Use these links to rapidly review the document <u>TABLE OF CONTENTS</u> <u>TABLE OF CONTENTS</u>

Table of Contents

Filed Pursuant to Rule 424(b)(3) Registration No. 333-224824

This preliminary prospectus supplement relates to an effective registration statement under the Securities Act of 1933, as amended, but is not complete and may be changed. This preliminary prospectus supplement and the accompanying base prospectus are not an offer to sell these securities and are not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED MAY 10, 2018

PRELIMINARY PROSPECTUS SUPPLEMENT (To Prospectus Dated May 10, 2018)

12,000,000 Shares

PROPETRO

ProPetro Holding Corp.

Common Stock

The selling securityholders identified in this prospectus supplement are selling an aggregate of 12,000,000 shares of our common stock. We will not receive any proceeds from the sale of the shares by the selling securityholders, including any shares that the selling securityholders may sell pursuant to the underwriters' option to purchase additional shares of common stock. Our common stock is listed on the New York Stock Exchange, or NYSE, under the symbol "PUMP." The last reported closing sales price of our common stock on May 9, 2018 was \$19.53 per share.

	Per Share	Total
Public offering price	\$	\$
Underwriting discounts and commissions(1)	\$	\$
Proceeds, before expenses, to the selling securityholders	\$	\$

(1) See "Underwriting" for additional information regarding underwriting compensation.

The underwriters may also purchase up to an additional 1,800,000 shares from the selling securityholders, at the public offering price, less the underwriting discount, within 30 days from the date of this prospectus supplement.

We are an "emerging growth company" as that term is used in the Jumpstart Our Business Startups Act of 2012, or JOBS Act, and are subject to reduced public company reporting requirements.

Delivery of the shares of common stock will be made on or about Depository Trust Company. , 2018 through the book-entry facilities of the

Investing in our common stock involves risks. You should consider the risks we have described in "Risk Factors" beginning on page S-4.

Neither the Securities and Exchange Commission (the "SEC") nor any other regulatory body has approved or disapproved of these securities or determined if this prospectus supplement or the accompanying base prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

Goldman Sachs & Co. LLC

The date of this prospectus supplement is , 2018.

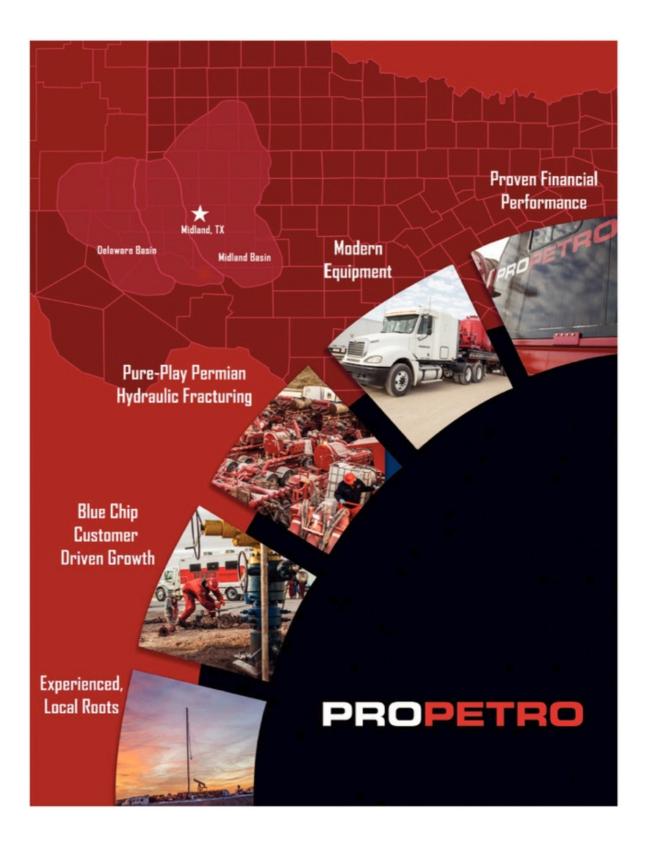


TABLE OF CONTENTS

PROSPECTUS SUPPLEMENT

	Page
About This Prospectus Supplement	<u>ii</u>
Summary	<u>S-1</u>
The Offering	<u>S-3</u>
Risk Factors	<u>S-4</u>
Use of Proceeds	<u>S-6</u>
Dividend Policy	<u>S-7</u>
Selling Securityholders	<u>S-8</u>
Material U.S. Federal Income Tax Consequences to Non-U.S. Holders	<u>S-9</u>
Underwriting	<u>S-14</u>
Legal Matters	<u>S-19</u>
Experts	<u>S-19</u>
Forward-Looking Statements	<u>S-20</u>
Incorporation of Certain Documents by Reference	<u>S-21</u>

PROSPECTUS

	Page
About This Prospectus	<u>1</u>
Where You Can Find More Information; Incorporation By Reference	<u>2</u>
The Company	<u>4</u>
Risk Factors	<u>5</u>
Use Of Proceeds	<u>6</u>
Ratio Of Earnings To Fixed Charges And Preferred Share Dividends	<u>7</u>
Description Of Capital Stock	<u>8</u>
Selling Securityholders	<u>11</u>
Plan Of Distribution	<u>12</u>
Legal Matters	<u>13</u>
Experts	<u>13</u>
i	

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. The second part, the accompanying base prospectus, gives more general information, some of which may not apply to this offering. You should read the entire prospectus supplement, as well as the accompanying base prospectus and the documents incorporated by reference that are described under "Where You Can Find More Information" in the accompanying base prospectus and "Incorporation of Certain Documents by Reference" in this prospectus supplement. In the event that the information contained in this prospectus supplement differs or varies from the information contained in the accompanying base prospectus, you should rely on the information contained in this prospectus supplement. You should rely only on the information contained or incorporated by reference in this prospectus supplement and the accompanying base prospectus or to which we have referred you. We have not, and the selling securityholders and the underwriters have not, authorized any other person to provide you with information different from that contained in this prospectus supplement, the accompanying base prospectus and any "free writing prospectus." If anyone provides you with different or inconsistent information, you should not rely on it. The selling securityholders are not making an offer to sell these securities in any jurisdiction where an offer or sale is not permitted. The information in this prospectus supplement and the accompanying base prospectus or in any document incorporated by reference herein or therein is accurate only as of the date hereof or thereof, as applicable, regardless of the time of delivery of this prospectus supplement and the accompanying base prospectus or of any sale of our common stock by the selling securityholders or the underwriters. Our business, financial condition, results of operations and prospects may have changed since such date. If any statement in one of those documents is inconsistent with a statement in another document having a later date, for example, a document incorporated by reference in this prospectus supplement or the accompanying base prospectus, the statement in the document having the later date modifies or supersedes the earlier statement.

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

ii

SUMMARY

This summary provides a brief overview of information contained elsewhere in or incorporated by reference into this prospectus supplement and the accompanying base prospectus. 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, the accompanying base prospectus and the documents incorporated herein by reference for a more a complete understanding of this offering of shares of our common stock. You should read "Risk Factors" for more information about important risks that you should consider carefully before buying our common stock.

Unless the context otherwise requires, references in this prospectus supplement to "ProPetro Holding Corp.," "the Company," "our company," "we," "our" and "us," or like terms, refer to ProPetro Holding Corp. and its subsidiary. References to "Energy Capital Partners" refer to Energy Capital Partners II, LP and its parallel and co investment funds and related investment vehicles. When we refer to the "utilization" of our fleet, we are referring to the percentage of our fleet in use by our customers at the applicable time or for the applicable period of determination.

ProPetro Holding Corp.

We are a growth-oriented, Midland, Texas-based oilfield services company providing hydraulic fracturing and other complementary services to leading upstream oil and gas companies engaged in the exploration and production ("E&P") of North American unconventional oil and natural gas resources. Our operations are primarily focused in the Permian Basin, where we have cultivated longstanding customer relationships with some of the region's most active and well-capitalized E&P companies. The Permian Basin is widely regarded as the most prolific oil-producing area in the United States, and we believe we are one of the largest providers of hydraulic fracturing services in the region by hydraulic horsepower, or HHP, with an aggregate deployed capacity of 815,000 HHP, or 18 deployed units, at March 31, 2018.

Our modern hydraulic fracturing fleet has been designed to handle Permian Basin specific operating conditions and the region's increasingly high-intensity well completions, which are characterized by longer horizontal wellbores, more frac stages per lateral and increasing amounts of proppant per well. Over 92% of our fleet has been delivered over the past five years, and substantially all of our fleet has been built by a single manufacturer since 2013.

In addition to our core hydraulic fracturing operations, we also offer a suite of complementary well completion and production services, including cementing, acidizing, coiled tubing, flowback services, surface air drilling and drilling. We believe these complementary services create operational efficiencies for our customers and allow us to capture a greater portion of their capital spending across the lifecycle of an unconventional well.

Our primary business objective is to serve as a strategic partner to our customers. We achieve this objective by providing reliable, high-quality services that are tailored to our customers' needs and synchronized with their well development programs. This alignment assists our customers in optimizing the long-term development of their unconventional resources. Over the past three years, we have leveraged our strong Permian Basin relationships to significantly grow our installed HHP capacity and organically build our Permian Basin cementing and coiled tubing lines of business. Consistent with past performance, we believe our substantial market presence will continue to yield a variety of actionable growth opportunities allowing us to expand both our hydraulic fracturing and complementary services going forward. To this end, we intend to continue our past practice of opportunistically deploying new equipment on a long-term, dedicated basis in response to specific customer demand.

Principal Executive Offices and Internet Address

Our principal executive offices are located at 1706 S. Midkiff, Bldg. B, Midland, Texas 79701, and our telephone number is (432) 688-0012. Our website is located at http://www.propetroservices.com. 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. Information on our website or any other website is not incorporated by reference into this prospectus supplement and does not constitute a part of this prospectus supplement.

	THE OFFERING
Common stock offered by the selling securityholders	12,000,000 shares.
Option to purchase additional shares of common stock	The selling securityholders have granted the underwriters a 30-day option to purchase up to an additional 1,800,000 shares of our common stock at the public offering price.
Common stock outstanding prior to and after this offering	83,412,189 shares.
Use of proceeds	We will not receive any of the proceeds from the sale of shares of our common stock by the selling securityholders pursuant to this prospectus supplement. See "Use of Proceeds."
Dividend policy	We do not anticipate paying any cash dividends on our common stock. See "Dividend Policy."
Trading symbol	Our common stock is listed on the NYSE under the symbol "PUMP."
Risk factors	You should carefully read and consider the information set forth under the heading "Risk Factors" and all other information set forth in this prospectus supplement and incorporated herein before deciding to invest in our common stock.

RISK FACTORS

Investing in shares of our common stock involves a high degree of risk. You should carefully consider the following risks, as well as the risks described in our most recent Annual Report on Form 10-K, Quarterly Report on Form 10-Q and all of the other information contained in or incorporated by reference into this prospectus supplement and the accompanying prospectus, before deciding to invest in our common stock. If any of the risks were to occur, our business, financial condition, results of operations and cash flows could be materially adversely affected. In that case, the trading price of our common stock could decline and you could lose all or part of your investment.

We do not intend to pay dividends on our common stock, and our debt agreements place certain restrictions on our ability to do so. Consequently, your only opportunity to achieve a return on your investment is if the price of our common stock appreciates.

We do not plan to declare dividends on shares of our common stock in the foreseeable future. Additionally, our revolving credit facility places certain restrictions on our ability to pay cash dividends. Consequently, unless we revise our dividend policy, your only opportunity to achieve a return on your investment in us will be if you sell your common stock at a price greater than you paid for it.

Future sales of our common stock in the public market could reduce our stock price, and any additional capital raised by us through the sale of equity or convertible securities may dilute your ownership in us.

We may sell additional shares of common stock in subsequent public offerings. We may also issue additional shares of common stock or convertible securities. As of May 9, 2018 there were 83,412,189 shares of common stock outstanding. We cannot predict the size of future issuances of our common stock or securities convertible into common stock or the effect, if any, that future issuances and sales of shares of our common stock will have on the market price of our common stock. Sales of substantial amounts of our common stock (including shares issued in connection with an acquisition), or the perception that such sales could occur, may adversely affect prevailing market prices of our common stock.

We may be unable to successfully identify, execute or effectively integrate future acquisitions, which may adversely affect our financial condition and results of operations.

We regularly engage in discussions with potential sellers regarding acquisition opportunities. These acquisition efforts may involve our participation in auction processes, as well as situations in which we believe we are the only buyer or one of a very limited number of potential buyers in negotiations with the potential seller, and can involve assets or businesses that, if acquired, could have a material effect on our financial condition and results of operations. We typically do not announce a transaction until after we have executed a definitive agreement and, in certain cases, in order to protect our business interests or for other reasons, we may defer public announcement of a transaction until closing or a later date. Past experience has demonstrated that discussions and negotiations regarding a potential transaction can advance or terminate in a short period of time. Moreover, the closing of any transaction for which we have entered into a definitive agreement may be subject to customary and other closing conditions, which may not ultimately be satisfied or waived. Accordingly, we can give no assurance that any future acquisition or investment efforts will be successful. Additionally, any acquisition of assets or businesses involves potential risks. For example, the process of integrating acquired assets and businesses may require a significant amount of time and resources, and we may have difficulty integrating acquired assets and businesses into our existing operations, realizing anticipated synergies and maximizing the financial and strategic position of the combined enterprise, and maintaining uniform standards, policies and controls across our organization. Furthermore, the integration of any acquired business or assets may disrupt our ongoing business and our relationships with employees, customers, suppliers and contractors. Additionally, any acquisition of assets or

businesses could involve the incurrence of unanticipated liabilities and costs for which indemnification is unavailable or inadequate. If any of these risks or unanticipated liabilities or costs were to materialize, any desired benefits from an acquisition may not be fully realized, if at all, and our future financial performance and results of operations could be adversely affected.

USE OF PROCEEDS

We will not receive any of the proceeds from the sale of shares of our common stock by the selling securityholders pursuant to this prospectus supplement. The selling securityholders will receive all of the net proceeds from the sale of these shares, including the net proceeds from the sale of any shares that the selling securityholders may sell pursuant to the underwriters' option to purchase additional shares of our common stock. In addition, we will pay all expenses related to this offering, other than underwriting discounts and commissions related to the shares sold by the selling securityholders. See "Selling Securityholders" and "Underwriting."

DIVIDEND POLICY

We do not anticipate declaring or paying any cash dividends to holders of our common stock in the foreseeable future. We currently intend to retain future earnings, if any, to finance the growth of our business. Our future dividend policy is within the discretion of our board of directors and will depend upon then-existing conditions, including our results of operations, financial condition, capital requirements, investment opportunities, statutory restrictions on our ability to pay dividends and other factors our board of directors may deem relevant. In addition, our revolving credit facility places restrictions on our ability to pay cash dividends.

SELLING SECURITYHOLDERS

The following table presents information regarding the selling securityholders in this offering and the shares that the underwriters have agreed to purchase from the selling securityholders. In addition, the nature of any position, office or other material relationship that the selling securityholders have had, within the past three years, with us or with any of our predecessors or affiliates, is indicated in a footnote to the table. We will pay all expenses relating to the registration of the shares by the selling securityholders under the Securities Act and will pay other offering expenses, except that the selling securityholders will pay all underwriting discounts and commissions. We will not receive any proceeds from the sale of our common stock by the selling securityholders.

We have prepared the table, the paragraph immediately following this paragraph, and the related notes based on information supplied to us by the selling securityholders on or prior to May 9, 2018. We have not sought to verify such information.

Beneficial ownership has been determined under rules promulgated by the SEC. The information does not necessarily indicate beneficial ownership for any other purpose. Shares of common stock subject to currently exercisable and convertible securities currently convertible, or exercisable or convertible within 60 days after the date of this prospectus supplement, are deemed outstanding for purposes of computing the percentage beneficially owned by the person or entity holding such securities but are not deemed outstanding for purposes of computing the percentage beneficially owned by any other person or entity.

		-	Shares of Common Stock offered hereby				nmon Stock ned after this ng	
	Shares of Common St beneficiall owned prior this offerin	f ock ly r to	Assuming the underwriters' option to purchase additional shares is not exercised	Assuming the underwriters' option to purchase additional shares is exercised	Assuming underwrite option t purchas addition shares is 1 <u>exercise</u>	ers' o e al 10t	Assuming underwrite option to purchas addition shares is exercise	ers' o e al s
Selling securityholders	Number	%(1)	Number	Number	Number	%(1)	Number	%(1)
Energy Capital Partners II, LP(2)	310,422	0.4%	179,712	206,669	130,710	0.2%	103,753	0.1%
Energy Capital Partners II- A, LP(2)	10,111,599	12.1%	5,853,899	6,731,984	4,257,700	5.1%	3,379,615	4.1%
Energy Capital Partners II-	, ,		, ,	, ,	, ,		, ,	
B, LP(2) Energy Capital Partners II-C	2,117,308	2.5%	1,225,771	1,409,637	891,537	1.1%	707,671	0.8%
(Direct IP), LP(2) Energy Capital Partners II-	3,719,251	4.5%	2,153,183	2,476,160	1,566,068	1.9%	, ,	1.5%
D, LP(2) Energy Capital Partners II (Midland Co-	2,492,098	3.0%	1,442,748	1,659,160	1,049,350	1.3%	832,938	1.0%
Invest), LP(2)	1,977,250	2.4%	1,144,687	1,316,390	832,563	1.0%	660,860	0.8%
Total	20,727,928	24.8%	12,000,000	13,800,000	8,727,928	10.5%	6,927,928	8.3%

(1) Based upon 83,412,189 shares of common stock outstanding as of May 9, 2018.

(2) Each of Energy Capital Partners II, LP ("ECP II"), Energy Capital Partners II-A, LP ("ECP II-A"), Energy Capital Partners II-B, LP ("ECP II-B"), Energy Capital Partners II-C (Direct IP), LP ("ECP II-C") and Energy Capital Partners II-D, LP ("ECP II-D") is managed by its general partner, Energy Capital Partners GP II, LP. Energy Capital Partners GP II, LP is managed by its general partner, Energy Capital Partners II, LLC ("Energy Capital Partners"). As a result, each of Energy Capital Partners GP II, LP and Energy Capital Partners may be deemed to share beneficial ownership of the shares held by ECP II, ECP II-A, ECP II-B, ECP II-C and ECP II-D. Energy Capital Partners II (Midland Co-Invest), LP is managed by its general partner, Energy Capital Partners GP II Co-Investment (Midland), LLC, which is managed by its sole member, Energy Capital Partners II, LLC. Douglas W. Kimmelman, Peter Labbat, Thomas K. Lane, Tyler Reeder and Andrew D. Singer are the managing members of, and Rahman D'Argenio and Schuyler E. Coppedge are partners of, Energy Capital Partners. Each such individual disclaims beneficial ownership of such shares. The address for Energy Capital Partners and each of the other persons and entities in this footnote is 51 John F. Kennedy Parkway, Suite 200, Short Hills, New Jersey 07078.

MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES TO NON-U.S. HOLDERS

The following discussion is a summary of the material U.S. federal income tax consequences to Non-U.S. Holders (as defined below) of the purchase, ownership and disposition of our common stock issued pursuant to this offering, but does not purport to be a complete analysis of all potential tax effects. The effects of other U.S. federal tax laws, such as estate and gift tax laws, and any applicable state, local or non-U.S. tax laws are not discussed. This discussion is based on the U.S. Internal Revenue Code of 1986, as amended (the "Code"), Treasury regulations promulgated thereunder ("Treasury Regulations"), judicial decisions, and published rulings and administrative pronouncements of the U.S. Internal Revenue Service (the "IRS"), in each case as in effect as of the date hereof. These authorities may change or be subject to differing interpretations. Any such change or differing interpretation may be applied retroactively in a manner that could adversely affect a Non-U.S. Holder of our common stock. We have not sought and will not seek any rulings from the IRS regarding the matters discussed below. There can be no assurance the IRS or a court will not take a contrary position to those discussed below regarding the tax consequences of the purchase, ownership and disposition of our common stock.

This discussion is limited to Non-U.S. Holders that hold our common stock as a "capital asset" within the meaning of Section 1221 of the Code (generally, property held for investment). This discussion does not address all U.S. federal income tax consequences relevant to a Non-U.S. Holder's particular circumstances, including the impact of the Medicare contribution tax on net investment income. In addition, it does not address consequences relevant to Non-U.S. Holders subject to special rules, including, without limitation:

- U.S. expatriates and former citizens or long-term residents of the United States;
- persons subject to the alternative minimum tax;
- persons whose functional currency is not the U.S. dollar;
- persons holding our common stock as part of a hedge, straddle or other risk reduction strategy or as part of a conversion transaction or other integrated investment;
- banks, insurance companies, and other financial institutions;
- real estate investment trusts or regulated investment companies;
- brokers, dealers or traders in securities;
- "controlled foreign corporations," "passive foreign investment companies," and corporations that accumulate earnings to avoid U.S. federal income tax;
- partnerships or other entities or arrangements treated as partnerships for U.S. federal income tax purposes (and investors therein);
- tax-exempt organizations or governmental organizations;
- persons deemed to sell our common stock under the constructive sale provisions of the Code;
- persons who hold or receive our common stock pursuant to the exercise of any employee stock option or otherwise as compensation;
- "qualified foreign pension funds" (within the meaning of Section 897(1)(2) of the Code and entities, all of the interests of which are held by qualified foreign pension funds);
- tax-qualified retirement plans; and
- persons subject to special tax accounting rules as a result of any item of gross income with respect to the common stock being taken into account in an applicable financial statement.



If an entity treated as a partnership for U.S. federal income tax purposes holds our common stock, the tax treatment of a partner in the partnership will depend on the status of the partner, the activities of the partnership and certain determinations made at the partner level. Accordingly, partnerships holding our common stock and partners in such partnerships should consult their tax advisors regarding the U.S. federal income tax consequences to them.

THIS DISCUSSION IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT TAX ADVICE. INVESTORS SHOULD CONSULT THEIR TAX ADVISORS WITH RESPECT TO THE APPLICATION OF THE U.S. FEDERAL INCOME TAX LAWS TO THEIR PARTICULAR SITUATIONS AS WELL AS ANY TAX CONSEQUENCES OF THE PURCHASE, OWNERSHIP AND DISPOSITION OF OUR COMMON STOCK ARISING UNDER THE U.S. FEDERAL ESTATE OR GIFT TAX LAWS OR UNDER THE LAWS OF ANY STATE, LOCAL OR NON-U.S. TAXING JURISDICTION OR UNDER ANY APPLICABLE INCOME TAX TREATY.

Definition of a Non-U.S. Holder

For purposes of this discussion, a "Non-U.S. Holder" is any beneficial owner of our common stock that is neither a "U.S. person" nor an entity treated as a partnership for U.S. federal income tax purposes. A U.S. person is any person that, for U.S. federal income tax purposes, is or is treated as any of the following:

- an individual who is a citizen or resident of the United States;
- a corporation, or an 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 that (1) is subject to the primary supervision of a U.S. court and the control of one or more "United States persons" (within the meaning of Section 7701(a)(30) of the Code), or (2) has a valid election in effect to be treated as a United States person for U.S. federal income tax purposes.

Distributions

As described in the section entitled "Dividend Policy" we do not anticipate declaring or paying dividends to holders of our common stock in the foreseeable future. However, if we do make distributions of cash or property on our 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. Amounts not treated as dividends for U.S. federal income tax purposes will constitute a return of capital and first be applied against and reduce a Non-U.S. Holder's adjusted tax basis in its common stock, but not below zero. Any excess will be treated as capital gain and will be treated as described below under "—Sale or Other Taxable Disposition."

Subject to the discussion below on effectively connected income, dividends paid to a Non-U.S. Holder of our common stock will be subject to U.S. federal withholding tax at a rate of 30% of the gross amount of the dividends (or such lower rate specified by an applicable income tax treaty, provided the Non-U.S. Holder furnishes to us or our paying agent prior to the payment of dividends a valid IRS Form W-8BEN or W-8BEN-E (or other applicable documentation) certifying qualification for the lower treaty 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. Non-U.S. Holders should consult their tax advisors regarding their entitlement to benefits under any applicable income tax treaty.

If dividends paid to a Non-U.S. Holder are effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, the Non-U.S. Holder maintains a permanent establishment in the United States to which such dividends are attributable), the Non-U.S. Holder will be exempt from the U.S. federal withholding tax described above. To claim the exemption, the Non-U.S. Holder must furnish to the applicable withholding agent a valid IRS Form W-8ECI, certifying that the dividends are effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States.

Any such effectively connected dividends will be subject to U.S. federal income tax on a net income basis at the regular graduated rates. A Non-U.S. Holder that is treated as a corporation for U.S. federal income tax purposes also may be subject to a branch profits tax at a rate of 30% (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 such effectively connected dividends. Non-U.S. Holders should consult their tax advisors regarding any applicable tax treaties that may provide for different rules.

Sale or Other Taxable Disposition

Subject to the discussions below under "—Information Reporting and Backup Withholding" and "—Additional Withholding Tax on Payments Made to Foreign Accounts," 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 our common stock unless:

- the gain is effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, the Non-U.S. Holder maintains a permanent establishment in the United States to which such gain is attributable);
- the Non-U.S. Holder is a nonresident alien individual present in the United States for 183 days or more during the taxable year of the disposition and certain other requirements are met; or
- our common stock constitutes a United States real property interest ("USRPI") by reason of our status as a United States real property holding corporation ("USRPHC") for U.S. federal income tax purposes.

Gain described in the first bullet point above generally will be subject to U.S. federal income tax on a net income basis at the regular graduated rates. A Non-U.S. Holder that is treated as a corporation for U.S. federal income tax purposes also may be subject to a branch profits tax at a rate of 30% (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 such effectively connected gain.

A Non-U.S. Holder described in the second bullet point above will be subject to U.S. federal income tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on any gain derived from the disposition, which may generally be offset by U.S. source capital losses of the Non-U.S. Holder (even though the individual is not considered a resident of the United States), provided the Non-U.S. Holder has timely filed U.S. federal income tax returns with respect to such losses.

With respect to the third bullet point above, we believe we currently are not, and do not anticipate becoming, a USRPHC. Because the determination of whether we are a USRPHC depends, however, on the fair market value of our USRPIs relative to the fair market value of our non-U.S. real property interests and our other business assets, there can be no assurance we currently are not a USRPHC or will not become one in the future. Even if we are or were to become a USRPHC, gain arising from the sale or other taxable disposition by a Non-U.S. Holder of our common stock will not be subject to U.S. federal income tax if our common stock is "regularly traded," as defined by applicable Treasury

Regulations, on an established securities market, and such Non-U.S. Holder owned, actually and constructively, 5% or less of our common stock throughout the shorter of the five-year period ending on the date of the sale or other taxable disposition or the Non-U.S. Holder's holding period. If we were to become a USRPHC and our common stock were not considered to be "regularly traded" on an established securities market during the calendar year in which the relevant disposition by a Non-U.S. holder occurs, such Non-U.S. holder (regardless of the percentage of stock owned) would be subject to U.S. federal income tax on a sale or other taxable disposition of our common stock and a 15% withholding tax would apply to the gross proceeds from such disposition.

Non-U.S. Holders should consult their tax advisors regarding potentially applicable income tax treaties that may provide for different rules.

Information Reporting and Backup Withholding

Payments of dividends on our common stock will not be subject to backup withholding, provided the applicable withholding agent does not have actual knowledge or reason to know the Non-U.S. Holder is a United States person and the Non-U.S. Holder either certifies its non-U.S. status, such as by furnishing a valid IRS Form W-8BEN, W-8BEN-E or W-8ECI, or otherwise establishes an exemption. However, information returns are required to be filed with the IRS in connection with any dividends on our common stock paid to the Non-U.S. Holder, regardless of whether any tax was actually withheld. In addition, proceeds of the sale or other taxable disposition of our common stock within the United States or conducted through certain U.S.-related brokers generally will not be subject to backup withholding or information reporting if the applicable withholding agent receives the certification described above and does not have actual knowledge or reason to know that such Non-U.S. Holder is a United States person, or the Non-U.S. Holder otherwise establishes an exemption. Proceeds of a disposition of our common stock conducted through a non-U.S. office of a non-U.S. broker generally will not be subject to backup withholding or information reporting.

Copies of information returns that are filed with the IRS may also be made available under the provisions of an applicable treaty or agreement to the tax authorities of the country in which the Non-U.S. Holder resides or is established.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules may be allowed as a refund or a credit against a Non-U.S. Holder's U.S. federal income tax liability, provided the required information is timely furnished to the IRS.

Additional Withholding Tax on Payments Made to Foreign Accounts

Withholding taxes may be imposed under Sections 1471 to 1474 of the Code (such Sections commonly referred to as the Foreign Account Tax Compliance Act, or "FATCA") on certain types of payments made to non-U.S. financial institutions and certain other non-U.S. entities. Specifically, a 30% withholding tax may be imposed on dividends on, or gross proceeds from the sale or other disposition of, our common stock 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 (1) the foreign financial institution undertakes certain diligence and reporting obligations, (2) the non-financial foreign entity either certifies it does not have any "substantial United States owners" (as defined in the Code) or furnishes identifying information regarding each direct and indirect substantial United States owner, or (3) the foreign financial institution and is subject to the diligence and reporting requirements in (1) above, it must enter into an agreement with the U.S. Department of the Treasury requiring, among other things, that it undertake to identify accounts held by certain "specified United States persons" or "United States-owned foreign entities" (each as defined in the Code), annually

Table of Contents

report certain information about such accounts, and withhold 30% on certain payments to non-compliant foreign financial institutions and certain other account holders. Foreign financial institutions located in jurisdictions that have an intergovernmental agreement with the United States governing FATCA may be subject to different rules.

Under the applicable Treasury Regulations and administrative guidance, withholding under FATCA generally applies to payments of dividends on our common stock, and will apply to payments of gross proceeds from the sale or other disposition of such stock on or after January 1, 2019.

Prospective investors should consult their tax advisors regarding the potential application of withholding under FATCA to their investment in our common stock.

UNDERWRITING

We, the selling securityholders and the underwriters named herein have entered into an underwriting agreement with respect to the shares being offered. Subject to certain conditions, the underwriters have agreed to purchase 12,000,000 shares of our common stock.

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

The underwriters have an option to buy up to an additional 1,800,000 shares from the selling securityholders to cover sales by the underwriters of a greater number of shares than the total number set forth in the table above. The underwriters may exercise that option for 30 days.

The following table shows the per share and total underwriting discounts and commissions to be paid to the underwriters by the selling securityholders. Such amounts are shown assuming both no exercise and full exercise of the underwriters' option to purchase 1,800,000 additional shares.

	No Exercise	Full Exercise
Per Share	\$	\$
Total	\$	\$

Shares sold by the underwriters to the public will initially be offered at the 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 \$ per share from the offering price. After the initial offering of the shares, the underwriters may change the offering price and the other selling terms. The offering of the shares by the underwriters is subject to receipt and acceptance and subject to the underwriters' right to reject any order in whole or in part. Sales of shares made outside the United States may be made by affiliates of the underwriters.

The expenses of this offering that have been paid or are payable by us are estimated to be approximately \$ million (excluding underwriting discounts and commissions). We have agreed to pay expenses incurred by the selling securityholders in connection with this offering, other than the underwriting discounts and commissions.

The selling securityholders will receive all of the proceeds from this offering and we will not receive any proceeds from the sale of shares in this offering.

The Company and its officers, directors, certain holders of the Company's common stock and the selling securityholders 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, and the Company has agreed not to file a registration statement in respect of any common stock or securities convertible or exchangeable into common stock, during the period from the date of this prospectus supplement continuing through the date 60 days after the date of this prospectus supplement, except with the prior written consent of the underwriters. This agreement does not apply to any existing employee benefit plans.

We list our common stock on the NYSE under the symbol "PUMP."

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 it is 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 option



described above may be exercised. The underwriters may cover any covered short position by either exercising the 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.

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

The underwriters and their 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. The underwriters and their 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 addition, affiliates of the underwriters are lenders under our revolving credit facility.

In the ordinary course of their various business activities, the underwriters and their 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 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.

European Economic Area

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

- To any legal entity which is a qualified investor as defined in the Prospectus Directive;
- To fewer than 150 natural or legal persons (other than qualified investors as defined in the Prospectus Directive), subject to obtaining the prior consent of the representatives for any such offer; or

Table of Contents

In any other circumstances falling within Article 3(2) of the Prospectus Directive;

provided that no such offer or shares of our common stock shall result in a requirement for the publication by us or any underwriter of a prospectus pursuant to Article 3 of the Prospectus Directive.

For the purposes of this provision, the expression an "offer to public" in relation to our common shares 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 our common shares to be offered so as to enable an investor to decide to purchase our common shares, as the same may be varied in that Member State by any measure implementing the Prospectus Directive in that Member State, the expression "Prospectus Directive" means Directive 2003/71/EC (as amended), including by Directive 2010/73/EU and includes any relevant implementing measure in the Relevant Member State.

This European Economic Area selling restriction is in addition to any other selling restrictions set out below.

United Kingdom

In the United Kingdom, this prospectus supplement is only addressed to and directed as qualified investors who are (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 entities and other persons to whom it may lawfully be communicated, falling within Article 49(2)(a) to (d) of the Order (all such persons together being referred to as "relevant persons"). Any investment or investment activity to which this prospectus supplement relates is available only to relevant persons and will only be engaged with relevant persons. Any person who is not a relevant person should not act or relay on this prospectus supplement or any of its contents.

Canada

The securities 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 securities must be made in accordance with an exemption form, or in a transaction not subject to, the prospectus supplement 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 offering memorandum (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.

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 supplement 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 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.

LEGAL MATTERS

The validity of the shares of common stock offered hereby by the selling securityholders will be passed upon for us by Latham & Watkins LLP, Houston, Texas. Certain legal matters in connection with this offering will be passed upon for the underwriters by Vinson & Elkins L.L.P., Houston, Texas.

EXPERTS

The consolidated financial statements of the Company as of December 31, 2017 and 2016 and for each of the three years in the period ended December 31, 2017 incorporated by reference in this prospectus supplement have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report appearing therein, and incorporated by reference herein. Such consolidated financial statements have been so included in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

FORWARD-LOOKING STATEMENTS

This prospectus supplement contains forward-looking statements. Statements that are predictive in nature, that depend upon or refer to future events or conditions or that include the words "may," "could," "plan," "project," "budget," "predict," "pursue," "target," "seek," "objective," "believe," "expect," "anticipate," "intend," "estimate," and other expressions that are predictions of or indicate future events and trends and that do not relate to historical matters identify forward-looking statements. Our forward-looking statements include statements about our business strategy, our industry, our future profitability, our expected capital expenditures and the impact of such expenditures on our performance and our capital programs.

A forward-looking statement may include a statement of the assumptions or bases underlying the forward-looking statement. We believe that we have chosen these assumptions or bases in good faith and that they are reasonable. You are cautioned not to place undue reliance on any forward-looking statements. You should also understand that it is not possible to predict or identify all such factors and should not consider the following list to be a complete statement of all potential risks and uncertainties. Factors that could cause our actual results to differ materially from the results contemplated by such forward-looking statements include:

- the level of production of crude oil, natural gas and other hydrocarbons and the resultant market prices of crude oil, natural gas, natural gas liquids and other hydrocarbons;
- changes in general economic and geopolitical conditions;
- competitive conditions in our industry;
- changes in the long-term supply of and demand for oil and natural gas;
- actions taken by our customers, suppliers, competitors and third-party operators;
- changes in the availability and cost of capital;
- our ability to successfully implement our business plan;
- large or multiple customer defaults, including defaults resulting from actual or potential insolvencies;
- the price and availability of debt and equity financing (including changes in interest rates);
- our ability to complete growth projects on time and on budget;
- changes in our tax status;
- technological changes;
- operating hazards, natural disasters, weather-related delays, casualty losses and other matters beyond our control;
- the effects of existing and future laws and governmental regulations (or the interpretation thereof);
- the effects of future litigation; and
- other factors discussed in this prospectus supplement.

You should not place undue reliance on our forward-looking statements. Although forward-looking statements reflect our good faith beliefs at the time they are made, forward-looking statements involve known and unknown risks, uncertainties and other factors, including the factors described under "Risk Factors," which may cause our actual results, performance or achievements to differ materially from anticipated future results, performance or achievements expressed or implied by such forward-looking statements. We undertake no obligation to publicly update or revise any forward-looking statement, whether as a result of new information, future events, changed circumstances or otherwise, unless required by law. These cautionary statements qualify all forward-looking statements attributable to us or persons acting on our behalf.

INCORPORATION OF CERTAIN DOCUMENTS BY REFERENCE

The SEC allows us to "incorporate by reference" information from other documents that we file with it, which means that we can disclose important information to you by referring you to those documents. The information incorporated by reference is considered to be part of this prospectus supplement. Information in this prospectus supplement supersedes information incorporated by reference that we filed with the SEC prior to the date of this prospectus supplement.

We incorporate by reference into this prospectus supplement and the accompanying prospectus the information or documents listed below that we have filed with the SEC (except for information that is furnished rather than filed):

- our Annual Report on Form 10-K for the year ended December 31, 2017;
- the information specifically incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2017 from our Definitive Proxy Statement on Schedule 14A filed with the SEC on April 26, 2018;
- our Quarterly Report on Form 10-Q for the quarter ended March 31, 2018;
- our Current Reports on Form 8-K filed with the SEC on January 29, 2018 and February 27, 2018; and
- the description of our common stock contained in our Form 8-A filed with the SEC on March 16, 2017, including any subsequently filed amendments and reports filed for the purpose of updating such description.

In addition, all documents filed by us with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act (other than the information that is furnished rather than filed) after the date of this prospectus supplement and prior to the filing of a post-effective amendment that indicates that all securities offered hereby have been sold or that deregisters all securities remaining unsold, will be considered to be incorporated by reference into this prospectus supplement and to be a part of this prospectus supplement from the dates of the filing of such documents.

We will furnish without charge to you, on written or oral request, a copy of any documents incorporated by reference, including any exhibits to such documents. You may request a copy of any document incorporated by reference in this prospectus supplement and any exhibit specifically incorporated by reference in those documents, at no cost, by writing or telephoning us at 1706 S. Midkiff, Bldg. B, Midland, Texas 79701. Our telephone number is (432) 688-0012. You may also access the "Investors" section of our website at *www.propetroservices.com.* The information on, or accessible through, our website does not constitute part of, and is not incorporated into, this prospectus supplement, and you should rely only on the information contained in this prospectus supplement when making a decision as to whether to invest in us.

Table of Contents

PROSPECTUS



ProPetro Holding Corp.

Common Stock Preferred Stock

Common Stock Offered by the Selling Securityholders

We may offer and sell the securities identified above, and the selling securityholders may offer and sell shares of common stock, in each case from time to time in one or more offerings. This prospectus provides you with a general description of the securities. We will not receive any proceeds from the sale of our common stock by the selling securityholders.

Each time we or any of the selling securityholders offer and sell securities, we or such selling securityholders will provide a supplement to this prospectus that contains specific information about the offering and, if applicable, the selling securityholders, as well as the amounts, prices and terms of the securities. The supplement may also add, update or change information contained in this prospectus with respect to that offering. You should carefully read this prospectus and the applicable prospectus supplement before you invest in any of our securities.

We may offer and sell the securities described in this prospectus and any prospectus supplement to or through one or more underwriters, dealers and agents, or directly to purchasers, or through a combination of these methods. In addition, the selling securityholders may offer and sell shares of our common stock from time to time, together or separately. If any underwriters, dealers or agents are involved in the sale of any of the securities, their names and any applicable purchase price, fee, commission or discount arrangement between or among them will be set forth, or will be calculable from the information set forth, in the applicable prospectus supplement. See the sections of this prospectus entitled "About this Prospectus" and "Plan of Distribution" for more information. No securities may be sold without delivery of this prospectus and the applicable prospectus supplement describing the method and terms of the offering of such securities.

INVESTING IN OUR SECURITIES INVOLVES RISKS. SEE THE "*RISK FACTORS*" ON PAGE 5 OF THIS PROSPECTUS AND ANY SIMILAR SECTION CONTAINED IN THE APPLICABLE PROSPECTUS SUPPLEMENT CONCERNING FACTORS YOU SHOULD CONSIDER BEFORE INVESTING IN OUR SECURITIES.

Our common stock is listed on the New York Stock Exchange under the symbol "PUMP." On May 9, 2018, the last reported sale price of our common stock on the New York Stock Exchange was \$19.53 per share.

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

The date of this prospectus is May 10, 2018.

TABLE OF CONTENTS

ABOUT THIS PROSPECTUS	1
WHERE YOU CAN FIND MORE INFORMATION; INCORPORATION BY REFERENCE	<u>2</u>
THE COMPANY	<u>4</u>
<u>RISK FACTORS</u>	<u>5</u>
<u>USE OF PROCEEDS</u>	<u>6</u>
RATIO OF EARNINGS TO FIXED CHARGES AND PREFERRED SHARE DIVIDENDS	<u>7</u>
DESCRIPTION OF CAPITAL STOCK	<u>8</u>
SELLING SECURITYHOLDERS	<u>11</u>
PLAN OF DISTRIBUTION	<u>12</u>
LEGAL MATTERS	<u>13</u>
<u>EXPERTS</u>	<u>13</u>

ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement that we filed with the U.S. Securities and Exchange Commission, or the SEC, as a "well-known seasoned issuer" as defined in Rule 405 under the Securities Act of 1933, as amended, using a "shelf" registration process. By using a shelf registration statement, we may sell securities from time to time and in one or more offerings and the selling securityholders to be named in a supplement to this prospectus may, from time to time, sell shares of common stock from time to time in one or more offerings as described in this prospectus. Each time that we or the selling securityholders offer and sell securities, we or the selling securityholders will provide a prospectus supplement to this prospectus that contains specific information about the securities being offered and sold and the specific terms of that offering. We may also authorize one or more free writing prospectus may also add, update or change information contained in this prospectus supplement or free writing prospectus, you should rely on the prospectus supplement or free writing prospectus, as applicable prospectus supplement or free writing prospectus, you should carefully read both this prospectus and the applicable prospectus supplement (and any applicable free writing prospectuse), together with the additional information described under the heading "Where You Can Find More Information; Incorporation by Reference."

Neither we, nor the selling securityholders, have authorized anyone to provide you with any information or to make any representations other than those contained in this prospectus, any applicable prospectus supplement or any free writing prospectuses prepared by or on behalf of us or to which we have referred you. We and the selling securityholders take no responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We and the selling securityholders will not make an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. You should assume that the information appearing in this prospectus and the applicable prospectus supplement to this prospectus is accurate only as of the date on its respective cover, that the information appearing in any applicable free writing prospectus is accurate only as of the date of that free writing prospectus, and that any information incorporated by reference is accurate only as of the date of the document incorporated by reference, unless we indicate otherwise. Our business, financial condition, results of operations and prospects may have changed since those dates. This prospectus incorporates by reference, and any prospectus supplement or free writing prospectus may contain and incorporate by reference, market data and industry statistics and forecasts that are based on independent industry publications and other publicly available information. Although we believe these sources are reliable, we do not guarantee the accuracy or completeness of this information and we have not independently verified this information. In addition, the market and industry data and forecasts that may be included or incorporated by reference in this prospectus, any prospectus supplement or any applicable free writing prospectus may involve estimates, assumptions and other risks and uncertainties and are subject to change based on various factors, including those discussed under the heading "Risk Factors" contained in this prospectus, the applicable prospectus supplement and any applicable free writing prospectus, and under similar headings in other documents that are incorporated by reference into this prospectus. Accordingly, investors should not place undue reliance on this information.

When we refer to "ProPetro Holding Corp.," "we," "our," "us" and the "Company" in this prospectus, we mean ProPetro Holding Corp. and its consolidated subsidiaries, unless otherwise specified. When we refer to "you," we mean the potential holders of the applicable series of securities.

WHERE YOU CAN FIND MORE INFORMATION; INCORPORATION BY REFERENCE

Available Information

We file reports, proxy statements and other information with the SEC. Information filed with the SEC by us can be inspected and copied at the Public Reference Room maintained by the SEC at 100 F Street, N.E., Washington, D.C. 20549. You may also obtain copies of this information by mail from the Public Reference Room of the SEC at prescribed rates. Further information on the operation of the SEC's Public Reference Room in Washington, D.C. can be obtained by calling the SEC at 1-800-SEC-0330. The SEC also maintains a web site that contains reports, proxy and information statements and other information about issuers, such as us, who file electronically with the SEC. The address of that website is *http://www.sec.gov*.

Our web site address is *http://www.propetroservices.com*. The information on our web site, however, is not, and should not be deemed to be, a part of this prospectus.

This prospectus and any prospectus supplement are part of a registration statement that we filed with the SEC and do not contain all of the information in the registration statement. The full registration statement may be obtained from the SEC or us, as provided below. Other documents establishing the terms of the offered securities are or may be filed as exhibits to the registration statement or documents incorporated by reference in the registration statement. Statements in this prospectus or any prospectus supplement about these documents are summaries and each statement is qualified in all respects by reference to the document to which it refers. You should refer to the actual documents for a more complete description of the relevant matters. You may inspect a copy of the registration statement at the SEC's Public Reference Room in Washington, D.C. or through the SEC's website, as provided above.

Incorporation by Reference

The SEC's rules allow us to "incorporate by reference" information into this prospectus, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The information incorporated by reference is deemed to be part of this prospectus, and subsequent information that we file with the SEC will automatically update and supersede that information. Any statement contained in this prospectus or a previously filed document incorporated by reference will be deemed to be modified or superseded for purposes of this prospectus to the extent that a statement contained in this prospectus or a subsequently filed document incorporated by reference modifies or replaces that statement.

This prospectus and any accompanying prospectus supplement incorporate by reference the documents set forth below that have previously been filed with the SEC (except for information that is furnished rather than filed):

- Our Annual Report on Form 10-K for the year ended December 31, 2017, filed with the SEC on March 27, 2018.
- The information specifically incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2017 from our Definitive Proxy Statement on Schedule 14A filed with the SEC on April 26, 2018.
- Our Quarterly Report on Form 10-Q for the quarter ended March 31, 2018, filed with the SEC on May 9, 2018.
- Our Current Reports on Form 8-K filed with the SEC on January 29, 2018 and February 27, 2018.

•

The description of our Common Stock contained in our Registration Statement on Form 8-A, dated March 16, 2017, filed with the SEC on March 16, 2017 and any amendment or report filed with the SEC for the purpose of updating the description.

All reports and other documents we subsequently file pursuant to Section 13(a), 13(c), 14 or 15(d) of the Securities Exchange Act of 1934, which we refer to as the "Exchange Act" in this prospectus, prior to the termination of this offering but excluding any information furnished to, rather than filed with, the SEC, will also be incorporated by reference into this prospectus and deemed to be part of this prospectus from the date of the filing of such reports and documents.

You may request a free copy of any of the documents incorporated by reference in this prospectus by writing or telephoning us at the following address:

ProPetro Holding Corp. 1706 S. Midkiff, Bldg. B, Midland, Texas 79701 (432) 688-0012

Exhibits to the filings will not be sent, however, unless those exhibits have specifically been incorporated by reference in this prospectus or any accompanying prospectus supplement.

THE COMPANY

We are a growth-oriented, Midland, Texas-based oilfield services company providing hydraulic fracturing and other complementary services to leading upstream oil and gas companies engaged in the exploration and production ("E&P") of North American unconventional oil and natural gas resources. Our operations are primarily focused in the Permian Basin, where we have cultivated long-standing customer relationships with some of the region's most active and well-capitalized E&P companies. The Permian Basin is widely regarded as the most prolific oil-producing area in the United States, and we believe we are currently one of the largest providers of hydraulic fracturing services in the region by hydraulic horsepower, or HHP, with a current aggregate deployed capacity of 815,000 HHP.

In addition to our core hydraulic fracturing operations, we also offer a suite of complementary well completion and production services, including cementing, acidizing, coiled tubing, flowback services, surface air drilling and Permian drilling. We believe these complementary services create operational efficiencies for our customers and allow us to capture a greater portion of their capital spending across the lifecycle of an unconventional well.

We filed our certificate of incorporation with the Secretary of State of Delaware on March 16, 2017.

Our principal executive offices are located at 1706 S. Midkiff, Bldg. B, Midland, Texas 79701, and our telephone number is (432) 688-0012.

RISK FACTORS

Investment in any securities offered pursuant to this prospectus and the applicable prospectus supplement involves risks. You should carefully consider the risk factors incorporated by reference to our most recent Annual Report on Form 10-K and any subsequent Quarterly Reports on Form 10-Q or Current Reports on Form 8-K we file after the date of this prospectus, and all other information contained or incorporated by reference into this prospectus, as updated by our subsequent filings under the Exchange Act, and the risk factors and other information contained in the applicable prospectus supplement and any applicable free writing prospectus before acquiring any of such securities. The occurrence of any of these risks might cause you to lose all or part of your investment in the offered securities.

USE OF PROCEEDS

We intend to use the net proceeds from the sale of the securities as set forth in the applicable prospectus supplement. We will not receive any of the proceeds from the sale of common stock being offered by any of the selling securityholders.

RATIO OF EARNINGS TO FIXED CHARGES AND PREFERRED SHARE DIVIDENDS

The following table sets forth the historical ratios of earnings to fixed charges and preferred share dividends for ProPetro Holding Corp. and its consolidated subsidiaries for the periods indicated.

	Three Months	Year Ended December 31,		
	Ended March 31,	2017	2016	2015
	2018	2017	2016	2015
Ratio of earnings (loss) to fixed charges(1)	35.0	3.0	-(2)) —(3)

- (1) For the periods indicated above, we have no outstanding shares of preferred stock with required dividend payments. Therefore, the ratios of earnings to combined fixed charges and preferred stock dividends are identical to the ratios presented in the tables above.
- (2) Earnings were inadequate to cover fixed charges by \$81.1 million for the year ended December 31, 2016.
- (3) Earnings were inadequate to cover fixed charges by \$71.2 million for the year ended December 31, 2015.

DESCRIPTION OF CAPITAL STOCK

We are a Delaware corporation. The following description of our capital stock, certificate of incorporation, bylaws, registration rights agreement and stockholders agreement does not purport to be complete and is qualified in its entirety by reference to the provisions of applicable law and to our certificate of incorporation, bylaws, registration rights agreement and stockholders agreement, which have been publicly filed with the SEC. See "Where You Can Find More Information; Incorporation by Reference."

Our authorized capital stock consists of:

- 200,000,000 shares of common stock, \$0.001 par value; and
- 30,000,000 shares of preferred stock; \$0.001 par value.

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 shareholder, 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 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 the certificate of incorporation (including any certificate of designations relating to any series of preferred stock) or pursuant to the Delaware General Corporation Law (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. 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 the 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 certificate of incorporation authorizes our board of directors, subject to any limitations prescribed by law and in our stockholders agreement, without further stockholder approval, to establish and to issue from time to time one or more classes or series of preferred stock, par value \$0.001 per share, covering up to an aggregate of 30,000,000 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 the 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 will not be entitled to vote at or receive notice of any meeting of stockholders.

Registration Rights Agreement

We have entered into a registration rights agreement with certain shareholders, including Energy Capital Partners II, LP, or Energy Capital Partners, and Special Situations Fund III, L.P. Pursuant to this registration rights agreement, we are required to cause a shelf registration statement to be filed as soon as permitted by the applicable securities laws. Also pursuant to the registration rights agreement, certain shareholders have the right to demand we undertake an underwritten offering of such shareholders' shares of our common stock at any time after the first anniversary of the consummation of our IPO. Pursuant to this provision, Energy Capital Partners has the right to demand up to five underwritten offerings, and Special Situations Fund III, L.P. has the right to demand up to two underwritten offerings, so long as the minimum expected offering price is \$15 million. In addition, shareholders have certain "piggyback" rights when we undertake an underwritten offering of shares of our common stock, subject to customary cubacks.

Stockholders Agreement

We have entered into a stockholders agreement with Energy Capital Partners that provides Energy Capital Partners and its affiliates who hold our shares certain rights to designate nominees for election to our board of directors. The stockholders agreement provides that, subject to compliance with applicable law and stock exchange rules, for so long as Energy Capital Partners and its affiliates beneficially own at least 30% of our common stock then outstanding, it shall be entitled to designate a number of directors equal to one fewer than a majority of the directors; for so long as Energy Capital Partners and its affiliates beneficially own at least 20% of our common stock then outstanding, it shall be entitled to designate the greater of three directors and 25% of the total number of directors (rounded up to the next whole number); and for so long as Energy Capital Partners and its affiliates beneficially own at least 10% of our common stock then outstanding, it shall be entitled to designate the greater of two directors and 15% of the total number of directors (rounded up to the next whole number); and for so long as Energy Capital Partners and its affiliates beneficially own at least 5% of our common stock then outstanding, it shall be entitled to designate the greater of two directors and 15% of the total number of directors (rounded up to the next whole number); and for so long as Energy Capital Partners and its affiliates beneficially own at least 5% of our common stock then outstanding, it shall be entitled to designate one director.

Energy Capital Partners is entitled to designate the replacement for any of its board designees whose board service terminates prior to the end of the director's term regardless of their beneficial ownership at such time. Energy Capital Partners also has the right, but not the obligation, to designate at least one of its nominees as a member to each of the committees of our board of directors for so long as it has the right to designate at least one director, subject to compliance with applicable law and stock exchange rules.

Additionally, for as long as Energy Capital Partners and its affiliates hold at least 10% of our outstanding common stock, any directors designated by Energy Capital Partners will have certain information and access rights to our management, including the right to receive our annual budget, business plan and financial forecasts.

The stockholders agreement will terminate upon the earliest to occur of (a) the dissolution of the Company, (b) the date on which Energy Capital Partners and its affiliates cease to own any outstanding shares of our common stock and (c) the written agreement of the company and Energy Capital Partners.

Anti-Takeover Effects of Provisions of Our Certificate of Incorporation, our Bylaws and our Stockholders Agreement

Some provisions of the DGCL our certificate of incorporation, our bylaws and our stockholders agreement 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 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.

Anti-Takeover Effects of Delaware Law

Section 203 of the DGCL prohibits a Delaware corporation, including those whose securities are listed for trading on the NYSE, from engaging in any business combination (as defined in Section 203) with any interested stockholder (as defined in Section 203) for a period of three years following the date that the stockholder became an interested stockholder, unless:

- the business combination or the transaction which resulted in the shareholder becoming an interested shareholder is approved by the board of directors before the date the interested shareholder attained that status;
- upon consummation of the transaction that resulted in the shareholder becoming an interested shareholder, the interested shareholder 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 shareholders by at least two thirds of the outstanding voting stock that is not owned by the interested shareholder.

A corporation may elect not to be subject to Section 203 of the DGCL. We have elected to not be subject to the provisions of Section 203 of the DGCL.

Transfer Agent and Registrar

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

Listing

We list our common stock on the NYSE under the symbol "PUMP."

SELLING SECURITYHOLDERS

Information about selling securityholders, where applicable, will be set forth in a prospectus supplement, in a post-effective amendment or in filings we make with the SEC under the Exchange Act that are incorporated by reference.

PLAN OF DISTRIBUTION

We or any of the selling securityholders may sell the offered securities from time to time:

- through underwriters or dealers;
- through agents;
- directly to one or more purchasers; or
- through a combination of any of these methods of sale.

We will identify the specific plan of distribution, including any underwriters, dealers, agents or direct purchasers and their compensation in the applicable prospectus supplement.

LEGAL MATTERS

Latham & Watkins LLP will pass upon certain legal matters relating to the issuance and sale of the securities offered hereby on behalf of ProPetro Holding Corp. Additional legal matters may be passed upon for us, the selling securityholders or any underwriters, dealers or agents, by counsel that we will name in the applicable prospectus supplement.

EXPERTS

The consolidated financial statements incorporated in this Prospectus by reference from the ProPetro Holding Corp. Annual Report on Form 10-K have been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report, which is incorporated herein by reference. Such consolidated financial statements have been so incorporated in reliance upon the report of such firm given upon their authority as experts in accounting and auditing.

1	\mathbf{a}
н	
r	

12,000,000 Shares

ProPetro Holding Corp.

Common Stock



ProPetro Holding Corp.

Goldman Sachs & Co. LLC

Barclays