities.

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Dealers

We and the selling stockholders may sell the offered securities to dealers as principals. We and the selling stockholders may negotiate and pay dealers' commissions, discounts or concessions for their services. The dealer may then resell such securities to the public either at varying prices to be determined by the dealer or at a fixed offering price agreed to with us and/or the selling stockholders at the time of resale. Dealers engaged by us or the selling stockholders may allow other dealers to participate in resales.

Direct Sales

We and the selling stockholders may choose to sell the offered securities directly. In this case, no underwriters or agents would be involved.

Institutional Purchasers

We and the selling stockholders may authorize agents, dealers or underwriters to solicit certain institutional investors to purchase offered securities on a delayed delivery basis pursuant to delayed delivery contracts providing for payment and delivery on a specified future date. The applicable prospectus supplement or pricing supplement, as the case may be will provide the details of any such arrangement, including the offering price and commissions payable on the solicitations.

We and the selling stockholders will enter into such delayed contracts only with institutional purchasers that we or the selling stockholders approve. These institutions may include commercial and savings banks, insurance companies, pension funds, investment companies and educational and charitable institutions.

Indemnification; Other Relationships

We and the selling stockholders may have agreements with agents, underwriters, dealers and remarketing firms to indemnify them against certain civil liabilities, including liabilities under the Securities Act. Agents, underwriters, dealers and remarketing firms, and their affiliates, may engage in transactions with, or perform services for, us or the selling stockholders in the ordinary course of business. This includes commercial banking and investment banking transactions.

We may agree to indemnify in certain circumstances the selling stockholders against certain liabilities, including liabilities under the Securities Act. The selling stockholders may agree to indemnify us in certain circumstances against certain liabilities, including liabilities under the Securities Act.

Market-Making; Stabilization and Other Transactions

In connection with any offering of common stock, the underwriters may purchase and sell shares of common stock in the open market. These transactions may include short sales, syndicate covering transactions and stabilizing transactions. Short sales involve syndicate sales of common stock in excess of the number of shares to be purchased by the underwriters in the offering, which creates a syndicate short position. "Covered" short sales are sales of shares made in an amount up to the number of shares represented by the underwriters' over-allotment option. In determining the source of shares to close out the covered syndicate 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 shares through the over-allotment option. Transactions to close out the covered syndicate short involve either purchases of the common stock in the open market after the distribution has been completed or the exercise of the over-allotment option. The underwriters may also make "naked" short sales of shares in excess of the overallotment option. The underwriters must close out any naked short position by purchasing shares of common stock in the open market. A naked short position is more

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likely to be created if the underwriters are concerned that there may be downward pressure on the price of the shares in the open market after pricing that could adversely affect investors who purchase in the offering. Stabilizing transactions consist of bids for or purchases of shares in the open market while the offering is in progress for the purpose of pegging, fixing or maintaining the price of the securities.

In connection with any offering, the underwriters may also engage in penalty bids. Penalty bids permit the underwriters to reclaim a selling concession from a syndicate member when the securities originally sold by the syndicate member are purchased in a syndicate covering transaction to cover syndicate short positions. Stabilizing transactions, syndicate covering transactions and penalty bids may cause the price of the securities to be higher than it would be in the absence of the transactions. The underwriters may, if they commence these transactions, discontinue them at any time.

Fees and Commissions

We will pay the expenses, other than underwriting discounts and commissions, associated with the registration and sale of shares to be sold by the selling stockholders. The selling stockholders will pay any underwriting discounts or selling commissions for such sales.

Pursuant to a requirement by the Financial Industry Regulatory Authority, Inc. ("FINRA"), the maximum commission or discount to be received by any FINRA member or independent broker-dealer in connection with the sale of any securities being registered by this prospectus may not be greater than eight percent of the offering proceeds received by us and any selling stockholders.

If 5% or more of the net proceeds of any offering of securities made under this prospectus will be received by FINRA members participating in the offering or affiliates or associated persons of such FINRA members, the offering will be conducted in accordance with FINRA Rule 5121.

LEGAL MATTERS

The validity of any securities offered under this prospectus will be passed upon for us by Vinson & Elkins L.L.P., Houston, Texas. Any underwriters will also be advised about legal matters by their own counsel, which will be named in the applicable prospectus supplement.

EXPERTS

The financial statements of RSP Permian, Inc. incorporated by reference in this prospectus and elsewhere in the registration statement have been so incorporated by reference in reliance upon the report of Grant Thornton LLP, independent registered public accountants, upon the authority of said firm as experts in accounting and auditing.

Estimates of our oil and natural gas reserves and related future net cash flows related to our properties as of December 31, 2014 incorporated by reference in this prospectus and elsewhere in the registration statement were based upon reserve reports prepared by independent petroleum engineers, Netherland, Sewell & Associates, Inc. We have included these estimates in reliance on the authority of such firm as an expert in such matters.

WHERE YOU CAN FIND ADDITIONAL INFORMATION

We file annual, quarterly, current and other reports and other information with the SEC. You may read and copy any materials we file with the SEC at the SEC's Public Reference Room at 100 F Street, N.E., Room 1580, Washington, D.C., 20549. Please call the SEC at 1-800-SEC-0330 for further information on the operation of the Public Reference Room. Our SEC filings are also available to the public from commercial document retrieval services and through the SEC's website at http://www.sec.gov.

Our common stock is listed on the New York Stock Exchange under the symbol "RSPP." Our reports and other information filed with the SEC can also be inspected at the offices of the New York Stock Exchange, 20 Broad Street, New York, New York 10005.

We also make available free of charge on our Internet website at *www.rsppermian.com* all of the documents that we file with the SEC as soon as reasonably practicable after we electronically file those documents with the SEC. Information contained on our website is not incorporated by reference into this prospectus, and you should not consider information contained on our website as part of this prospectus.

INCORPORATION BY REFERENCE

We "incorporate by reference" information from other documents that we file with the SEC into this prospectus, which means that we disclose important information to you by referring you to those documents. The information incorporated by reference is deemed to be part of this prospectus. You should not assume that the information in this prospectus is current as of the date other than the date on the cover page of this prospectus.

We incorporate by reference in this prospectus the documents listed below and any subsequent filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (excluding information deemed to be furnished and not filed with the SEC) after the date of this prospectus and before the filing of a post-effective amendment to the registration statement of which this prospectus is

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a part that indicates that all securities offered hereunder have been sold or that deregisters all securities then remaining unsold:

The description of our common stock contained in our Registration Statement on Form 8-A, as filed with the SEC on January 14, 2014, 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 Annual Report on Form 10-K for the year ended December 31, 2014 and Part III of our Annual Report on Form 10-K for the year ended December 31, 2013; and

Our Current Report on Form 8-K, as filed with the SEC on March 17, 2015.

The most recent information that we file with the SEC automatically updates and supersedes more dated information.

You may request a copy of any document incorporated by reference in this prospectus and any exhibit specifically incorporated by reference in those documents, at no cost, by writing or telephoning us at the following address or phone number:

RSP Permian, Inc. 3141 Hood Street, Suite 500 Dallas, Texas 75219 Attention: Investor Relations Telephone: (214) 252-2700

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PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution

The following table sets forth the costs and expenses, other than underwriting discounts and commissions, payable by us in connection with the sale and distribution of the common stock being registered.

SEC registration fee	\$ 15,158.99*
FINRA filing fee	225,500.00
Legal fees and expenses	**
Accounting fees and expenses	**
Printing and engraving expenses	**
Transfer agent and registrar fees and expenses	**
Blue sky fees and expenses	**
Miscellaneous fees and expenses	**
Total	\$ **

Except with respect to the shares of common stock to be sold by the selling stockholders, the registrant is deferring payment of the SEC registration fee in reliance on Rule 456(b) and Rule 457(r).

Estimated fees and expenses are not presently known. The foregoing sets forth the general categories of expenses (other than underwriting discounts and commissions) that we anticipate that we will incur in connection with the offering of securities under this registration statement. An estimate of the aggregate expenses in connection with the issuance and distribution of the securities being offered will be included in the applicable prospectus supplement.

Item 15. Indemnification of Directors and Officers

Section 145 of the DGCL provides that a corporation may indemnify any person who was or is a party, or is threatened to be made a party, to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation by reason of the fact that he is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise), against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by him in connection with such action, suit or proceeding if he acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the corporation and, with respect to any criminal action or proceeding, had no reasonable cause to believe his conduct was unlawful. A similar standard is applicable in the case of derivative actions (i.e., actions by or in the right of the corporation), except that indemnification extends only to expenses, including attorneys' fees, incurred in connection with the defense or settlement of such action and the statute requires court approval before there can be any indemnification where the person seeking indemnification has been found liable to the corporation.

Our amended and restated certificate of incorporation and amended and restated bylaws contain provisions that limit the liability of our directors and officers for monetary damages to the fullest extent

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permitted by the DGCL. Consequently, our directors will not be personally liable to us or our stockholders for monetary damages for breach of fiduciary duty as a director, except liability:

for any breach of the director's duty of loyalty to our company or our stockholders;

for any act or omission not in good faith or that involve intentional misconduct or knowing violation of law;

under Section 174 of the DGCL regarding unlawful dividends and stock purchases; or

for any transaction from which the director derived an improper personal benefit.

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 our directors and officers will be further limited to the fullest extent permitted by the DGCL.

In addition, we have entered into indemnification agreements with our current directors and officers containing provisions that are in some respects broader than the specific indemnification provisions contained in the DGCL. The indemnification agreements require us, among other things, to indemnify our directors against certain liabilities that may arise by reason of their status or service as directors and to advance their expenses incurred as a result of any proceeding against them as to which they could be indemnified. We also intend to enter into indemnification agreements with our future directors and officers.

We maintain liability insurance policies that indemnify our directors and officers against various liabilities, including certain liabilities under arising under the Securities Act and the Securities Exchange Act, as amended (the "Exchange Act"), that may be incurred by them in their capacity as such.

Any underwriting agreement that we enter into in connection with the sale of the common stock being registered may provide for indemnification of our directors and certain of our officers by the underwriters against certain liabilities.

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers or persons controlling us pursuant to the foregoing provisions, we have been informed that in the opinion of the SEC, such indemnification is against public policy as expressed in the Securities Act and is therefore unenforceable.

Item 16. Exhibits

Reference is made to the Exhibit Index following the signature pages hereto, which Exhibit Index is incorporated by reference into this Item.

Item 17. Undertakings

Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the

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question whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

The undersigned registrant hereby undertakes:

- (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
 - (i) To include any prospectus required by section 10(a)(3) of the Securities Act;
 - (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the SEC pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20% change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and
 - (iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

Provided, however, that paragraphs (i), (ii) and (iii) of this section do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the SEC by the registrant pursuant to section 13 or section 15(d) of the Exchange Act that are incorporated by reference in this registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the registration statement.

- (2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
 - (4) That, for the purpose of determining liability under the Securities Act to any purchaser:
 - (i) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
 - (ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415 (a)(1)(i), (vii), or (x) for the purpose of providing the information required by section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof. Provided, however, that no

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statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

(5) That, for the purpose of determining liability of the registrant under the Securities Act to any purchaser in the initial distribution of the securities:

The undersigned registrant undertakes that in a primary offering of securities of the undersigned registrant pursuant to this registration statement, regardless of the underwriting method used to sell the securities to the purchaser, if the securities are offered or sold to such purchaser by means of any of the following communications, the undersigned registrant will be a seller to the purchaser and will be considered to offer or sell such securities to such purchaser:

- (i) Any preliminary prospectus or prospectus of the undersigned registrant relating to the offering required to be filed pursuant to Rule 424;
- (ii) Any free writing prospectus relating to the offering prepared by or on behalf of the undersigned registrant or used or referred to by the undersigned registrant;
- (iii) The portion of any other free writing prospectus relating to the offering containing material information about the undersigned registrant or its securities provided by or on behalf of the undersigned registrant; and
 - (iv) Any other communication that is an offer in the offering made by the undersigned registrant to the purchaser.
- (6) That, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to section 13(a) or section 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to section 15(d) of the Exchange Act) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Dallas, State of Texas, on March 17, 2015.

RSP PERMIAN, INC.

By:	/s/ STEVEN GRAY		
	Steven Gray		
	Chief Executive Officer and Director		

Each person whose signature appears below appoints James E. Mutrie, Scott McNeill and Tamara Pollard, and each of them, any of whom may act without the joinder of the other, as his true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement and any registration statement (including any amendment thereto) for this offering that is to be effective upon filing pursuant to Rule 462(b) under the Securities Act of 1933, as amended, and to file the same, with all exhibits thereto, and all other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents full power and authority to do and perform each and every act and thing requisite and necessary to be done, as fully to all intents and purposes as he or she might or would do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or any of them or their or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons on March 17, 2015 in the capacities indicated.

Signature	Title	
/s/ MICHAEL GRIMM	Chairman of the Board	
Michael Grimm	Chairman of the Board	
/s/ STEVEN GRAY	Chief Executive Officer and Director (Principal Executive Officer)	
Steven Gray	Chief Executive Officer and Director (Timelpan Executive Officer)	
/s/ SCOTT MCNEILL	Chief Financial Officer and Director (Principal Financial Officer)	
Scott McNeill	Chief Philancial Officer and Director (Philospai Philancial Officer)	
/s/ BARRY TURCOTTE	Chief Accounting Officer (Principal Accounting Officer)	
Barry Turcotte	- Chief Accounting Officer (Principal Accounting Officer)	
/s/ DAVID ALBIN	Director	
David Albin	Director	

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Signature	Title
/s/ JOSEPH B. ARMES	Disease
Joseph B. Armes	Director
/s/ TED COLLINS, JR.	D'
Ted Collins, Jr.	Director
/s/ MATTHEW S. RAMSEY	D'
Matthew S. Ramsey	Director
/s/ MICHAEL W. WALLACE	Distriction
Michael W. Wallace	Director

EXHIBIT INDEX

Exhibit
Number Description

- 1.1* Form of Underwriting Agreement
- 4.1 Amended and Restated Certificate of Incorporation of RSP Permian, Inc. (incorporated by reference to Exhibit 3.1 of the Company's Current Report on Form 8-K (File No. 001-36264) filed with the Commission on January 29, 2014).
- 4.2 Amended and Restated Bylaws of RSP Permian, Inc. (incorporated by reference to Exhibit 3.2 of the Company's Current Report on Form 8-K (File No. 001-36264) filed with the Commission on January 29, 2014).
- 4.3 Registration Rights Agreement, dated as of January 23, 2014, among RSP Permian, Inc., RSP Permian Holdco, L.L.C., Ted Collins, Jr., Wallace Family Partnership, LP, ACTOIL, LLC, Rising Star Energy Development Co., L.L.C. and Pecos Energy Partners, L.P. (incorporated by reference to Exhibit 4.2 of the Company's Current Report on Form 8-K (File No. 001-36273) filed with the Commission on January 29, 2014).
- 4.4 Stockholders' Agreement, dated as of January 23, 2014, among RSP Permian, Inc., RSP Permian Holdco, L.L.C., Ted Collins, Jr., Wallace Family Partnership, LP, Rising Star Energy Development Co., L.L.C. and Pecos Energy Partners, L.P. (incorporated by reference to Exhibit 4.1 of the Company's Current Report on Form 8-K (File No. 001-36273) filed with the Commission on January 29, 2014).
- 5.1 Opinion of Vinson & Elkins L.L.P.
- 23.1 Consent of Vinson & Elkins L.L.P. (included in Exhibit 5.1)
- 23.2 Consent of Grant Thornton LLP.
- 23.3 Consent of Netherland, Sewell & Associates, Inc.
- 24.1 Power of Attorney (included on the signature page of this Registration Statement)

To be filed, if necessary in connection with an offering of common stock, subsequent to the effectiveness of this registration statement, by amendment to this registration statement or incorporated herein by reference from documents to be filed with the SEC under the Securities Exchange Act of 1934, as amended.