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

FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2018

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to
Commission File Number 001-38382

FTS INTERNATIONAL, INC.
(Exact Name of Registrant as Specified in Its Charter)

Delaware (State or other Jurisdiction of Incorporation or Organization)	**30-0780081** (I.R.S. Employer Identification No.)
777 Main Street, Suite 2900, Fort Worth, Texas (Address of Principal Executive Offices)	**76102** (Zip Code)

(817) 862-2000
(Telephone Number, Including Area Code)

Securities registered pursuant to Section 12(b) of the Securities Exchange Act of 1934:

Title of each class	Name of each exchange on which registered
Common Stock, par value $0.01 per share	**New York Stock Exchange**

Securities registered pursuant to Section 12(g) of the Securities Exchange Act of 1934:
None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☐ No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☒

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

Large Accelerated Filer	☐	Accelerated Filer	☐
Non-Accelerated Filer	☒	Smaller reporting company	☐
Emerging growth company	☐		

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of June 29, 2018, the last trading day of the registrant's most recently completed second fiscal quarter, the aggregate market value of the common stock held by non-affiliates of the registrant was approximately $468.2 million, based on the closing price of the registrant's common stock on that date. As of February 22, 2019, the registrant had 109,794,386 shares of common stock, $0.01 par value, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the proxy statement for the registrant's 2019 annual meeting of stockholders are incorporated by reference in Part III of this Form 10-K.

FTS INTERNATIONAL, INC.
Form 10-K
Year Ended December 31, 2018

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Cautionary Statement Regarding Forward-Looking Statements

This annual report contains "forward-looking statements" that are subject to risks and uncertainties. All statements other than statements of historical or current fact included in this annual report are forward-looking statements. Forward-looking statements refer to our current expectations and projections relating to our financial condition, results of operations, plans, objectives, strategies, future performance and business. Forward-looking statements may be identified by the fact that they do not relate strictly to historical or current facts. These statements may include words such as "anticipate," "assume," "believe," "can have," "contemplate," "continue," "could," "design," "due," "estimate," "expect," "goal," "intend," "likely," "may," "might," "objective," "plan," "predict," "project," "potential," "seek," "should," "target," "will," "would" and other words and terms of similar meaning in connection with any discussion of the timing or nature of future operational performance or other events. For example, all statements we make relating to our estimated and projected costs, expenditures and growth rates, our plans and objectives for future operations, growth or initiatives or strategies are forward-looking statements. All forward-looking statements are subject to risks and uncertainties that may cause actual results to differ materially from those that we expect and, therefore, investors should not unduly rely on such statements. The risks that could cause these forward-looking statements to be inaccurate include but are not limited to:

- a decline in domestic spending by the onshore oil and natural gas industry;
- volatility in oil and natural gas prices;
- customers' inability to maintain or increase their reserves going forward;
- deterioration in general economic conditions or a weakening of the broader energy industry;
- the competitive nature of the industry in which we conduct our business;
- the effect of a loss of, or financial distress of, one or more significant customers;
- nonpayment by customers we extend credit to;
- demand for services in our industry;
- actions of OPEC, its members and other state-controlled oil companies relating to oil price and production controls;
- a decline in demand for proppant;
- our inability to employ a sufficient number of key employees, technical personnel and other skilled or qualified workers;
- the occurrence of a significant event or adverse claim in excess of the insurance coverage we maintain;
- fines or penalties (administrative, civil or criminal), revocations of permits, or issuance of corrective action orders for noncompliance with health, safety and environmental laws and regulations;
- changes in laws and regulations which impose additional requirements or restrictions on business operations;
- federal, state and local regulation of hydraulic fracturing and other oilfield service activities, as well as exploration and production ("E&P") activities, including public pressure on governmental bodies and regulatory agencies to regulate our industry;
- existing or future laws and regulations related to greenhouse gases and climate change;
- our ability to obtain permits, approvals and authorizations from governmental and third parties, and the effects of or changes to U.S. and foreign government regulation;
- restrictions on drilling activities intended to protect certain species of wildlife;
- conservation measures and technological advances which reduce demand for oil and natural gas;
- the level of global and domestic oil and natural gas inventories;

- the price and availability of alternative fuels and energy sources;
- the discovery rates of new oil and natural gas reserves;
- limitations on construction of new natural gas pipelines or increases in federal or state regulation of natural gas pipelines;
- the availability of water resources, suitable proppant and chemicals in sufficient quantities for use in hydraulic fracturing fluids;
- the cost of exploring for, developing, producing and delivering oil and natural gas;
- third party claims for possible infringement of intellectual property rights;
- introduction of new drilling or completion techniques, or services using new technologies subject to patent or other intellectual property protections;
- lead times associated with acquiring equipment and products and availability of qualified personnel;
- loss or corruption of our information or a cyberattack on our computer systems;
- one or more of our directors may not reside in the United States limiting the ability of investors from obtaining or enforcing judgments against them;
- adverse weather conditions causing stoppage or delay in operations;
- a terrorist attack or armed conflict disrupting operations;
- additional economic, political and regulatory risks related to international operations;
- geopolitical developments and political instability in oil and natural gas producing countries;
- our ability to utilize our net operating losses;
- our inability to service our debt obligations;
- adverse effects on our financial strategy and liquidity;
- increases in interest rates; and
- uncertainty in capital and commodities markets and the ability of oil and natural gas producers to raise equity capital and debt financing.

We make many of our forward-looking statements based on our operating budgets and forecasts, which are based upon detailed assumptions. While we believe that our assumptions are reasonable, we caution that it is very difficult to predict the impact of known factors, and it is impossible for us to anticipate all factors that could affect our actual results.

See the “Risk Factors” included in Item 1A of this annual report for a more complete discussion of the risks and uncertainties mentioned above and for discussion of other risks and uncertainties we face that could cause our forward-looking statements to be inaccurate. All forward-looking statements attributable to us are expressly qualified in their entirety by these cautionary statements as well as others made in this annual report and hereafter in our other SEC filings and public communications. All forward-looking statements made by us should be evaluated in the context of these risks and uncertainties.

We caution that the risks and uncertainties identified by us may not be all of the factors that are important to investors. Furthermore, the forward-looking statements included in this annual report are made only as of the date hereof. We undertake no obligation to publicly update or revise any forward-looking statement as a result of new information, future events or otherwise, except as required by law.

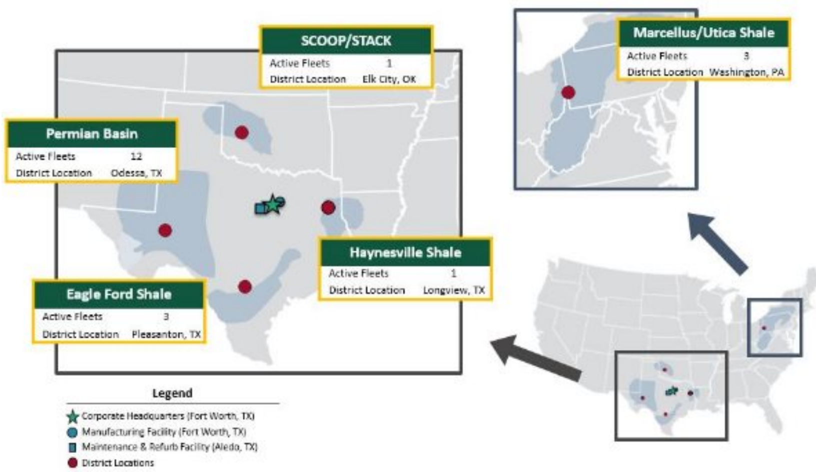
PART I

ITEM 1. BUSINESS

General

FTS International, Inc. (the “Company”, “we”, “our”) was originally formed in 2000. We are one of the largest providers of hydraulic fracturing services in North America. Our services enhance hydrocarbon flow from oil and natural gas wells drilled by E&P companies in shale and other unconventional resource formations. We have 1.7 million total hydraulic horsepower across 34 fleets, with 19 fleets active and one fleet under construction and awaiting final assembly as of December 31, 2018. Our significant customers have included Anadarko Petroleum Corporation, Ascent Resources Utica Holdings, LLC, Centennial Resource Development, Inc., Chesapeake Energy Corporation, Devon Energy Corporation, Diamondback Energy, Inc., EOG Resources, Inc., EQT Corporation, and other leading E&P companies that specialize in unconventional oil and natural gas resources in North America.

We operate in five of the most active major unconventional basins in the United States: the Permian Basin, the SCOOP/STACK Formation, the Marcellus/Utica Shale, the Eagle Ford Shale and the Haynesville Shale. The following map shows the basins in which we operate and the number of fleets operated in each basin as of January 31, 2019.



We manufacture and refurbish many of the components used by our fleets, including consumables, such as fluid-ends. We also perform substantially all the maintenance, repair and refurbishment of our hydraulic fracturing fleets, including the reactivation of idle equipment. Our cost to produce components and reactivate fleets is significantly less than the cost to purchase comparable quality components and fleets from third-party suppliers. For example, we manufacture fluid-ends and power-ends at a cost that is approximately 50% less than purchasing them from outside suppliers. In addition, our capabilities allow us to perform full-scale refurbishments of our fracturing units, including refurbishing the engines and transmissions, at a cost that is approximately half the cost of utilizing an original equipment manufacturer or other outside supplier.

We designed and assembled all of our existing fleets using internal resources and are able to assemble new fleets internally at a substantial discount to the cost of buying them new from third-party providers. We have a uniform fleet of high-horsepower hydraulic fracturing equipment, designed for completions work in oil and natural gas basins requiring high levels of pressure, flow rate and sand intensity. The standardized, “plug and play” nature of our fleet provides us with several advantages, including: reduced repair and maintenance costs; reduced inventory costs; the ability to redeploy equipment among operating basins; and reduced complexity in our operations, which improves our safety and operational performance.

Our large scale and culture of innovation allows us to take advantage of leading technological solutions. We have been a fast adopter of new technologies focused on: increasing fracturing effectiveness for our customers; reducing the operating costs of our equipment; and enhancing the health, safety, and environmental (“HSE”) conditions at our well sites.

Safety is at the core of our operations. Our safety record over the last three years was the best in our history. We believe our safety record is significantly better than our industry peer group, based on U.S. Bureau of Labor Statistics reports from 2011 through 2017. For the past three years, we believe our total recordable incident rate was less than half of the industry average. Many of our customers impose minimum safety requirements on their suppliers of hydraulic fracturing services, and some of our competitors are not permitted to bid on work for certain customers because they do not meet those customers’ minimum safety requirements. Because safety is important to our customers, our safety score helps our commercial team to win business from our customers. Our safety focus is also a morale benefit for our crews, which enhances our employee retention rates. Finally, we believe that continually searching for ways to make our operations safer is the right thing to do for our employees and our customers.

Our Services

Hydraulic Fracturing

Our primary service offering is providing hydraulic fracturing services, also known as pressure pumping, to oil and natural gas E&P companies. These services are designed to enhance hydrocarbon flow in oil and natural gas wells, thus increasing the amount of hydrocarbons recovered.

The development of resources in unconventional reservoirs, including oil and natural gas shales, is a technically and operationally challenging segment of the oilfield services market that has experienced strong growth worldwide, particularly in the United States.

Oil and natural gas wells are typically divided into one or more “stages,” which are isolated zones that focus the high-pressure fluid and proppant from the hydraulic fracturing fleet into distinct portions of the well and surrounding reservoir. The number of stages that will divide a well is determined by the customer’s proposed job design. Our customers typically measure our operational performance in terms of the number of stages fractured and how well we minimize non-productive time on our jobs. As a result, we believe the average number of stages completed per active fleet in a given period of time is an important operating metric for our business. During the last two years, as a result of our customers trending toward more intense completions, our quarterly average stage length, measured in minutes to complete, has increased by approximately 8%. Despite the longer average stage lengths, we have been able to increase our average stages per active fleet to achieve record levels in 2017 and 2018. We were able to increase our average stage per active fleets because the primary contributor to the number of stages we complete in a quarter is our ability to reduce non-productive time on our equipment, rather than variability in operating basins or formation characteristics.

Hydraulic fracturing represents the largest cost of completing a shale oil or natural gas well. The process consists of pumping a fracturing fluid into a well casing or tubing at sufficient pressure to fracture, or prop open, the formation. The fracturing fluid consists of water and sand, or other proppant, mixed with a small amount of chemicals. Once the pressure opens the fractures, the proppants act as a wedge that keep the fractures open, allowing the trapped hydrocarbons to flow more freely. Our customers are responsible for the disposal of the fracturing fluid that flows back out of the well, and we are not involved in that process or in the disposal of the fluid. As a result of a successful fracturing process, hydrocarbon recovery rates are substantially enhanced; thus, increasing the return on investment for our customer. The amount of hydrocarbons produced from a typical shale oil or natural gas well generally declines quickly. As a result, E&P companies must fracture new wells to maintain production levels.

Each of our fleets typically consists of 10 to 20 hydraulic fracturing units along with certain ancillary equipment. Our hydraulic fracturing units consist primarily of a high-pressure pump, a diesel or combined diesel and natural gas engine, a transmission and various other supporting equipment mounted on a trailer. The high pressure pump consists of two key assemblies: the fluid-end and the power-end. Although the power-end of our pumps generally lasts several years, the fluid-end, which is the part of the pump through which the fracturing fluid is expelled under high pressure, is a shorter-lasting consumable, typically lasting less than one year. We refer to the group of hydraulic fracturing units, auxiliary equipment and vehicles necessary to perform a typical fracturing job as a "fleet" and the personnel assigned to each fleet as a "crew." Our fleets operate primarily on a 24-hour-per-day basis, in which we typically staff three crews per fleet, including one crew with the day off. Our focus on 24-hour operations allows us to keep our equipment working for more hours per day, which we believe enhances our return-on-assets over time.

Each hydraulic fracturing fleet includes a mobile, on-site control center that monitors pressures, rates and volumes, as applicable. Each control center is equipped with high bandwidth satellite hardware that provides continuous upload and download of job telemetry data. The data is delivered on a real-time basis to on-site job personnel, the customer and our national operations center for display in both digital and graphical form.

We prefer to enter into service agreements with our customers for one or more "dedicated" fleets, rather than providing our fleets for "spot work." Under our typical dedicated fleet agreement, we deploy one or more of our hydraulic fracturing fleets exclusively to the customer to follow the customer's completion schedule and job specifications until the agreement expires or is terminated in accordance with its terms. By contrast, under a typical spot work agreement, the fleet moves between customers as work becomes available. We believe that our strategy of pursuing dedicated fleet agreements leads to higher fleet utilization, as measured by the number of days each fleet is working per month, which we believe reduces our month-to-month revenue volatility and improves our revenue and profitability. See Note 2 — "Summary of Significant Accounting Policies" in Notes to our Consolidated Financial Statements for discussion of our revenue recognition and pricing under our service agreements.

Wireline Services

Our wireline services primarily consist of setting plugs between hydraulic fracturing stages, creating perforations within hydraulic fracturing stages and logging the characteristics of resource formations. Our wireline services equipment is designed to operate under high pressure in unconventional resource formations without delaying hydraulic fracturing operations.

Other

We own a 45% interest in SinoFTS, which is a Chinese joint venture that we formed in June 2014 with Sinopec Oilfield Service Corporation ("Sinopec") to provide hydraulic fracturing services in China. On January 9, 2019, we filed an arbitration proceeding with the Singapore International Arbitration Centre to resolve a dispute related to the manner of operations by our JV partner.

Our Strategy

Our primary business objective is to be the largest pure-play provider of hydraulic fracturing services within U.S. unconventional resource basins. We intend to achieve this objective through the following strategies:

Maintain a disciplined approach that optimizes cash flow

All levels of our organization focus on providing the safest work environment for our employees and on generating the highest level of profitability and cash generation as possible, within the limitations of industry conditions.

We focus on operating our equipment at the highest level of efficiency to maximize billing activity for each of our fleets, which is often measured in terms of stages completed per active fleet. In turn, we strive to charge a competitive rate to our customer and to be compensated for the high level of efficiency that we provide. This ultimately leads to an overall lower cost of production for our customer.

In addition, we are a cost focused organization that embraces innovation to continually find ways to lower the cost to operate our business. This is enabled by our culture and our in-house manufacturing capabilities, which allow us to continuously identify and execute improvements in the design and operation of our equipment.

Capitalize on an increased demand for our services with quick deployment and low cost fleet reactivations

We believe the demand for hydraulic fracturing is strong and will continue to grow into the future as more customers focus on the development of their onshore resources. We believe that the cost per barrel of oil from unconventional onshore production is one of the lowest in the United States, and, as a result, E&P capital has shifted towards this type of production. Industry reports have forecasted that the number of horizontal wells drilled in the United States will continue to increase. In addition, the sand utilized in the completion of a horizontal well has more than doubled since 2014 as operators continue to innovate to find the optimal job design. As one of the largest hydraulic fracturing service providers in North America, we believe we are well positioned to capitalize on the continued increase in the onshore oil and natural gas E&P market.

We have 1.7 million total hydraulic horsepower across 34 total fleets, with 19 fleets active and one fleet under construction and awaiting final assembly as of December 31, 2018. We believe our in-house manufacturing capabilities allow us to reactivate equipment quicker and at a lower cost than competitors.

Deepen and expand relationships with customers that value our completions efficiency

We service our customers primarily with dedicated fleets and 24-hour operations. We dedicate one or more of our fleets exclusively to the customer for a period of time, allowing for those fleets to be integrated into the customer’s drilling and completion schedule. As a result, we are able to achieve higher levels of utilization, as measured by the number of days each fleet is working per month, which increases our profitability. In addition, we operate our fleets on a 24-hour basis, allowing us to complete our services more efficiently with the least amount of non-productive time. Accordingly, we seek to partner with customers that have a large number of wells needing completion and that value efficiency in the performance of our service. Specifically, we target customers whose completions activity typically involves minimal non-productive time between stages, a high number of stages per well, multiple wells per pad and a short distance from one well pad site to the next. This strategy aligns with the strategy of many of our customers, who are trying to achieve a manufacturing-style model of drilling and completing wells in a sequential pattern to maximize effective acreage. We plan to leverage this strategy to expand our relationships with our existing customers as we continue to attract new customers.

Capitalize on our uniform fleet, leading scale and significant basin diversity to provide superior performance with reduced operating costs

We primarily serve large independent E&P companies that specialize in unconventional oil and natural gas resources in North America. Because we operate for customers with significant scale in each of our operating basins, we have the diversity to react to and benefit from positive activity trends in any basin with a balanced exposure to oil and natural gas. Our uniform fleet allows us to cost-effectively redeploy equipment and fleets among existing operating basins to capture the best pricing and activity trends. The uniform fleet is easier to operate and maintain, resulting in reduced non-productive time as well as lower training costs and inventory stocking requirements. Our geographic breadth also provides us with opportunities to capitalize on customer relationships in one basin in order to win business in other basins in which the customer operates. We intend to leverage our scale, standardized equipment and cost structure to gain market share and win new business.

Rapidly adopt new technologies in a capital efficient manner

Our large scale and culture of innovation allow us to take advantage of leading technological solutions. We have been a fast adopter of new technologies focused on: increasing fracturing effectiveness for our customers, reducing the operating costs of our equipment and enhancing the HSE conditions at our well sites.

Recent examples of initiatives aimed at reducing our operating costs include: vibration sensors with predictive maintenance analytics on our heavy equipment; stainless steel fluid-ends with a longer useful life; the ability to automate certain portions of our operations; and adoption of hardened alloys and lubricant blends for our consumables. Recent examples of initiatives aimed at improving our HSE conditions include: dual fuel engines that can run on both natural gas and diesel fuel; electronic pressure relief systems; spill prevention and containment solutions; dust control mitigation; electronic logging devices; and leading containerized proppant delivery solutions.

Reduce debt and maintain a more conservative capital structure

To improve our financial flexibility, we have been focused on reducing our debt levels and maintaining a sufficient liquidity level. We believe we should be able to not only make the investments necessary to remain a market leader in hydraulic fracturing, but also to continue to strengthen our balance sheet.

Reducing our indebtedness remains a top priority. If we are able to further reduce our indebtedness and continue to generate high levels of cash flow from operations, we could return value to stockholders.

Customers

The customers we serve are primarily large, independent E&P companies that specialize in unconventional oil and natural gas resources in North America. The following table shows the customers that represented more than 10% of our total revenue during the years ended December 31, 2018, 2017 and 2016. The loss of any of our largest existing customers could have a material adverse effect on our results of operations. While we view revenue as an important metric in assessing customer concentration, we also compare and manage our customer portfolio based on the number of fleets we place with each customer.

	Year Ended December 31,		
	2018	2017	2016
EQT Production Company	12 %	*	12 %
Devon Energy Corporation	12 %	*	*
Newfield Exploration	*	*	18 %
EP Energy Corporation	*	*	11 %
Vine Oil and Gas, L.P.	*	*	10 %

*Less than 10%.

Suppliers

We purchase some of the parts that we use in the refurbishment and repair of our heavy equipment, such as hydraulic fracturing units and blenders, and in the refurbishment, repair and manufacturing of certain major replacement components of our heavy equipment such as fluid-ends, power-ends, engines, transmissions, radiators and trailers. We do not currently expect significant interruptions in the supply of these materials. While we believe that we will be able to make satisfactory alternative arrangements in the event of any interruption in the supply of these materials and/or products by one of our suppliers, there can be no assurance that there will be no price or supply issues over the long-term.

When requested by the customer, we also purchase the proppants and chemicals we use in our operations and the diesel fuel for our equipment from a variety of suppliers throughout the United States. To date, we have generally been able to obtain the supplies necessary to support our operations on a timely basis at competitive prices. In the past, we have experienced some delays in obtaining these materials during periods of high demand. We have a long-term supply agreement with one vendor to supply a significant portion of the proppant we procure until 2024. This agreement contains a fixed volume of purchases at market-based variable pricing with minimum unconditional purchase obligations. These minimum purchase obligations can change based upon the vendors' ability to supply the minimum requirements.

Competition

The market in which we operate is highly competitive and highly fragmented. Our competition includes multi-national oilfield service companies as well as regional competitors. Our major multi-national competitors are Halliburton Company and Schlumberger Limited, each of which has significantly greater financial resources than we do. Our major domestic competitors are RPC, Inc., Superior Energy Services, ProPetro Holding Corp., Patterson-UTI Energy, Inc., BJ Services, Inc., Liberty Oilfield Services Inc. and Keane Group, Inc. Certain of these competitors provide a number of oilfield services and products in addition to hydraulic fracturing. We also face competition from smaller regional service providers in some of the geographies in which we operate.

Competition in our industry is based on a number of factors, including price, service quality, safety, and in some cases, breadth of products. We believe we consistently deliver exceptional service quality, based in part on the durability of our equipment. Our durable equipment reduces non-productive time due to equipment failure and allows our customers to avoid costs associated with delays in completing their wells. By being able to meet the most demanding pressure and flow rate requirements, our equipment also enables us to operate efficiently in challenging geological environments in which some of our competitors cannot operate effectively.

Cyclical Nature of Industry

We operate in a highly cyclical industry driven mainly by the level of horizontal drilling activity in the United States, which in turn depends largely on current and anticipated future crude oil and natural gas prices and production decline rates. A critical factor in assessing the outlook for the industry is the supply and demand for both oil and natural gas. Demand for oil and natural gas is subject to large and rapid fluctuations. These fluctuations are driven by commodity demand in the industry and corresponding price increases. When oil and natural gas prices increase, producers generally increase their capital expenditures, which generally results in greater revenues and profits for oilfield service companies. However, increased capital expenditures also ultimately result in greater production, which historically, has resulted in increased supplies and reduced prices that, in turn, tend to reduce demand for oilfield services such as hydraulic fracturing services.

The pricing for our services is also driven by the industry capacity of hydraulic fracturing equipment. Historically, the industry has built additional equipment to supply the increased demand. When the demand declines, the industry has more equipment than what is needed by customers. This often leads to a decline in the price for our services until equipment is de-activated and the supply and demand fundamentals are closer to balanced.

For these reasons, our results of operations may fluctuate from quarter to quarter and from year to year, and these fluctuations may distort period-to-period comparisons of our results of operations.

Seasonality

Seasonality has not significantly affected our overall operations. However, toward the end of some years, we experience slower activity in our pressure pumping operations in connection with the holidays and as customers' capital expenditure budgets are depleted. Similarly, the beginning of some years have a slow start as customers are starting a new capital budget cycle and our operations are more prone to experience winter weather. Occasionally, our operations have been negatively impacted by severe weather conditions that cause disruption to our supply chain or our ability to transport materials and equipment to the job site.

Employees

At December 31, 2018, we had approximately 1,780 employees. Our employees are not covered by collective bargaining agreements, nor are they members of labor unions. We consider our relationship with our employees to be good.

Insurance

Our operations are subject to hazards inherent in the oil and natural gas industry, including accidents, blowouts, explosions, fires, oil spills and hazardous materials spills. These conditions can cause personal injury or loss of life, damage to or destruction of property, equipment, the environment and wildlife and interruption or suspension of operations, among other adverse effects. If a serious accident were to occur at a location where our equipment and services are being used, it could result in our being named as a defendant to a lawsuit asserting significant claims.

Despite our high safety standards, we from time to time have suffered accidents in the past and we anticipate that we could experience accidents in the future. In addition to the property and personal losses from these accidents, the frequency and severity of these incidents affect our operating costs and insurability, as well as our relationships with customers, employees and regulatory agencies. Any significant increase in the frequency or severity of these incidents, or the general level of compensation awards, could adversely affect the cost of, or our ability to obtain, workers' compensation and other forms of insurance and could have other adverse effects on our financial condition and results of operations.

We carry a variety of insurance coverages for our operations, and we are partially self-insured for certain claims, in types and amounts that we believe to be customary and reasonable for our industry. These coverages and retentions address certain risks relating to commercial general liability, workers' compensation, business auto, property and equipment, directors and officers, environment, pollution and other risks. Although we maintain insurance coverage of types and amounts that we believe to be customary in our industry, we are not fully insured against all risks, either because insurance is not available or because of the high premium costs relative to perceived risk.

Environmental Regulation

Our operations are subject to stringent laws and regulations governing the discharge of materials into the environment or otherwise relating to environmental protection. Numerous federal, state and local governmental agencies, such as the U.S. Environmental Protection Agency (the "EPA"), issue regulations that often require difficult and costly compliance measures that carry substantial administrative, civil and criminal penalties and may result in injunctive obligations for non-compliance. In addition, some laws and regulations relating to protection of the environment may, in certain circumstances, impose strict liability for environmental contamination, rendering a person liable for environmental damages and cleanup costs without regard to negligence or fault on the part of that person. Strict adherence with these regulatory requirements increases our cost of doing business and consequently affects our profitability. However, environmental laws and regulations have been subject to frequent changes over the years, and the imposition of more stringent requirements could have a material adverse effect on our business, financial condition and results of operations.

Hydraulic Fracturing Activities . Certain governmental reviews are either underway or being proposed that focus on environmental aspects of hydraulic fracturing practices. For example, in December 2016, the EPA released its final report, entitled "Hydraulic Fracturing for Oil and Gas: Impacts from the Hydraulic Fracturing Water Cycle on Drinking Water Resources in the United States," on the potential impacts of hydraulic fracturing on drinking water resources. The report states that the EPA found scientific evidence that hydraulic fracturing activities can impact drinking water resources under some circumstances, noting that the following hydraulic fracturing water cycle activities and local- or regional-scale factors are more likely than others to result in more frequent or more severe impacts: water withdrawals for fracturing in times or areas of low water availability; surface spills during the management of fracturing fluids, chemicals or produced water; injection of fracturing fluids into wells with inadequate mechanical integrity; injection of fracturing fluids directly into groundwater resources; discharge of inadequately treated fracturing wastewater to surface waters; and disposal or storage of fracturing wastewater in unlined pits. The report does not make any policy recommendations. These ongoing or proposed studies could spur initiatives to further regulate hydraulic fracturing under the federal Safe Drinking Water Act ("SDWA") or other regulatory mechanisms. For example, on November 29, 2018, EPA and the State Review of Oil and Natural Gas Environmental Regulation ("STRONGER") entered into a Memorandum of Understanding pursuant to which EPA and Stronger will collaborate on oil and natural gas exploration and development regulatory programs.

At the state level, several states have adopted or are considering legal requirements that could impose more stringent permitting, disclosure and well construction requirements on hydraulic fracturing activities. For example, in May 2013, the Railroad Commission of Texas issued a "well integrity rule," which updates the requirements for drilling, putting pipe down and cementing wells. The rule also includes new testing and reporting requirements, such as (i) the requirement to submit cementing reports after well completion or after cessation of drilling, whichever is later, and (ii) the imposition of additional testing on wells less than 1,000 feet below usable groundwater. The well integrity rule took effect in January 2014. Local governments also may seek to adopt ordinances within their jurisdictions regulating the time, place and manner of drilling activities in general or hydraulic fracturing activities in particular. Some states, counties and municipalities are closely examining water-use issues, such as permit and disposal options for processed water. If new or more stringent federal, state or local legal restrictions relating to the hydraulic fracturing process are adopted in areas where we operate, we could incur potentially significant added costs to comply with such requirements, experience delays or curtailment in the pursuit of development activities and perhaps even be precluded from drilling wells. See "Risk Factors—Federal and state legislative and regulatory initiatives relating to hydraulic fracturing could result in increased costs and additional operating restrictions or delays" in Item 1A of this annual report.

Remediation of Hazardous Substances . The Comprehensive Environmental Response, Compensation and Liability Act, as amended, referred to as " CERCLA " or the " Superfund law ," and comparable state laws generally impose liability, without regard to fault or legality of the original conduct, on certain classes of persons that are considered to be responsible for the release of hazardous substances into the environment. These persons include the current owner or operator of a contaminated facility, a former owner or operator of the facility at the time of contamination and those persons that disposed or arranged for the disposal of the hazardous substances at the facility. Under CERCLA and comparable state statutes, persons deemed "potentially responsible parties" are subject to strict liability that, in some circumstances, may be joint and several for the costs of removing or remediating previously disposed wastes (including wastes disposed of or released by prior owners or operators) or property contamination (including groundwater contamination), for damages to natural resources and for the costs of certain health studies. In addition, it is not uncommon for neighboring landowners and other third parties to file claims for personal injury and property damage allegedly caused by hazardous substances released into the environment.

Water Discharges . The Federal Water Pollution Control Act of 1972, as amended, also known as the " Clean Water Act ," the Safe Drinking Water Act, the Oil Pollution Act and analogous state laws and regulations issued thereunder impose restrictions and strict controls regarding the unauthorized discharge of pollutants, including produced waters and other natural gas and oil wastes, into navigable waters of the United States, as well as state waters. On December 13, 2016, the EPA released a final report which identified discharge of inadequately treated hydraulic fracturing wastewater to surface water resources as having potential to impact drinking water resources. The discharge of pollutants into regulated waters is prohibited, except in accordance with the terms of a permit issued by the EPA or the state. Under the Clean Water Act, the EPA has adopted regulations concerning discharges of storm water runoff, which require covered facilities to obtain permits.

These laws and regulations also prohibit certain other activity in wetlands unless authorized by a permit issued by the U.S. Army Corps of Engineers, which we refer to as the Corps. In September 2015, a new rule became effective which was issued by the EPA and the Corps defining the scope of the jurisdiction of the EPA and the Corps over wetlands and other waters of the United States. The rule has been challenged in court on the grounds that it unlawfully expands the reach of Clean Water Act's programs, and implementation of the rule has been stayed in certain states pending resolution of the court challenge. On February 6, 2018, the EPA and the Corps published a final rule delaying implementation of the rule until February 6, 2020. The February 2018 rule has been challenged in court and is subject to a nationwide injunction. On June 29, 2018, EPA and the Corps published a supplemental notice of proposed rulemaking that solicited public comment on EPA's and the Corps' plan to repeal the September 2015 rule. On December 11, 2018, EPA proposed a rule that would revise the definition of "waters of the United States' and clarify the scope of federal authority under the Clean Water Act. The rapidly changing landscape of federal regulation creates uncertainty in our and our customers' business. Under the Clean Water Act we are also subject to spill prevention, control and countermeasure plan requirements that require appropriate containment berms and similar structures to help prevent the contamination of navigable waters. Noncompliance with these requirements may result in substantial administrative, civil and criminal penalties, as well as injunctive obligations.

Waste Handling . Wastes from certain of our operations (such as equipment maintenance and past chemical development, blending, and distribution operations) are subject to the federal Resource Conservation and Recovery Act of 1976 ("RCRA"), and comparable state statutes and regulations promulgated thereunder, which impose requirements regarding the generation, transportation, treatment, storage, disposal and cleanup of hazardous and non-hazardous wastes. With federal approval, the individual states administer some or all of the provisions of RCRA, sometimes in conjunction with their own, more stringent requirements. Although certain oil production wastes are exempt from regulation as hazardous wastes under RCRA, such wastes may constitute "solid wastes" that are subject to the less stringent requirements of non-hazardous waste provisions. In the EPA's 2016 final report on the impacts from hydraulic fracturing on drinking water resources, the EPA identified disposal or storage of hydraulic fracturing wastewater in unlined pits as resulting in contamination of groundwater resources.

Administrative, civil and criminal penalties can be imposed for failure to comply with waste handling requirements. Moreover, the EPA or state or local governments may adopt more stringent requirements for the handling of non-hazardous wastes or categorize some non-hazardous wastes as hazardous for future regulation. Legislation has been proposed from time to time in Congress to re-categorize certain oil and natural gas exploration, development and production wastes as "hazardous wastes." Several environmental organizations have also petitioned the EPA to modify existing regulations to recategorize certain oil and natural gas exploration, development and production wastes as "hazardous." Any such changes in the laws and regulations could have a material adverse effect on our capital expenditures and operating expenses.

From time to time, releases of materials or wastes have occurred at locations we own, owned previously or at which we have operations. These properties and the materials or wastes released thereon may be subject to CERCLA, RCRA, the federal Clean Water Act, and analogous state laws. Under these laws or other laws and regulations, we have been and may be required to remove or remediate these materials or wastes and make expenditures associated with personal injury or property damage. At this time, with respect to any properties where materials or wastes may have been released, but of which we have not been made aware, it is not possible to estimate the potential costs that may arise from unknown, latent liability risks.

Air Emissions . The federal Clean Air Act, as amended, and comparable state laws and regulations, regulate emissions of various air pollutants through the issuance of permits and the imposition of other requirements. In addition, the EPA has developed, and continues to develop, stringent regulations governing emissions of toxic air pollutants from specified sources. Federal and state regulatory agencies can impose administrative, civil and criminal penalties for non-compliance with air permits or other requirements of the Clean Air Act and associated state laws and regulations. We are required to obtain federal and state permits in connection with some activities under applicable laws. These permits impose certain conditions and restrictions on our operations, some of which require significant expenditures for compliance. Changes in these requirements, or in the permits we operate under, could increase our costs or limit operations.

Additionally, the EPA's Tier IV regulations apply to certain off-road diesel engines used by us to power equipment in the field. Under these regulations, we are required to retrofit or retire certain engines and we are limited in the number of non-compliant off-road diesel engines we can purchase. Tier IV engines are costlier and not widely available. Until Tier IV-compliant engines that meet our needs are more widely available, these regulations could limit our ability to acquire a sufficient number of diesel engines to expand our fleet and to replace existing engines as they are taken out of service.

Other Environmental Considerations . E&P activities on federal lands may be subject to the National Environmental Policy Act, which we refer to as NEPA. NEPA requires federal agencies, including the Department of Interior, to evaluate major agency actions that have the potential to significantly impact the environment. In the course of such evaluations, an agency will prepare an environmental assessment that assesses the potential direct, indirect and cumulative impacts of a proposed project and, if necessary, will prepare a more detailed environmental impact statement that may be made available for public review and comment. E&P activities, as well as proposed exploration and development plans, on federal lands require governmental permits that are subject to the requirements of NEPA. This process has the potential to delay the development of oil and natural gas projects.

Various state and federal statutes prohibit certain actions that adversely affect endangered or threatened species and their habitat, migratory birds, wetlands, and natural resources. These statutes include the Endangered Species Act, the Migratory Bird Treaty Act, the Clean Water Act and CERCLA. Where takings of or harm to species or damages to jurisdictional streams or wetlands habitat or natural resources occur or may occur, government entities or at times private parties may act to prevent oil and natural gas exploration activities or seek damages for harm to species, habitat, or natural resources or resulting from filling of jurisdictional streams or wetlands or releases of oil, wastes, hazardous substances or other regulated materials.

The Bureau of Land Management ("BLM") has established regulations to govern hydraulic fracturing on federal and Indian lands. In 2016, BLM published the Methane and Waste Reduction Rule to reduce waste of natural gas supplies and reduce air pollution, including greenhouse gases, for oil and natural gas produced on federal and Indian lands. Various states filed for a petition for review of the Methane and Waste Reduction Rule. On December 8, 2017, BLM published a final rule delay until January 2019 for certain requirements of the rule that had not yet gone into effect pending judicial review of the rule. A coalition of environmental groups filed suit challenging the delay. On September 28, 2018, BLM published a final rule revising the 2016 Methane and Waste Reduction Rule, which became effective on November 27, 2018. Imposition of this rules could increase our costs or limit operations.

The Toxic Substances Control Act ("TSCA"), requires manufacturers of new chemical substances to provide specific information to the Agency for review prior to manufacturing chemicals or introducing them into commerce. EPA has permitted manufacture of new chemical nanoscale materials through the use of consent orders or Significant New Use Rules under TSCA. The Agency has also allowed the manufacture of new chemical nanoscale materials under the terms of certain regulatory exemptions where exposures were controlled to protect against unreasonable risks. On May 19, 2014, the EPA published an Advanced Notice of Proposed Rulemaking to obtain data on hydraulic fracturing chemical substances and mixtures. The EPA has not yet proceeded with the rulemaking but may do so in the future. Any changes in TSCA regulations could increase our capital expenditures and operating expenses.

Climate Change . In December 2009, the EPA issued an Endangerment Finding that determined that emissions of carbon dioxide, methane and other greenhouse gases present an endangerment to public health and the environment because, according to the EPA, emissions of such gases contribute to warming of the earth's atmosphere and other climatic changes. The EPA later adopted two sets of related rules, one of which regulates emissions of greenhouse gases from motor vehicles and the other of which regulates emissions from certain large stationary sources of emissions. The motor vehicle rule, which became effective in July 2010, limits emissions from motor vehicles. The EPA adopted the stationary source rule, which we refer to as the tailoring rule, in May 2010, and it became effective January 2011. The tailoring rule established new emissions thresholds that determine when stationary sources must obtain permits under the Prevention of Significant Deterioration ("PSD"), and Title V programs of the Clean Air Act. On June 23, 2014, in *Utility Air Regulatory Group v. EPA* , the Supreme Court held that stationary sources could not become subject to PSD or Title V permitting solely by reason of their greenhouse gas emissions and invalidated the tailoring rule. However, the Court ruled that the EPA may require installation of best available control technology for greenhouse gas emissions at sources otherwise subject to the PSD and Title V programs. On December 19, 2014, the EPA issued two memoranda providing guidance on greenhouse gas permitting requirements in response to the Supreme Court's decision. In its preliminary guidance, the EPA stated that it would undertake a rulemaking action to rescind any PSD permits issued under the portions of the tailoring rule that were vacated by the Court. In the interim, the EPA issued a narrowly crafted "no action assurance" indicating it will exercise its enforcement discretion not to pursue enforcement of the terms and conditions relating to greenhouse gases in an EPA-issued PSD permit, and for related terms and conditions in a Title V permit. On April 30, 2015, the EPA issued a final rule allowing permitting authorities to rescind PSD permits issued under the invalid regulations. In October 2015, the EPA amended the greenhouse gas reporting rule to add the reporting of emissions from oil wells using hydraulic fracturing. Because of this continued regulatory focus, future emission regulations of the oil and natural gas industry remain a possibility, which could increase the cost of our operations.

In addition, the U.S. Congress occasionally attempts to adopt legislation to reduce emissions of greenhouse gases, and almost one-half of the states have taken legal measures to reduce emissions primarily through the planned development of greenhouse gas emission inventories or regional cap and trade programs. Although the U.S. Congress has not yet adopted such legislation, it may do so in the future. Several states continue to pursue related regulations as well. In December 2015, the United States joined the international community at the 21st Conference of the Parties of the United Nations Framework Convention on Climate Change in Paris, France. The resulting Paris Agreement calls for the parties to undertake "ambitious efforts" to limit the average global temperature, and to conserve and enhance sinks and reservoirs of greenhouse gases. The Paris Agreement, which came into force on November 4, 2016, establishes a framework for the parties to cooperate and report actions to reduce greenhouse gas emissions. Although the Trump Administration has withdrawn the United States from the Paris Agreement, many state and local officials have publicly stated they intend to abide by the terms of the Paris Agreement. Restrictions on emissions of methane or carbon dioxide that may be imposed in various states could adversely affect the oil and natural gas industry which could have a material adverse effect on future demand for our services. At this time, it is not possible to accurately estimate how potential future laws or regulations addressing greenhouse gas emissions would impact our customers' business and consequently our own.

In addition, claims have been made against certain energy companies alleging that greenhouse gas emissions from oil and natural gas operations constitute a public nuisance under federal or state common law. As a result, private individuals may seek to enforce environmental laws and regulations and could allege personal injury or property damages, which could increase our operating costs.

NORM . In the course of our operations, some of our equipment may be exposed to naturally occurring radioactive materials ("NORM") associated with oil and natural gas deposits and, accordingly may result in the generation of wastes and other materials containing NORM. NORM exhibiting levels of naturally occurring radiation in excess of established state standards are subject to special handling and disposal requirements, and any storage vessels, piping and work area affected by NORM may be subject to remediation or restoration requirements. Because certain of the properties presently or previously owned, operated or occupied by us may have been used for oil and natural gas production operations, it is possible that we may incur costs or liabilities associated with NORM.

Pollution Risk Management . We seek to minimize the possibility of a pollution event through equipment and job design, as well as through employee training. We also maintain a pollution risk management program if a pollution event occurs. This program includes an internal emergency response plan that provides specific procedures for our employees to follow in the event of a chemical release or spill. In addition, we have contracted with several third-party emergency responders in our various operating areas that are available on a 24-hour basis to handle the remediation and clean-up of any chemical release or spill. We carry insurance designed to respond to foreseeable environmental exposures. This insurance portfolio has been structured in an effort to address incidents that result in bodily injury or property damage and any ensuing clean up needed at our owned facilities as a result of the mobilization and utilization of our fleet, as well as any claims resulting from our operations.

We also seek to manage environmental liability risks through provisions in our contracts with our customers that allocate risks relating to surface activities associated with the fracturing process, other than water disposal, to us and risks relating to "downhole" liabilities to our customers. Our customers are responsible for the disposal of the fracturing fluid that flows back out of the well as waste water. The customers remove the water from the well using a controlled flow-back process, and we are not involved in that process or the disposal of the fluid. Our contracts generally require our customers to indemnify us against pollution and environmental damages originating below the surface of the ground or arising out of water disposal, or otherwise caused by the customer, other contractors or other third parties. In turn, we indemnify our customers for pollution and environmental damages originating at or above the surface caused solely by us. We seek to maintain consistent risk-allocation and indemnification provisions in our customer agreements to the greatest extent possible. Some of our contracts, however, contain less explicit indemnification provisions, which typically provide that each party will indemnify the other against liabilities to third parties resulting from the indemnifying party's actions, except to the extent such liability results from the indemnified party's gross negligence, willful misconduct or intentional act.

Safety and Health Regulation

We are subject to the requirements of the federal Occupational Safety and Health Act, which is administered and enforced by OSHA, and comparable state laws that regulate the protection of the health and safety of workers. In addition, the OSHA hazard communication standard requires that information be maintained about hazardous materials used or produced in operations and that this information be provided to employees, state and local government authorities and the public. We believe that our operations are in substantial compliance with the OSHA requirements, including general industry standards, record keeping requirements, and monitoring of occupational exposure to regulated substances. OSHA continues to evaluate worker safety and to propose new regulations, such as but not limited to, the new rule regarding respirable silica sand. Although it is not possible to estimate the financial and compliance impact of the new respirable silica sand rule or any other proposed rule, the imposition of more stringent requirements could have a material adverse effect on our business, financial condition and results of operations.

Intellectual Property Rights

Our research and development efforts are focused on providing specific solutions to the challenges our customers face when fracturing and stimulating wells. In addition to the design and manufacture of innovative equipment, we have also developed proprietary blends of chemicals that we use in connection with our hydraulic fracturing services. We have three U.S. patents and two patents in Canada relating to fracturing methods, the technology used in fluid ends, hydraulic pumps and other equipment. We believe the information regarding our customer and supplier relationships are also valuable proprietary assets. We have registered trademarks and pending trademark applications for various names under which our entities do or intend to conduct business and offer products. Except for the foregoing, we do not own or license any patents, trademarks or other intellectual property that we believe to be material to the success of our business.

Company Information

Our principal executive office is located at 777 Main Street, Suite 2900, Fort Worth, Texas, 76102 and our telephone number is 817-862-2000. Our website address is www.ftsi.com. The information on our website is not incorporated by reference into this report.

Item 1A. Risk Factors

Our investors should carefully consider the following risks and other information in this annual report in evaluating us and our common stock. Any of the following risks, as well as additional risks and uncertainties not currently known to us or that we currently deem immaterial, could materially and adversely affect our business, financial condition or results of operations, and could, in turn, impact the trading price of our common stock.

Risks Relating to Our Business

Our business depends on domestic spending by the onshore oil and natural gas industry, which is cyclical and has significantly declined in past periods.

Our business is cyclical and depends on the willingness of our customers to make operating and capital expenditures to explore for, develop and produce oil and natural gas in the United States. The willingness of our customers to undertake these activities depends largely upon prevailing industry conditions that are influenced by numerous factors over which we have no control, such as:

- prices, and expectations about future prices, for oil and natural gas;
- domestic and foreign supply of, and demand for, oil and natural gas and related products;
- the level of global and domestic oil and natural gas inventories;
- the supply of and demand for hydraulic fracturing and other oilfield services and equipment in the United States;
- the cost of exploring for, developing, producing and delivering oil and natural gas;
- available pipeline, storage and other transportation capacity;
- lead times associated with acquiring equipment and products and availability of qualified personnel;

- the discovery rates of new oil and natural gas reserves;
- federal, state and local regulation of hydraulic fracturing and other oilfield service activities, as well as E&P activities, including public pressure on governmental bodies and regulatory agencies to regulate our industry;
- the availability of water resources, suitable proppant and chemicals in sufficient quantities for use in hydraulic fracturing fluids;
- geopolitical developments and political instability in oil and natural gas producing countries;
- actions of OPEC, its members and other state-controlled oil companies relating to oil price and production controls;
- advances in exploration, development and production technologies or in technologies affecting energy consumption;
- the price and availability of alternative fuels and energy sources;
- weather conditions and natural disasters;
- uncertainty in capital and commodities markets and the ability of oil and natural gas producers to raise equity capital and debt financing; and
- U.S. federal, state and local and non-U.S. governmental regulations and taxes.

Volatility or weakness in oil and natural gas prices (or the perception that oil and natural gas prices will decrease or remain depressed) generally leads to decreased spending by our customers, which in turn negatively impacts drilling, completion and production activity. In particular, the demand for new or existing drilling, completion and production work is driven by available investment capital for such work. When these capital investments decline, our customers' demand for our services declines. Because these types of services can be easily "started" and "stopped," and oil and natural gas producers generally tend to be risk averse when commodity prices are low or volatile, we typically experience a more rapid decline in demand for our services compared with demand for other types of energy services. Any negative impact on the spending patterns of our customers may cause lower pricing and utilization for our services, which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Oil and natural gas prices are volatile and have declined significantly in past periods, which has adversely affected, and may again adversely affect, our financial condition, results of operations and cash flows.

The demand for our services depends on the level of spending by oil and natural gas companies for drilling, completion and production activities, which are affected by short-term and long-term trends in oil and natural gas prices, including current and anticipated oil and natural gas prices. Oil and natural gas prices, as well as the level of drilling, completion and production activities, historically have been extremely volatile and are expected to continue to be highly volatile. When oil prices have declined significantly in past periods, we have correspondingly experienced a decline in pressure pumping activity levels across our customer base during these periods. The volatile oil and natural gas prices adversely affected, and could continue to adversely affect, our financial condition, results of operations and cash flows.

Our customers may not be able to maintain or increase their reserve levels going forward.

In addition to the impact of future oil and natural gas prices on our financial performance over time, our ability to grow future revenues and increase profitability will depend largely upon our customers' ability to find, develop or acquire additional shale oil and natural gas reserves that are economically recoverable to replace the reserves they produce. Hydraulic fractured wells are generally more short-lived than conventional wells. Our customers own or have access to a finite amount of shale oil and natural gas reserves in the United States that will be depleted over time. The production rate from shale oil and natural gas properties generally declines as reserves are depleted, while related per-unit production costs generally increase as a result of decreasing reservoir pressures and other factors. If our customers are unable to replace the shale oil reserves they own or have access to at the rate they produce such reserves, their proved reserves and production will decline over time. Reductions in production levels by our customers over time may reduce the future demand for our services and adversely affect our business, financial condition, results of operations and cash flows.

Our business may be adversely affected by a deterioration in general economic conditions or a weakening of the broader energy industry.

A prolonged economic slowdown or recession in the United States, adverse events relating to the energy industry or regional, national and global economic conditions and factors, particularly a slowdown in the E&P industry, could negatively impact our operations and therefore adversely affect our results. The risks associated with our business are more acute during periods of economic slowdown or recession because such periods may be accompanied by decreased exploration and development spending by our customers, decreased demand for oil and natural gas and decreased prices for oil and natural gas.

Competition in our industry intensifies during industry downturns, and we may not be able to provide services that meet the specific needs of our customers at competitive prices.

The markets in which we operate are generally highly competitive and have relatively few barriers to entry. The principal competitive factors in our markets are price, service quality, safety, and in some cases, breadth of products. We compete with large national and multi-national companies that have longer operating histories, greater financial, technical and other resources and greater name recognition than we do. Several of our competitors provide a broader array of services and have a stronger presence in more geographic markets. In addition, we compete with several smaller companies capable of competing effectively on a regional or local basis. Our competitors may be able to respond more quickly to new or emerging technologies and services and changes in customer requirements. Some contracts are awarded on a bid basis, which further increases competition based on price. Pricing is often the primary factor in determining which qualified contractor is awarded a job. The competitive environment may be further intensified by mergers and acquisitions among oil and natural gas companies or other events that have the effect of reducing the number of available customers. As a result of increased competition during the second half of 2018, we had to lower the prices for our services. In the future, we may lose market share or be unable to maintain or increase prices for our present services or to acquire additional business opportunities, which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Pressure on pricing for our services resulting from the increased competition in the second half of 2018 impacted our ability to maintain utilization and pricing for our services or implement price increases, which may also be impacted in future downturns. During any future periods of declining pricing for our services, we may not be able to reduce our costs accordingly, which could further adversely affect our results of operations. Also, we may not be able to successfully increase prices without adversely affecting our utilization levels. The inability to maintain our utilization and pricing levels, or to increase our prices as costs increase, could have a material adverse effect on our business, financial condition and results of operations.

In addition, some E&P companies have begun performing hydraulic fracturing on their wells using their own equipment and personnel. Any increase in the development and utilization of in-house fracturing capabilities by our customers could decrease the demand for our services and have a material adverse impact on our business.

We are dependent on a few customers operating in a single industry. The loss of one or more significant customers could adversely affect our financial condition and results of operations.

Our customers are engaged in the E&P business in the United States. Historically, we have been dependent upon a few customers for a significant portion of our revenues. Our four largest customers generated approximately 40%, 32%, and 52% of our total revenue in 2018, 2017 and 2016, respectively. For a discussion of our customers that make up 10% or more of our revenues, see “Business—Customers” in Item 1 of this annual report.

Our business, financial condition and results of operations could be materially adversely affected if one or more of our significant customers ceases to engage us for our services on favorable terms or at all or fails to pay or delays in paying us significant amounts of our outstanding receivables. Although we do have contracts for multiple projects with certain of our customers, most of our services are provided on a project-by-project basis.

Additionally, the E&P industry is characterized by frequent consolidation activity. Changes in ownership of our customers may result in the loss of, or reduction in, business from those customers, which could materially and adversely affect our financial condition.

We extend credit to our customers, which presents a risk of nonpayment of our accounts receivable.

We extend credit to all our customers. During industry downturns in past periods, many of our customers experienced financial and operational challenges, and some of our customers filed for bankruptcy protection. Given the cyclical nature of the E&P industry, our customers may experience similar challenges in the future. As a result, we may have difficulty collecting outstanding accounts receivable from, or experience longer collection cycles with, some of our customers, which could have an adverse effect on our financial condition and cash flows.

Decreased demand for proppant has adversely affected, and could continue to adversely affect, our commitments under supply agreements.

We have purchase commitments with certain vendors to supply the proppant used in our operations. Some of these agreements have minimum purchase obligations. During industry downturns in past periods, our minimum contractual commitments have exceeded the amount of proppant needed in our operations. As a result, we made minimum payments for proppant that we were unable to use. Furthermore, some of our customers have bought and in the future may buy sand mines or proppant directly from vendors, reducing our need for proppant. If market conditions do not continue to improve, or our customers buy their own sand mines or proppant directly from vendors, we may be required to make minimum payments in future periods, which may adversely affect our results of operations, liquidity and cash flows.

We may be unable to employ a sufficient number of key employees, technical personnel and other skilled or qualified workers.

The delivery of our services and products requires personnel with specialized skills and experience who can perform physically demanding work. As a result of the volatility in the energy service industry and the demanding nature of the work, workers may choose to pursue employment with our competitors or in fields that offer a more desirable work environment. Our ability to be productive and profitable will depend upon our ability to employ and retain skilled workers. In addition, our ability to further expand our operations according to geographic demand for our services depends in part on our ability to relocate or increase the size of our skilled labor force. The demand for skilled workers in our areas of operations can be high, the supply may be limited and we may be unable to relocate our employees from areas of lower utilization to areas of higher demand. A significant increase in the wages paid by competing employers could result in a reduction of our skilled labor force, increases in the wage rates that we must pay, or both. Furthermore, a significant decrease in the wages paid by us or our competitors as a result of reduced industry demand could result in a reduction of the available skilled labor force, and there is no assurance that the availability of skilled labor will improve following a subsequent increase in demand for our services or an increase in wage rates. If any of these events were to occur, our capacity and profitability could be diminished and our growth potential could be impaired.

We depend heavily on the efforts of executive officers, managers and other key employees to manage our operations. The unexpected loss or unavailability of key members of management or technical personnel may have a material adverse effect on our business, financial condition, prospects or results of operations.

Our operations are subject to inherent risks, including operational hazards. These risks may not be fully covered under our insurance policies.

Our operations are subject to hazards inherent in the oil and natural gas industry, such as accidents, blowouts, explosions, craters, fires and oil spills. These hazards may lead to property damage, personal injury, death or the discharge of hazardous materials into the environment. The occurrence of a significant event or adverse claim in excess of the insurance coverage that we maintain or that is not covered by insurance could have a material adverse effect on our financial condition and results of operations.

As is customary in our industry, our service contracts generally provide that we will indemnify and hold harmless our customers from any claims arising from personal injury or death of our employees, damage to or loss of our equipment, and pollution emanating from our equipment and services. Similarly, our customers agree to indemnify and hold us harmless from any claims arising from personal injury or death of their employees, damage to or loss of their equipment, and pollution caused from their equipment or the well reservoir. Our indemnification arrangements may not protect us in every case. In addition, our indemnification rights may not fully protect us if the customer is insolvent or becomes bankrupt, does not maintain adequate insurance or otherwise does not possess sufficient resources to indemnify us. Furthermore, our indemnification rights may be held unenforceable in some jurisdictions. Our inability to fully realize the benefits of our contractual indemnification protections could result in significant liabilities and could adversely affect our financial condition, results of operations and cash flows.

We maintain customary insurance coverage against these types of hazards. We are self-insured up to retention limits with regard to, among other things, workers' compensation and general liability. We maintain accruals in our consolidated balance sheets related to self-insurance retentions by using third-party data and historical claims history. The occurrence of an event not fully insured against, or the failure of an insurer to meet its insurance obligations, could result in substantial losses. In addition, we may not be able to maintain adequate insurance in the future at rates we consider reasonable. Insurance may not be available to cover any or all of the risks to which we are subject, or, even if available, it may be inadequate.

We are subject to laws and regulations regarding issues of health, safety, and protection of the environment, under which we may become liable for penalties, damages, or costs of remediation.

Our operations are subject to stringent laws and regulations relating to protection of the environment, natural resources, clean air, drinking water, wetlands, endangered species and health and safety, as well as chemical use and storage, waste management, and transportation of hazardous and non-hazardous materials. These laws and regulations subject us to risks of environmental liability, including leakage from an operator's casing during our operations or accidental spills or releases onto or into surface or subsurface soils, surface water, groundwater or ambient air.

Some environmental laws and regulations may impose strict liability, joint and several liability or both. Strict liability means that we could be exposed to liability as a result of our conduct that was lawful at the time it occurred, or the conduct of or conditions caused by third parties without regard to whether we caused or contributed to the conditions. Additionally, environmental concerns, including air and drinking water contamination and seismic activity, have prompted investigations that could lead to the enactment of regulations that potentially could have a material adverse impact on our business. Sanctions for noncompliance with environmental laws and regulations could result in fines and penalties (administrative, civil or criminal), revocations of permits, expenditures for remediation, and issuance of corrective action orders, and actions arising under these laws and regulations could result in liability for property damage, exposure to waste and other hazardous materials, nuisance or personal injuries. Such claims or sanctions could cause us to incur substantial costs or losses and could have a material adverse effect on our business, financial condition, and results of operations.

Changes in laws and regulations could prohibit, restrict or limit our operations, increase our operating costs, adversely affect our results or result in the disclosure of proprietary information resulting in competitive harm.

Various legislative and regulatory initiatives have been undertaken that could result in additional requirements or restrictions being imposed on our operations. Legislation and/or regulations are being considered at the federal, state and local levels that could impose chemical disclosure requirements (such as restrictions on the use of certain types of chemicals or prohibitions on hydraulic fracturing operations in certain areas) and prior approval requirements. If they become effective, these regulations would establish additional levels of regulation that could lead to operational delays and increased operating costs. Disclosure of our proprietary chemical information to third parties or to the public, even if inadvertent, could diminish the value of our trade secrets and could result in competitive harm to us, which could have an adverse impact on our financial condition and results of operations.

Additionally, some jurisdictions are or have considered zoning and other ordinances, the conditions of which could impose a de facto ban on drilling and/or hydraulic fracturing operations, and are closely examining permit and disposal options for processed water, which if imposed could have a material adverse impact on our operating costs. Moreover, any moratorium or increased regulation of our raw materials vendors, such as our proppant suppliers, could increase the cost of those materials and adversely affect the results of our operations.

We are also subject to the requirements of the Occupational Safety and Health Administration's ("OSHA") Respirable Crystalline Silica Standard, which requires employers to limit worker exposures to respirable crystalline silica and to take other steps to protect workers, such as medical surveillance, providing employee training, and implementing a written exposure control plan. These requirements became applicable to hydraulic fracturing operations in the oil and gas industry on June 23, 2018. The rule also requires hydraulic fracturing operations in the oil and gas industry to implement engineering controls to limit exposures to the respirable silica by June 23, 2021. The Respirable Crystalline Silica Standard has and will continue to impose increased operating costs on our and our customers' business. Employee exposure to silica presents a source of potential liability to our and our customers' business, which if realized could increase our costs or otherwise adversely affect our business or operations.

We are also subject to various transportation regulations that include certain permit requirements of highway and vehicle and hazardous material safety authorities. These regulations govern such matters as the authorization to engage in motor carrier operations, safety, equipment testing, driver requirements and specifications and insurance requirements. As these regulations develop and any new regulations are proposed, we have experienced and may continue to experience an increase in related costs. We receive a portion of the proppant used in our operations by rail. Any delay or failure in rail services due to changes in transportation regulations, work stoppages or labor strikes, could adversely affect the availability of proppant. We cannot predict whether, or in what form, any legislative or regulatory changes or municipal ordinances applicable to our logistics operations will be enacted and to what extent any such legislation or regulations could increase our costs or otherwise adversely affect our business or operations.

Federal and state legislative and regulatory initiatives relating to hydraulic fracturing could result in increased costs and additional operating restrictions or delays.

Our business is dependent on our ability to conduct hydraulic fracturing and horizontal drilling activities. Hydraulic fracturing is used to stimulate production of hydrocarbons, particularly natural gas, from tight formations, including shales. The process, which involves the injection of water, sand and chemicals, or proppants, under pressure into formations to fracture the surrounding rock and stimulate production, is typically regulated by state oil and natural gas commissions. However, federal agencies have asserted regulatory authority over certain aspects of the process. For example, on May 9, 2014, the EPA issued an Advanced Notice of Proposed Rulemaking seeking comment on the development of regulations under the Toxic Substances Control Act to require companies to disclose information regarding the chemicals used in hydraulic fracturing. The EPA has not proceeded further with this rulemaking but could do so in the future. On June 28, 2016, the EPA published a final rule prohibiting the discharge of wastewater from onshore unconventional oil and natural gas extraction facilities to publicly owned wastewater treatment plants. The EPA also conducted a study of private wastewater treatment facilities (also known as centralized waste treatment ("CWT") facilities) accepting oil and natural gas extraction wastewater and in May 2018 published data and information related to the extent to which CWT facilities accept such wastewater, available treatment technologies (and their associated costs), discharge characteristics, financial characteristics of CWT facilities and the environmental impacts of discharges from CWT facilities. The EPA entered a consent decree which requires the agency to determine whether to revise the Resource Conservation and Recovery Act Subtitle D rules for oil and gas waste by March 5, 2019. Furthermore, legislation to amend the SDWA, to repeal the exemption for hydraulic fracturing (except when diesel fuels are used) from the definition of "underground injection" and require federal permitting and regulatory control of hydraulic fracturing, as well as legislative proposals to require disclosure of the chemical constituents of the fluids used in the fracturing process, were proposed in recent sessions of Congress. Additionally, BLM has established regulations imposing drilling and construction requirements for operations on federal or Indian lands including management requirements for surface operations and public disclosures of chemicals used in the hydraulic fracturing fluids. However, on December 29, 2017, BLM published a rescission of these regulations. Future imposition of these or similar regulations could cause us or our customers to incur substantial compliance costs and any failure to comply could have a material adverse effect on our financial condition or results of operations.

On May 12, 2016, the EPA amended the New Source Performance Standards under the federal Clean Air Act to impose new standards for methane and volatile organic compounds ("VOCs"), emissions for certain new, modified, and reconstructed equipment, processes, and activities across the oil and natural gas sector. On the same day, the EPA finalized a plan to implement its minor new source review program in Indian country for oil and natural gas production, and it issued for public comment an information request that will require companies to provide extensive information instrumental for the development of regulations to reduce methane emissions from existing oil and natural gas sources. The EPA proposed changes to the New Source Performance Standards on September 11, 2018, which if finalized would streamline implementation of the rule. The EPA is expected to publish a final revised rule in September 2019.

In November 2016, BLM promulgated regulations aimed at curbing air pollution, including greenhouse gases, for oil and natural gas produced on federal and Indian lands. Various states have filed for a petition for review of these regulations. On June 15, 2017, BLM published a Notice in the Federal Register proposing to postpone compliance dates for provisions of the rule that had not yet gone into effect pending judicial review of the rule. On October 4, 2017, the U.S. District Court for the Northern District of California invalidated BLM's June 15, 2017 proposed postponement of compliance deadlines. On December 8, 2017, BLM promulgated a final rule delay to temporarily suspend or delay certain requirements until January 17, 2019. A coalition of environmental groups has filed suit challenging the delay. BLM finalized further revisions to its November 2016 rule on September 28, 2018. At this point, we cannot predict the final regulatory requirements or the cost to comply with such requirements with any certainty.

There are certain governmental reviews either underway or being proposed that focus on the environmental aspects of hydraulic fracturing practices. These ongoing or proposed studies, depending on their degree of pursuit and whether any meaningful results are obtained, could spur initiatives to further regulate hydraulic fracturing under the SDWA or other regulatory authorities. The EPA continues to evaluate the potential impacts of hydraulic fracturing on drinking water resources and the induced seismic activity from disposal wells and has recommended strategies for managing and minimizing the potential for significant injection-induced seismic events. For example, in December 2016, the EPA released its final report, entitled "Hydraulic Fracturing for Oil and Gas: Impacts from the Hydraulic Fracturing Water Cycle on Drinking Water Resources in the United States," on the potential impacts of hydraulic fracturing on drinking water resources. The report states that the EPA found scientific evidence that hydraulic fracturing activities can impact drinking water resources under some circumstances, noting that the following hydraulic fracturing water cycle activities and local- or regional-scale factors are more likely than others to result in more frequent or more severe impacts: water withdrawals for fracturing in times or areas of low water availability; surface spills during the management of fracturing fluids, chemicals or produced water; injection of fracturing fluids into wells with inadequate mechanical integrity; injection of fracturing fluids directly into groundwater resources; discharge of inadequately treated fracturing wastewater to surface waters; and disposal or storage of fracturing wastewater in unlined pits. Other governmental agencies, including the U.S. Department of Energy, the U.S. Geological Survey and the U.S. Government Accountability Office, have evaluated or are evaluating various other aspects of hydraulic fracturing. These ongoing or proposed studies could spur initiatives to further regulate hydraulic fracturing, and could ultimately make it more difficult or costly to perform fracturing and increase the costs of compliance and doing business for our customers. Furthermore, the EPA plans to continue an enforcement initiative to ensure energy extraction activities comply with federal laws.

In addition to bans on hydraulic fracturing activities in Maryland, New York and Vermont, several states, including Texas and Ohio, as well as regional authorities like the Delaware River Basin Commission, have adopted or are considering adopting regulations that could restrict or prohibit hydraulic fracturing in certain circumstances, impose more stringent operating standards and/or require the disclosure of the composition of hydraulic fracturing fluids. Any increased regulation of hydraulic fracturing, in these or other states, could reduce the demand for our services and materially and adversely affect our revenues and results of operations.

There has been increasing public controversy regarding hydraulic fracturing with regard to the use of fracturing fluids, induced seismic activity, impacts on drinking water supplies, use of water and the potential for impacts to surface water, groundwater and the environment generally. A number of lawsuits and enforcement actions have been initiated across the country implicating hydraulic fracturing practices. If new laws or regulations are adopted that significantly restrict hydraulic fracturing, such laws could make it more difficult or costly for us to perform fracturing to stimulate production from tight formations as well as make it easier for third parties opposing the hydraulic fracturing process to initiate legal proceedings based on allegations that specific chemicals used in the fracturing process could adversely affect groundwater. In addition, if hydraulic fracturing is further regulated at the federal, state or local level, our customers' fracturing activities could become subject to additional permitting and financial assurance requirements, more stringent construction specifications, increased monitoring, reporting and recordkeeping obligations, plugging and abandonment requirements and also to attendant permitting delays and potential increases in costs. Such legislative or regulatory changes could cause us or our customers to incur substantial compliance costs, and compliance or the consequences of any failure to comply by us could have a material adverse effect on our financial condition and results of operations. At this time, it is not possible to estimate the impact on our business of newly enacted or potential federal, state or local laws governing hydraulic fracturing.

Existing or future laws and regulations related to greenhouse gases and climate change could have a negative impact on our business and may result in additional compliance obligations with respect to the release, capture, and use of carbon dioxide that could have a material adverse effect on our business, results of operations, and financial condition.

Changes in environmental requirements related to greenhouse gases and climate change may negatively impact demand for our services. For example, oil and natural gas exploration and production may decline as a result of environmental requirements, including land use policies responsive to environmental concerns. Local, state, and federal agencies have been evaluating climate-related legislation and other regulatory initiatives that would restrict emissions of greenhouse gases in areas in which we conduct business. Because our business depends on the level of activity in the oil and natural gas industry, existing or future laws and regulations related to greenhouse gases and climate change, including incentives to conserve energy or use alternative energy sources, could have a negative impact on our business if such laws or regulations reduce demand for oil and natural gas. Likewise, such restrictions may result in additional compliance obligations with respect to the release, capture, sequestration, and use of carbon dioxide or other gases that could have a material adverse effect on our business, results of operations, and financial condition.

Delays in obtaining, or inability to obtain or renew, permits or authorizations by our customers for their operations or by us for our operations could impair our business.

In most states, our customers are required to obtain permits or authorizations from one or more governmental agencies or other third parties to perform drilling and completion activities, including hydraulic fracturing. Such permits or approvals are typically required by state agencies, but can also be required by federal and local governmental agencies or other third parties. The requirements for such permits or authorizations vary depending on the location where such drilling and completion activities will be conducted. As with most permitting and authorization processes, there is a degree of uncertainty as to whether a permit will be granted, the time it will take for a permit or approval to be issued and the conditions which may be imposed in connection with the granting of the permit. In some jurisdictions, such as New York State and within the jurisdiction of the Delaware River Basin Commission, certain regulatory authorities have delayed or suspended the issuance of permits or authorizations while the potential environmental impacts associated with issuing such permits can be studied and appropriate mitigation measures evaluated. In Texas, rural water districts have begun to impose restrictions on water use and may require permits for water used in drilling and completion activities. Permitting, authorization or renewal delays, the inability to obtain new permits or the revocation of current permits could cause a loss of revenue and potentially have a materially adverse effect on our business, financial condition, prospects or results of operations.

We are also required to obtain federal, state, local and/or third-party permits and authorizations in some jurisdictions in connection with our wireline services. These permits, when required, impose certain conditions on our operations. Any changes in these requirements could have a material adverse effect on our financial condition, prospects and results of operations.

Restrictions on drilling activities intended to protect certain species of wildlife may adversely affect our ability to conduct drilling activities in some of the areas where we operate.

Oil and natural gas operations in our operating areas can be adversely affected by seasonal or permanent restrictions on drilling activities designed to protect various wildlife, which may limit our ability to operate in protected areas. Permanent restrictions imposed to protect endangered species could prohibit drilling in certain areas or require the implementation of expensive mitigation measures. Additionally, the designation of previously unprotected species as threatened or endangered in areas where we operate could result in increased costs arising from species protection measures. Restrictions on oil and natural gas operations to protect wildlife could reduce demand for our services.

Conservation measures and technological advances could reduce demand for oil and natural gas and our services.

Fuel conservation measures, alternative fuel requirements, increasing consumer demand for alternatives to oil and natural gas, technological advances in fuel economy and energy generation devices could reduce demand for oil and natural gas, resulting in reduced demand for oilfield services. The impact of the changing demand for oil and natural gas services and products may have a material adverse effect on our business, financial condition, results of operations and cash flows.

There may be a reduction in demand for our future services due to competition from alternative energy sources.

Oil and natural gas competes with other sources of energy for consumer demand. There are significant governmental incentives and consumer pressures to increase the use of alternative energy sources in the United States and abroad. A number of automotive, industrial and power generation manufacturers are developing more fuel efficient engines, hybrid engines and alternative clean power systems using fuel cells or clean burning fuels. Greater use of these alternatives as a result of governmental incentives or regulations, technological advances, consumer demand, improved pricing or otherwise over time will reduce the demand for our products and services and adversely affect our business, financial condition, results of operations and cash flows going forward.

Limitations on construction of new natural gas pipelines or increases in federal or state regulation of natural gas pipelines could decrease demand for our services.

There has been increasing public controversy regarding construction of new natural gas pipelines and the stringency of current regulation of natural gas pipelines. Delays in construction of new pipelines or increased stringency of regulation of existing natural gas pipelines at either the state or federal level could reduce the demand for our services and materially and adversely affect our revenues and results of operations.

Our existing fleets require significant amounts of capital for maintenance, upgrades and refurbishment and any new fleets we build or acquire may require significant capital expenditures.

Our fleets require significant capital investment in maintenance, upgrades and refurbishment to maintain their effectiveness. While we manufacture many of the components necessary to maintain, upgrade and refurbish our fleets, labor costs have increased in the past and may increase in the future with increases in demand, which will require us to incur additional costs to upgrade any of our existing fleets or build any new fleets.

Additionally, competition or advances in technology within our industry may require us to update or replace existing fleets or build or acquire new fleets. Such demands on our capital or reductions in demand for our existing fleets and the increase in cost of labor necessary for such maintenance and improvement, in each case, could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Our operations require substantial capital and we may be unable to obtain needed capital or financing on satisfactory terms or at all, which could limit our ability to grow.

The oilfield services industry is capital intensive. In conducting our business and operations, we have made, and expect to continue to make, substantial capital expenditures. Our total capital expenditures were $100.5 million, $64.0 million and $10.3 million, respectively, in 2018, 2017 and 2016. Since 2015, we have financed capital expenditures primarily with funding from cash on hand. We may be unable to generate sufficient cash from operations and other capital resources to maintain planned or future levels of capital expenditures which, among other things, may prevent us from properly maintaining our existing equipment or acquiring new equipment. Furthermore, any disruptions or continuing volatility in the global financial markets may lead to an increase in interest rates or a contraction in credit availability impacting our ability to finance our operations. This circumstance could put us at a competitive disadvantage or interfere with our growth plans. Furthermore, our actual capital expenditures for future years could exceed our capital expenditure budgets. In the event our capital expenditure requirements at any time are greater than the amount we have available, we could be required to seek additional sources of capital, which may include debt financing, joint venture partnerships, sales of assets, offerings of debt or equity securities or other means. We may not be able to obtain any such alternative source of capital. We may be required to curtail or eliminate contemplated activities. If we can obtain alternative sources of capital, the terms of such alternative may not be favorable to us. In particular, the terms of any debt financing may include covenants that significantly restrict our operations. Our inability to grow as planned may reduce our chances of maintaining and improving profitability.

A third party may claim we infringed upon its intellectual property rights, and we may be subjected to costly litigation.

Our operations, including equipment, manufacturing and fluid and chemical operations may unintentionally infringe upon the patents or trade secrets of a competitor or other company that uses proprietary components or processes in its operations, and that company may have legal recourse against our use of its protected information. If this were to happen, these claims could result in legal and other costs associated with litigation. If found to have infringed upon protected information, we may have to pay damages or make royalty payments in order to continue using that information, which could substantially increase the costs previously associated with certain products or services, or we may have to discontinue use of the information or product altogether. Any of these could materially and adversely affect our business, financial condition or results of operations.

New technology may cause us to become less competitive.

The oilfield services industry is subject to the introduction of new drilling and completion techniques and services using new technologies, some of which may be subject to patent or other intellectual property protections. Although we believe our equipment and processes currently give us a competitive advantage, as competitors and others use or develop new or comparable technologies in the future, we may lose market share or be placed at a competitive disadvantage. Furthermore, we may face competitive pressure to implement or acquire certain new technologies at a substantial cost. Some of our competitors have greater financial, technical and personnel resources that may allow them to enjoy technological advantages and implement new technologies before we can. We cannot be certain that we will be able to implement all new technologies or products on a timely basis or at an acceptable cost. Thus, limits on our ability to effectively use and implement new and emerging technologies may have a material adverse effect on our business, financial condition or results of operations.

Loss or corruption of our information or a cyberattack on our computer systems could adversely affect our business.

We are heavily dependent on our information systems and computer-based programs, including our well operations information and accounting data. If any of such programs or systems were to fail or create erroneous information in our hardware or software network infrastructure, whether due to cyberattack or otherwise, possible consequences include our loss of communication links and inability to automatically process commercial transactions or engage in similar automated or computerized business activities. Any such consequence could have a material adverse effect on our business.

The oil and natural gas industry has become increasingly dependent on digital technologies to conduct certain activities. At the same time, cyberattacks have increased. The U.S. government has issued public warnings that indicate that energy assets might be specific targets of cyber security threats. Our technologies, systems and networks may become the target of cyberattacks or information security breaches. These could result in the unauthorized access, misuse, loss or destruction of our proprietary and other information or other disruption of our business operations. Any access or surveillance could remain undetected for an extended period. Our systems for protecting against cyber security risks may not be sufficient. As cyber incidents continue to evolve, we may be required to expend additional resources to continue to modify or enhance our protective measures or to investigate and remediate any vulnerability to cyber incidents. Additionally, our insurance coverage for cyberattacks may not be sufficient to cover all the losses we may experience as a result of such cyberattacks. Any additional costs could materially adversely affect our results of operations.

One or more of our directors may not reside in the United States, which may prevent investors from obtaining or enforcing judgments against them.

Because one or more of our directors may not reside in the United States, it may not be possible for investors to effect service of process within the United States on our non-U.S. resident directors, enforce judgments obtained in U.S. courts based on the civil liability provisions of the U.S. federal securities laws against our non-U.S. resident directors, enforce in foreign courts U.S. court judgments based on civil liability provisions of the U.S. federal securities laws against our non-U.S. resident directors, or bring an original action in foreign courts to enforce liabilities based on the U.S. federal securities laws against our non-U.S. resident directors.

Adverse weather conditions could impact demand for our services or impact our costs.

Our business could be adversely affected by adverse weather conditions. For example, unusually warm winters could adversely affect the demand for our services by decreasing the demand for natural gas or unusually cold winters could adversely affect our capability to perform our services, for example, due to delays in the delivery of equipment, personnel and products that we need in order to provide our services and weather-related damage to facilities and equipment, resulting in delays in operations. Our operations in arid regions can be affected by droughts and limited access to water used in our hydraulic fracturing operations. These constraints could adversely affect the costs and results of operations.

A terrorist attack or armed conflict could harm our business.

Terrorist activities, anti-terrorist efforts and other armed conflicts involving the United States could adversely affect the U.S. and global economies and could prevent us from meeting financial and other obligations. We could experience loss of business, delays or defaults in payments from payors or disruptions of fuel supplies and markets if wells, operations sites or other related facilities are direct targets or indirect casualties of an act of terror or war. Such activities could reduce the overall demand for oil and natural gas, which, in turn, could also reduce the demand for our products and services. Terrorist activities and the threat of potential terrorist activities and any resulting economic downturn could adversely affect our results of operations, impair our ability to raise capital or otherwise adversely impact our ability to realize certain business strategies.

International operations subject us to additional economic, political and regulatory risks.

We have a joint venture with Sinopec to provide hydraulic fracturing operations in China. International operations require significant resources and may result in foreign operations that ultimately are not successful. Our joint venture operations expose us to operational risks, including exposure to foreign currency rate fluctuations, war or political instability, limitations on the movement of funds, foreign and domestic government regulation, including compliance with the U.S. Foreign Corrupt Practices Act, trade wars, and bureaucratic delays. These may increase our costs and distract key personnel, which may adversely affect our business, financial condition or results of operations.

We and certain of our directors, executive officers and stockholders are currently subject to securities class action litigation in connection with our IPO, and other litigation and legal proceeding (including arbitration) that are expensive and time consuming, and if resolved adversely, could harm our business, financial condition or results or operation.

A purported securities class action was filed against us and certain of our directors, executive officers and stockholders alleging violation of federal securities laws. While we believe this lawsuit is without merit and intend to vigorously defend against it, there can be no assurances that a favorable final outcome will be obtained. In connection with this litigation, we could incur substantial costs and such costs and any related settlements or judgments may not be covered by insurance. We could also suffer an adverse impact on our reputation and a diversion of management's attention and resources, which could have a material adverse effect on our business.

In addition to the class action lawsuit, we are involved in other lawsuits and legal proceedings, including arbitration, in the ordinary course of our business. Any litigation or other legal proceedings, including arbitration, could result in an onerous or unfavorable judgment that may not be reversed upon appeal or in payments of substantial monetary damages or fines, or we may decide to settle lawsuits on similarly unfavorable terms, either of which could adversely affect our business, financial conditions, or results of operation.

Our ability to utilize our net operating loss carryforwards and certain tax amortization deductions may be delayed or limited.

As of December 31, 2018, we had federal and state net operating loss carryforwards ("NOLs") in excess of $1,500 million, which if not utilized will begin to expire starting in 2032 for federal purposes and 2019 for state purposes. We may use these NOLs to offset against taxable income for U.S. federal and state income tax purposes. Additionally, we are allowed to deduct approximately $190 million of amortization expense on our federal and state tax returns per year for tax years 2019 through 2025. However, Section 382 of the Internal Revenue Code of 1986, as amended, may reduce the amount of the NOLs we may use or tax amortization we may deduct for U.S. federal income tax purposes in the event of certain changes in ownership of our Company. A Section 382 "ownership change" generally occurs if one or more stockholders or groups of stockholders who own at least 5% of a company's stock (with owners holding less than 5% of the company's stock being consolidated together into one or more "public groups") increase their ownership by more than 50 percentage points over their lowest ownership percentage within a rolling three year period—for example, if we and/or our three largest stockholders were to sell shares of our common stock, so that following such sales, the "public group" owned more than 50% of our common stock, an "ownership change" would occur for purposes of Code Section 382. Similar rules may apply under state tax laws. Future issuances or sales of our stock, including by our large stockholders or certain other transactions involving our stock that are outside of our control, could cause an "ownership change." If an "ownership change" has occurred in the past or occurs in the future, Section 382 would impose an annual limit on the amount of pre-ownership change NOLs and other tax attributes, potentially including a portion of our tax amortization deduction, that we can use to reduce our taxable income each year, potentially increasing and accelerating our liability for income taxes, and also potentially causing those tax attributes to expire unused. Any limitation of our tax amortization deduction or use of NOLs could, depending on the extent of such limitation and the amount of NOLs previously used, result in our retaining less cash after payment of U.S. federal and state income taxes during any year in which we have taxable income, rather than losses, than we would be entitled to retain if such NOLs or tax amortization deductions were not reduced as an offset against such income for U.S. federal and state income tax reporting purposes, which could adversely impact our operating results.

Risks Relating to Our Indebtedness

We have substantial indebtedness. Any failure to meet our debt obligations would adversely affect our liquidity and financial condition.

As of December 31, 2018, we had $507.9 million of long-term indebtedness outstanding. Our indebtedness affects our operations in several ways, including the following:

- a portion of our cash flows from operating activities must be used to service our indebtedness and is not available for other purposes;
- the covenants contained in the debt agreements governing our outstanding indebtedness limit our ability to borrow additional funds, and may also affect our flexibility in planning for, and reacting to, changes in the economy and in our industry; and
- a lowering of the credit ratings of our debt may negatively affect the cost, terms, conditions and availability of future financing.

If our cash flow and other capital resources are insufficient to fund our obligations under our debt agreements on a current basis and at maturity, or if we are otherwise unable to comply with the covenants in those agreements, we will need to refinance or restructure our debt. The proceeds of future borrowings may not be sufficient to refinance or repay the debt, and we may be unable to complete such transactions in a timely manner, on favorable terms, or at all. In addition, if we finance our operations through additional indebtedness, then the risks that we now face relating to our current debt level would intensify, and it would be more difficult to satisfy our existing financial obligations. Furthermore, if a default occurs under one debt agreement, then this could cause a cross-default under other debt agreements.

Liquidity is essential to our business, and it has been and may continue to be adversely affected.

Liquidity is essential to our business to service our debt and purchase the labor, materials and equipment that we use to operate our business. Additionally, we believe that a service provider's liquidity is important to our customers because adequate liquidity provides assurance that a service provider will have the financial resources to continue to operate in challenging industry conditions.

Our liquidity has been adversely affected by industry downturns in past periods due to low or non-existent profit margins for utilization of our services. Our liquidity may be further impaired by unforeseen cash expenditures, which may arise due to circumstances beyond our control.

Additionally, the terms of our existing debt instruments restrict, and any future debt instruments may further restrict, our ability to incur additional indebtedness, sell certain assets and engage in certain business activities. These restrictions prohibit activities that we could use to increase our liquidity. Also, our current lenders and investors hold a first lien on a portion of our assets as collateral, including substantially all of our revenue-generating equipment. New lenders and investors may require additional collateral, which could additionally impair our access to liquidity. If alternate financing is not available on favorable terms or at all, we would be required to decrease our capital spending to an even greater extent. Any additional decrease in our capital spending would adversely affect our ability to sustain or improve our profits. Refinancing may not be available, and any refinancing of our debt could be at higher interest rates, which could further adversely affect our liquidity.

Increases in interest rates could negatively affect our financing costs and our ability to access capital.

We have exposure to future interest rates based on the variable rate debt under our term loan due April 16, 2021 (the "Term Loan") and our asset based lending facility under the Credit Agreement entered into February 22, 2018 (the "Credit Facility") and to the extent we raise additional debt in the capital markets at variable rates, including any future revolving credit facility, to meet maturing debt obligations or to fund our capital expenditures and working capital needs. Daily working capital requirements are typically financed with operational cash flow and through the use of our existing borrowings. The interest rate on the Term Loan and Credit Facility is generally determined from the applicable LIBOR rate at the borrowing date plus a pre-set margin. We are therefore subject to market interest rate risk on that portion of our long-term debt that relates to the Term Loan and Credit Facility. We do not employ risk management techniques, such as interest rate swaps, to hedge against interest rate volatility, and accordingly significant and sustained increases in market interest rates could materially increase our financing costs and negatively impact our reported results.

Risks Relating to Our Common Stock

Our three largest stockholders control a significant percentage of our common stock, and their interests may conflict with those of our other stockholders.

Before our initial public offering (the "IPO") in February 2018, we were controlled by an investor group comprised mainly of Maju Investments (Mauritius) Pte Ltd ("Maju"), an indirect wholly owned subsidiary of Temasek Holdings (Private) Limited ("Temasek"), CHK Energy Holdings, Inc. ("Chesapeake"), a wholly owned subsidiary of Chesapeake Energy Corporation ("Chesapeake Parent"), and Senja Capital Ltd ("Senja"), an investment company affiliated with RRJ Capital Limited ("RRJ"). Maju, Chesapeake and Senja beneficially own approximately 37.9%, 20.0% and 10.8%, respectively, of our common stock. As a result, Maju, Chesapeake and Senja, together, exercise significant influence over matters requiring stockholder approval, including the election of directors, changes to our organizational documents and significant corporate transactions. Furthermore, several individuals who serve as our directors are nominees of Maju, Chesapeake and Senja. This concentration of ownership and relationships with Maju, Chesapeake and Senja make it unlikely that any other holder or group of holders of our common stock will be able to affect the way we are managed or the direction of our business. In addition, we have engaged, and expect to continue to engage, in related party transactions involving Chesapeake. Furthermore, we have entered into investors' rights agreements with Maju, Chesapeake, Senja and Hampton Asset Holding Ltd. ("Hampton"), which contain agreements regarding, among other things, director nomination, information and observer rights. The interests of Maju, Chesapeake and Senja with respect to matters potentially or actually involving or affecting us, such as future acquisitions and financings, may conflict with the interests of our other stockholders. This continued concentrated ownership will make it more difficult for another company to acquire us and for our investors to receive any related takeover premium for their shares unless these stockholders approve the acquisition.

A significant reduction by our major stockholders of their ownership interests in us could adversely affect us.

We believe that the substantial ownership interests of Maju, Chesapeake and Senja in us provides them with an economic incentive to assist us to be successful. If Maju, Chesapeake or Senja sell all or a substantial portion of their ownership interest in us, they may have less incentive to assist in our success and their nominees that serve as members of our board of directors may resign. Such actions could adversely affect our ability to successfully implement our business strategies which could adversely affect our cash flows or results of operations. In addition, such actions may prohibit us from utilizing all or a portion of our net operating loss carryforwards. See "—Risks Related to our Business—Our ability to use our net operating loss carryforwards may be limited."

Our stock price may be volatile.

The market price of our common stock could vary significantly as a result of a number of factors, some of which are beyond our control. In the event of a drop in the market price of our common stock, our investors could lose a substantial part or all of their investment in our common stock. Consequently, our investors may not be able to sell shares of our common stock at prices equal to or greater than the price they paid.

The following factors, among others, could affect our stock price:

- our operating and financial performance;
- quarterly variations in the rate of growth of our financial indicators, such as net income per share, net income and revenues;
- actual or anticipated changes in revenue or earnings estimates or publication of reports by equity research analysts;
- speculation in the press or investment community or the dissemination of information through social media platforms;
- sales of our common stock by us or our stockholders, or the perception that such sales may occur;
- litigation involving us or that may be perceived as having an adverse effect on our business;
- general market conditions, including fluctuations in actual and anticipated future commodity prices;
- errors in our forecasting of the demand for our services, which could lead to lower revenue or increased costs; and
- domestic and international economic, legal and regulatory factors unrelated to our performance.

The stock markets in general have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. These broad market fluctuations may adversely affect the trading price of our common stock.

The requirements of being a public company, including compliance with the reporting requirements of the Securities Exchange Act of 1934, as amended (the "Exchange Act") and the requirements of the Sarbanes-Oxley Act of 2002 (the "Sarbanes-Oxley Act") and the Dodd-Frank Act, may increase our costs. We may be unable to comply with these requirements in a timely or cost-effective manner.

As a public company with listed equity securities, we have to comply with numerous laws, regulations and requirements, certain corporate governance provisions of the Sarbanes-Oxley Act, the Dodd-Frank Wall Street Reform and Consumer Protection Act, related regulations of the U.S. Securities and Exchange Commission (the "SEC") and the requirements of the national stock exchange on which our common stock is listed, with which we were not required to comply as a private company. Complying with these statutes, regulations and requirements will require time and attention from our board of directors and management and will increase our costs and expenses. We will need to:

- institute a more comprehensive compliance function;
- expand, evaluate and maintain our system of internal controls over financial reporting in compliance with the requirements of Section 404 of the Sarbanes-Oxley Act and the related rules and regulations of the SEC and the Public Company Accounting Oversight Board (United States);
- maintain internal policies, such as those relating to disclosure controls and procedures and insider trading;
- comply with corporate governance and other rules promulgated by the national stock exchange on which our common stock is listed;
- prepare and file annual, quarterly and other periodic public reports in compliance with the federal securities laws;
- prepare proxy statements and solicit proxies in connection with annual meetings of our stockholders;
- involve and retain to a greater degree outside counsel and accountants in the above activities; and
- maintain a public company investor relations function.

In addition, being a public company subject to these rules and regulations required us to obtain increased director and officer liability insurance coverage and we incurred substantial costs to obtain such coverage. These factors could also make it more difficult for us to attract and retain qualified members of our board of directors, particularly to serve on our audit committee, and qualified executive officers.

Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of us more difficult, limit attempts by our stockholders to replace or remove our current management and limit the market price of our common stock.

Provisions in our amended and restated certificate of incorporation and amended and restated bylaws may have the effect of delaying or preventing a change of control or changes in our management. Our amended and restated certificate of incorporation and amended and restated bylaws:

- provide that our board of directors is classified into three classes of directors;
- provide that stockholders may, except as set forth in the investors' rights agreements, which we entered into with Maju, Chesapeake, Senja and Hampton, remove directors only for cause and only with the approval of holders of at least 662/3% of our then-outstanding capital stock;
- provide that the authorized number of directors may be changed only by resolution of the board of directors;
- provide that all vacancies, including newly created directorships, may be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum, except, at any time Maju, Chesapeake, Senja and Hampton have the right to nominate a director under their respective investors' rights agreement,

any vacancy resulting from the death, disability, retirement, resignation, or removal, of a director nominated by these stockholders will be filled by the applicable nominating stockholder;

- provide that our stockholders may not take action by written consent, and may only take action at annual or special meetings of our stockholders;
- provide that stockholders, other than Maju, Chesapeake, Senja and Hampton, seeking to present proposals before a meeting of stockholders or to nominate candidates for election as directors at a meeting of stockholders must provide notice in writing in a timely manner, and also specify requirements as to the form and content of a stockholder's notice;
- restrict the forum for certain litigation against us to Delaware;
- not provide for cumulative voting rights (therefore allowing the holders of a majority of the shares of common stock entitled to vote in any election of directors to elect all of the directors standing for election);
- provide that special meetings of our stockholders may be called only by (1) the Chairman of the board of directors, (2) our CEO, (3) the board of directors pursuant to a resolution adopted by a majority of the total number of authorized directors or (4) stockholders with at least 25% of our then-outstanding capital stock;
- provide that, except as set forth in the investors' rights agreements, stockholders will be permitted to amend our amended and restated bylaws only upon receiving at least 662/3% of the votes entitled to be cast by holders of all outstanding shares then entitled to vote generally in the election of directors, voting together as a single class; and
- provide that, except as set forth in the investors' rights agreements, certain provisions of our amended and restated certificate of incorporation may only be amended upon receiving at least 662/3% of the votes entitled to be cast by holders of all outstanding shares then entitled to vote, voting together as a single class.

These provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors, which is responsible for appointing the members of our management. In addition, we will opt out of the provisions of Section 203 of the General Corporation Law of the State of Delaware ("DGCL"), which generally prohibits a Delaware corporation from engaging in any of a broad range of business combinations with any "interested" stockholder for a period of three years following the date on which the stockholder became an "interested" stockholder. However, our amended and restated certificate of incorporation provides substantially the same limitations as are set forth in Section 203 but also provides that Maju and Chesapeake and their affiliates and any of their direct or indirect transferees and any group as to which such persons are a party do not constitute "interested stockholders" for purposes of this provision.

We are subject to certain requirements of Section 404 of the Sarbanes-Oxley Act. If we are unable to timely comply with Section 404 or if the costs related to compliance are significant, our profitability, stock price, results of operations and financial condition could be materially adversely affected.

We are required to comply with certain provisions of Section 404 of the Sarbanes-Oxley Act of 2002. Section 404 requires that we document and test our internal control over financial reporting and issue management's assessment of our internal control over financial reporting. This section also requires that our independent registered public accounting firm opine on those internal controls upon becoming an accelerated filer, as defined in the SEC rules. During the course of our ongoing evaluation, we may identify areas requiring improvement, and we may have to design enhanced processes and controls to address issues identified through this review. For example, we anticipate the need to hire, or contract with, additional administrative and accounting personnel to enable us to comply with these provisions while maintaining sound financial reporting practices. We believe that the out-of-pocket costs, the diversion of management's attention from running the day-to-day operations and operational changes caused by the need to comply with the requirements of Section 404 of the Sarbanes-Oxley Act could be significant. If the time and costs associated with such compliance exceed our current expectations and our results of operations could be adversely affected.

We cannot be certain at this time that we will be able to successfully complete the attestation requirements of Section 404 or that we or our auditors will not identify material weaknesses in internal control over financial reporting.

If we fail to comply with the requirements of Section 404 or if we or our auditors identify and report such material weaknesses, the accuracy and timeliness of the filing of our annual and quarterly reports may be materially adversely affected and could cause investors to lose confidence in our reported financial information, which could have a negative effect on the trading price of our common stock. In addition, a material weakness in the effectiveness of our internal control over financial reporting could result in an increased chance of fraud and the loss of customers, reduce our ability to obtain financing and require additional expenditures to comply with these requirements, each of which could have a material adverse effect on our business, results of operations and financial condition.

We may not pay dividends on our common stock and, consequently, investors would achieve a return on investment only if the price of our stock appreciates.

We may not declare dividends on shares of our common stock. Additionally, we are currently limited in our ability to make cash distributions to stockholders or repurchase shares of our common stock pursuant to the terms of our Term Loan, Credit Facility and the indenture governing our 6.250% senior secured notes due May 1, 2022 (the "2022 Notes"). If we do not make cash distributions to stockholders or otherwise return cash to stockholders, a return on investment in us will only be achieved if the market price of our common stock appreciates, which may not occur, and our investors sell their shares at a profit. There is no guarantee that the price of our common stock in the market will exceed the price that our investors pay.

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

We may sell additional shares of common stock in subsequent public offerings and may also issue securities convertible into our common stock. On February 6, 2018, we registered shares of common stock that we have granted as equity awards or may grant as equity awards under the FTS International, Inc. 2018 Equity and Incentive Compensation Plan (the "2018 Plan"). These shares may be sold freely in the public market, subject to volume limitations applicable to affiliates, applicable vesting periods and lock-up agreements.

We cannot predict the size of future issuances of our 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.

If securities analysts do not publish research or reports about our business, publish inaccurate or unfavorable research or if they downgrade our stock or our sector, our common stock price and trading volume could decline.

The trading market for our common stock relies in part on the research and reports that industry or financial analysts publish about us or our business. We do not control these analysts. Furthermore, if one or more of the analysts who do cover us downgrade our stock or our industry, or the stock of any of our competitors, or publish inaccurate or unfavorable research about our business, the price of our stock could decline. If one or more of these analysts ceases coverage of us or fail to publish reports on us regularly, we could lose visibility in the market, which in turn could cause our stock price or trading volume to decline.

We may issue preferred stock whose terms could adversely affect the voting power or value of our common stock.

Our amended and restated certificate of incorporation authorizes us to issue, without the approval of our stockholders, one or more classes or series of preferred stock having such designations, preferences, limitations and relative rights, including preferences over our common stock respecting dividends and distributions, as our board of directors may determine. The terms of one or more classes or series of preferred stock could adversely impact the voting power or value of our common stock. For example, we might grant holders of preferred stock the right to elect some number of our directors in all events or on the happening of specified events or the right to veto specified transactions.

Similarly, the repurchase or redemption rights or liquidation preferences we might assign to holders of preferred stock could affect the residual value of our common stock.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Our principal properties include our district offices and manufacturing facilities. We believe our facilities are in good condition and suitable for the purposes for which they are used. Below is information detailing our properties as of December 31, 2018.

Hydraulic Fracturing District Offices

Currently, we have five district offices out of which we conduct hydraulic fracturing services. We own the land and facilities at each of these locations. The following table provides certain information about our district offices out of which we conduct hydraulic fracturing services office locations as of December 31, 2018.

			Facilities	
District Office	**Primary Area of Service**	**Formation**	**Size (Sq.Ft.) (approx.)**	**Acres (approx.)**
Odessa, Texas	Southeast New Mexico and West Texas	Permian Basin	82,800	36
Elk City, Oklahoma	Oklahoma	SCOOP/STACK	42,330	40
Washington County, Pennsylvania	Pennsylvania, West Virginia and Ohio	Marcellus/Utica Shale	41,660	27
Pleasanton, Texas	South Texas	Eagle Ford Shale	62,950	113
Longview, Texas	East Texas and West Louisiana	Haynesville Shale	36,000	14

We also lease a 22-acre, 250,000 square foot facility in Williamsport, Pennsylvania that we used as a district office until August 2015. We are actively seeking to sublease this facility. We may also reopen this facility if we determine it is needed for operations in the region in the future.

Wireline District Offices

Currently, we conduct wireline services out of our Odessa, Texas district office, our Longview, Texas district office, and two other locations listed in the table below. Unless otherwise noted, we own the land and facilities at each of the locations included in the table below. The following table provides certain information about our district offices out of which we conduct wireline services as of December 31, 2018.

			Facilities	
District Office	**Primary Area of Service**	**Formation**	**Size (Sq. Ft.) (approx.)**	**Acres (approx.)**
Yukon, Oklahoma(1)	Oklahoma	SCOOP/STACK	10,950	10
Pleasanton, Texas	South Texas	Eagle Ford Shale	14,375	14

(1) Leased Facility

Manufacturing and Maintenance Facilities

We manufacture the proprietary, high-pressure pumps, including the fluid-ends and power-ends, as well as certain other equipment that we use in our hydraulic fracturing operations in an 89,522 square foot facility owned by us in Fort Worth, Texas.

We own a 94,050 square foot facility in Aledo, Texas that is used for equipment repair, maintenance and electronics installation. We also manufacture, refurbish and assemble certain components of our hydraulic fracturing units and other service equipment at this facility.

We also own a 55,000 square foot maintenance facility in Shreveport, Louisiana and lease a 12,000 square foot maintenance facility in Hobbs, New Mexico.

Principal Executive Offices

We maintain principal executive offices in Fort Worth, Texas. As of December 31, 2018 we leased approximately 33,000 square feet.

Sales Offices

We have five sales offices, which we lease in Houston and Midland, Texas, Oklahoma City, Oklahoma, Canonsburg, Pennsylvania, and Denver, Colorado.

Item 3. Legal Proceedings

We are involved in various legal proceedings from time to time in the ordinary course of our business. For additional information regarding our legal proceedings, see Note 12 — “Commitments and Contingencies” in Notes to our Consolidated Financial Statements included elsewhere in this annual report.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Stockholder Information

On February 22, 2019, we had 109,794,386 shares of common stock outstanding held by a total of approximately 30 record holders. The number of record holders is based on the records of American Stock Transfer & Trust Company, LLC, who serves as our transfer agent. The number of holders does not include individuals or entities who beneficially own shares but whose shares are held of record by a broker or clearing agency, but does include each such broker or clearing agency as one record holder.

Market Information

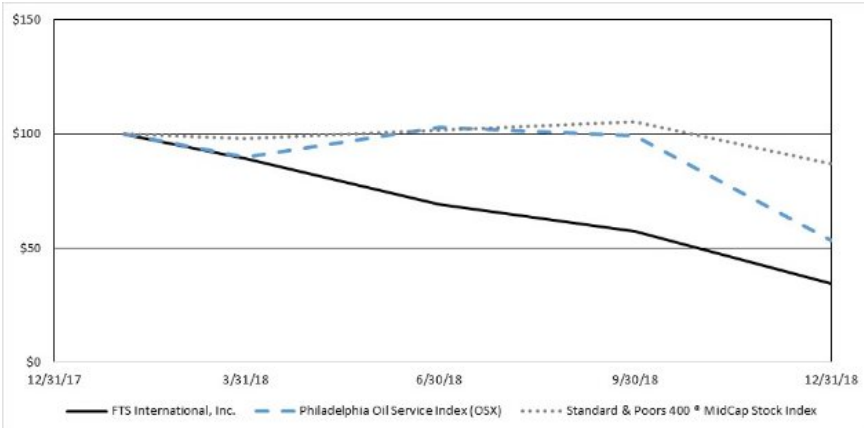
Our common stock trades on the New York Stock Exchange (the “NYSE”) under the ticker symbol “FTSI.”

Dividends

We have not paid any cash dividends on our common stock in the past two fiscal years. We currently intend to retain the majority of future earnings, if any, for use in the repayment of our existing indebtedness and in the operation and expansion of our business. Therefore, we may not pay any cash dividends. The declaration and payment of future cash dividends will be at the sole discretion of our board of directors, subject to applicable laws.

Corporate Performance Graph

The following graph shows a comparison from February 2, 2018 (the date our common stock commenced trading on the NYSE) through December 31, 2018, of the cumulative total return for our common stock, the Philadelphia Oil Service Index (OSX), and the Standard & Poor's 400 MidCap Stock Index. This comparison assumes the investment of $100 on February 2, 2018, and the reinvestment of all dividends. The shareholder return of the following graph is not necessarily indicative of future stock price performance.



Item 6. Selected Financial Data

You should read this information together with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and related notes included elsewhere in this annual report on Form 10-K.

	Year Ended December 31,				
(Dollars in millions, except per share amounts)	**2018**	**2017**	**2016**	**2015**	**2014**
Statements of Operations Data:					
Revenue	$ 1,543.3	$ 1,466.1	$ 532.2	$ 1,375.3	$ 2,368.4
Costs of revenue, excluding depreciation, depletion, and amortization	1,033.2	1,009.8	510.5	1,257.9	1,804.9
Selling, general and administrative	87.9	81.0	64.4	154.7	206.3
Depreciation and amortization	84.7	86.6	112.6	272.4	294.4
Impairments and other charges (1)	19.2	1.8	12.3	619.9	9.8
(Gain) loss on disposal of assets, net	(0.1)	(1.4)	1.0	5.9	5.8
Gain on insurance recoveries	—	(2.9)	(15.1)	—	—
Operating income (loss)	318.4	291.2	(153.5)	(935.5)	47.2
Interest expense, net	49.3	86.7	87.5	77.2	74.2
Loss (gain) on extinguishment of debt, net	9.8	1.4	(53.7)	0.6	28.4
Equity in net (income) loss of joint venture affiliate	(1.1)	0.8	2.8	1.4	—
Income (loss) before income taxes	260.4	202.3	(190.1)	(1,014.7)	(55.4)
Income tax expense (benefit) (2)	2.0	1.6	(1.6)	(1.5)	1.1
Net income (loss)	$ 258.4	$ 200.7	$ (188.5)	$ (1,013.2)	$ (56.5)
Net income (loss) attributable to common stockholders (3)	$ 681.6	$ (25.9)	$ (370.1)	$ (1,158.1)	$ (172.4)
Basic and diluted earnings (loss) per share attributable to common stockholders (4)	$ 6.54	$ (0.50)	$ (7.14)	$ (22.36)	$ (3.33)
Shares used in computing basic and diluted earnings (loss) per share (4)	104.2	51.8	51.8	51.8	51.8
Balance Sheet Data (at end of period):					
Cash and cash equivalents	$ 177.8	$ 208.1	$ 160.3	$ 264.6	$ 10.5
Total assets	$ 743.7	$ 831.0	$ 616.8	$ 907.4	$ 1,902.3
Total debt	$ 503.2	$ 1,116.4	$ 1,188.7	$ 1,276.2	$ 972.5
Convertible preferred stock (5)	$ —	$ 349.8	$ 349.8	$ 349.8	$ 349.8
Total stockholders' equity (deficit)	$ 106.9	$ (818.3)	$ (1,019.0)	$ (830.5)	$ 181.0
Other Data:					
Adjusted EBITDA (6)	$ 419.3	$ 372.7	$ (50.8)	$ (62.8)	$ 359.3
Net debt (at end of period) (7)	$ 330.1	$ 921.9	$ 1,047.0	$ 1,035.4	$ 979.5
Capital expenditures	$ 100.5	$ 64.0	$ 10.3	$ 79.1	$ 112.2
Total fracturing stages (8)	30,537	30,920	16,185	21,919	26,182

(1) In 2014, this amount related to non-essential equipment and real property we identified to sell. In 2015, this amount includes $572.9 million of impairments related to goodwill, intangible assets, and property and equipment; a $24.5 million write-down of excess inventory; $13.1 million of employee severance costs; $11.0 million of supply commitment charges related to our firm purchase commitments for fracturing sand; $1.8 million of lease abandonment charges; and a gain of $3.4 million related to an acquisition earn-out adjustment. For a discussion of amounts recorded for the three years ended December 31, 2018, see Note 8 — "Impairments and Other Charges" in Notes to our Consolidated Financial Statements included elsewhere in this annual report on Form 10-K.

(2) Consists primarily of state margin taxes accounted for as income taxes. The tax effect of our net operating losses has not been reflected in our results because we have recorded a full valuation allowance with regards to the realization of our deferred tax assets since 2012.

(3) In 2018, this amount includes a $423.2 million net gain to common stockholders on the recapitalization of our convertible preferred stock to common stock. For previous years, this amount is calculated by subtracting an

accreted value attributable to our convertible preferred stock from net income or loss. The annual accretion amount was $226.6 million in 2017, $181.6 million in 2016, $144.9 million in 2015, and $115.9 million in 2014. For more information about the convertible preferred stock accretion, see footnote 5 below, and Note 5 — "Stockholders' Equity (Deficit)" and Note 15 — "Earnings (Loss) Per Share" in Notes to our Consolidated Financial Statements included elsewhere in this annual report on Form 10-K.

(4) For 2017 and previous periods, earnings per share and the related shares used to compute earnings per share have been adjusted to give effect to a 69.258777 : 1 reverse stock split that occurred in February 2018 in connection with the completion of our IPO. See Note 5 — "Stockholders' Equity (Deficit)" and Note 14 — "Earnings (Loss) Per Share" in Notes to our Consolidated Financial Statements included elsewhere in this annual report on Form 10-K for more information.

(5) The holders of the convertible preferred stock were also common stockholders of the Company and, prior to the completion of our IPO, collectively appointed 100% of our board of directors. Therefore, the convertible preferred stockholders could have directed the Company to redeem the convertible preferred stock at any time after all of our debt had been repaid; however, we did not consider this to be probable for any of the periods presented due to the amount of debt outstanding. Therefore, we presented the convertible preferred stock as temporary equity but did not reflected any accretion of the convertible preferred stock in this table. See Note 5 — "Stockholders' Equity (Deficit)" and Note 14 — "Earnings (Loss) Per Share" in Notes to our Consolidated Financial Statements included elsewhere in this annual report on Form 10-K for more information. The convertible preferred stock was recapitalized to common stock in connection with our IPO in 2018.

(6) Adjusted EBITDA is a non-GAAP financial measure that we define as earnings before interest; income taxes; and depreciation and amortization, as well as, the following items, if applicable: gain or loss on disposal of assets; debt extinguishment gains or losses; inventory write-downs, asset and goodwill impairments; gain on insurance recoveries; acquisition earn-out adjustments; stock-based compensation; and acquisition or disposition transaction costs. The most comparable financial measure to Adjusted EBITDA under GAAP is net income or loss. Adjusted EBITDA is used by management to evaluate the operating performance of our business for comparable periods and it is a metric used for management incentive compensation. Adjusted EBITDA should not be used by investors or others as the sole basis for formulating investment decisions, as it excludes a number of important items. We believe Adjusted EBITDA is an important indicator of operating performance because it excludes the effects of our capital structure and certain non-cash items from our operating results. Adjusted EBITDA is also commonly used by investors in the oilfield services industry to measure a company's operating performance, although our definition of Adjusted EBITDA may differ from other industry peer companies.

The following table reconciles our net income (loss) to Adjusted EBITDA:

	Year Ended December 31,				
(In millions)	**2018**	**2017**	**2016**	**2015**	**2014**
Net income (loss)	$ 258.4	$ 200.7	$ (188.5)	$ (1,013.2)	$ (56.5)
Interest expense, net	49.3	86.7	87.5	77.2	74.2
Income tax expense (benefit)	2.0	1.6	(1.6)	(1.5)	1.1
Depreciation and amortization	84.7	86.6	112.6	272.4	294.4
(Gain) loss on disposal of assets, net	(0.1)	(1.4)	1.0	5.9	5.8
Loss (gain) on extinguishment of debt, net	9.8	1.4	(53.7)	0.6	28.4
Inventory write-down	—	—	—	24.5	—
Impairment of assets and goodwill	—	—	7.0	572.9	9.8
Gain on insurance recoveries	—	(2.9)	(15.1)	—	—
Acquisition earn-out adjustments	—	—	—	(3.4)	—
Stock-based compensation	15.2	—	—	1.8	2.1
Adjusted EBITDA	$ 419.3	$ 372.7	$ (50.8)	$ (62.8)	$ 359.3

(7) Net debt is a non-GAAP financial measure that we define as total principal amount of debt less cash and cash equivalents. The most comparable financial measure to net debt under GAAP is debt. Net debt is used by management as a measure of our financial leverage. Net debt should not be used by investors or others as the sole basis in formulating investment decisions as it does not represent our actual indebtedness. The following table reconciles our total debt to net debt:

(In millions)	December 31, 2018	2017	2016	2015	2014
Total debt	$ 503.2	$ 1,116.4	$ 1,188.7	$ 1,276.2	$ 972.5
Add: unamortized discount and debt issuance costs	4.7	13.6	18.6	23.8	17.5
Total principal amount of debt	507.9	1,130.0	1,207.3	1,300.0	990.0
Less: cash and cash equivalents	(177.8)	(208.1)	(160.3)	(264.6)	(10.5)
Net debt	$ 330.1	$ 921.9	$ 1,047.0	$ 1,035.4	$ 979.5

(8) See “Business — Our Services — Hydraulic Fracturing” in Item 1 of this annual report regarding fracturing stages and the types of service agreements we use to provide hydraulic fracturing services.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with our consolidated financial statements and related notes that appear elsewhere in this annual report on Form 10-K. In addition to historical consolidated financial information, the following discussion contains forward-looking statements that reflect our plans, estimates, or beliefs. Actual results could differ materially from those discussed in the forward-looking statements. Factors that could cause or contribute to these differences include those discussed below and elsewhere in this annual report on Form 10-K, particularly in "Risk Factors."

Overview

We are one of the largest providers of hydraulic fracturing services in North America. Our services enhance hydrocarbon flow from oil and natural gas wells drilled by exploration and production companies in shale and other unconventional resource formations. We have 1.7 million total hydraulic horsepower across 34 fleets, with 19 fleets active and one fleet under construction and awaiting final assembly as of December 31, 2018. Our customers include leading exploration and production companies that extract oil and natural gas resources in North America. We operate in five of the most active major basins in the United States: the Permian Basin, the SCOOP/STACK Formation, the Marcellus/Utica Shale, the Eagle Ford Shale and the Haynesville Shale. Substantially all of our business activities support our well completion services.

Summary Financial Results

- Total revenue for 2018 was $1,543.3 million, which represented an increase of $77.2 million from 2017.
- Net income for 2018 was $258.4 million, which represented an increase of $57.7 million from 2017.
- Adjusted EBITDA for 2018 was $419.3 million, which represented an increase of $46.6 million from 2017.
- Cash provided by operating activities for 2018 was $384.8 million, which represented an increase of $204.8 million from 2017.
- Total principal amount of long-term debt was $507.9 million at December 31, 2018, which represented a decrease of $622.1 million from December 31, 2017.

Industry trends and business outlook

Our business depends on the willingness of E&P companies to make expenditures to explore for, develop, and produce oil and natural gas in the United States. The willingness of E&P companies to undertake these activities is predominantly influenced by current and expected future prices for oil and natural gas. A widely watched indicator of E&P companies' aggregate activity levels is the drilling rig count, or rig count. The active horizontal rig count is a subset of the total rig count and is the most strongly correlated with the aggregate industry demand for hydraulic fracturing services.

The average horizontal rig count was approximately 900, 735, and 400 in 2018, 2017 and 2016, respectively, according to a report by Baker Hughes, a GE company. The horizontal rig count was 945 at the end of 2018, which was its highest level since the first quarter of 2015. Over this period, drilling rigs have become more efficient and are drilling more wells per rig. In addition, the well designs being drilled have longer lateral lengths and E&P companies have used increasing amounts of sand in each well that they hydraulically fracture. The combination of these factors increased the aggregate demand for hydraulic fracturing services over this period to record levels.

The prices that we are able to charge for our services is affected by the supply of hydraulic fracturing equipment that is available in the market to meet customer demand. In the downturn of 2016, the excess supply of equipment in the market drove our prices down. In 2017, a severe shortage of equipment drove our prices up. The market imbalance in 2017 prompted both existing and new competitors to deploy additional equipment into the market. This increasing supply of active equipment, combined with certain E&P companies reducing their completions activity for operational reasons or to better match capital expenditures with their cash flows, caused the supply of equipment to exceed the demand for equipment in the second half of 2018. As a result, the pricing for our services declined in the second half of 2018 and we expect it to decline further in the first quarter of 2019. While we believe demand will remain strong, the supply of equipment in the market has also increased to record levels.

In response to this increasingly competitive market environment, we remain disciplined with respect to our number of active fleets and we remain focused on optimizing our utilization and profitability. We reduced our active fleet count from 28 fleets in the second quarter of 2018 to 19 fleets at the end of the fourth quarter of 2018 because certain fleets did not meet our utilization and profitability targets.

In 2019, we expect for E&P activity levels to remain strong and for us to have continued profitability and cash generation. Based on discussions with our customers, we anticipate activating one or two fleets in the first quarter of 2019. We will continue to manage our active capacity to best match demand from our customers and maximize our profitability and cash flow.

Other significant developments in 2018

- In February 2018, we completed an IPO of 22.4 million shares of common stock of which 18.1 million shares were sold by the Company. The Company received net proceeds from the offering of $303.0 million, and we used the net proceeds from the offering for general corporate purposes, primarily debt repayments.
- In February 2018, we entered into a $250 million asset-based revolving credit facility to increase our available liquidity.

Results of Operations

Revenue

The Company contracts with its customers to perform hydraulic fracturing services and wireline services on one or more oil or natural gas wells. Under these arrangements, we satisfy our performance obligations as services are rendered, which is generally upon the completion of a fracturing stage. We typically complete one or more stages per day. The price for our services typically includes an equipment charge and, if applicable, product charges for proppant, chemicals and other products actually consumed during the course of providing our services. The following table includes certain operating statistics that affect our revenue:

	Year Ended December 31,		
(Dollars in millions)	**2018**	**2017**	**2016**
Revenue	$ 1,450.4	$ 1,352.7	$ 529.5
Revenue from related parties	92.9	113.4	2.7
Total revenue	$ 1,543.3	$ 1,466.1	$ 532.2
Total fracturing stages	30,537	30,920	16,185
Active fleets (1)	24.2	23.3	15.6
Total fleets (2)	34.0	32.0	32.0

(1) Active fleets is the average number of fleets operating during the period. We had 19, 27 and 17 active fleets at December 31, 2018, 2017 and 2016, respectively.
(2) Total fleets is the total number of fleets owned during the period. In 2018, we had one fleet under construction and awaiting final assembly.

Total revenue in 2018 increased by $77.2 million from 2017. This increase was primarily due to higher average pricing for our services in 2018 compared to 2017. Pricing for our services increased in each quarter of 2017 and the first quarter of 2018, but decreased for the remaining quarters of 2018. The increased average pricing of our services during

2018 was partially offset by an increase in the portion of customers who provided their own proppant and a decrease in the cost of materials used in the fracturing process during 2018. The average number of active fleets operating during all of 2018 increased slightly from 2017. The number of fracturing stages completed per average active fleet in 2018 decreased by 5% from 2017. This decrease was primarily due to a high level of utilization in the second and early third quarters of 2017, which was driven by a significant shortage of active hydraulic fracturing equipment in the market.

At December 31, 2018, we evaluated all of our idle fleets and concluded that each of these fleets is available to return to service after our maintenance personnel make any necessary repairs and confirm that the equipment is in operating condition.

The decrease in revenue from related parties in 2018 was due to a decrease in services performed for Chesapeake.

Total revenue in 2017 increased by $933.9 million from 2016. This increase was primarily due to an increase in the number of stages completed and an increase in the prices for our services in 2017, both of which were driven by increased customer demand. The number of active fleets operating during 2017 increased by an average of 7.7 fleets from 2016, due to increased customer demand. The number of fracturing stages completed per average active fleet in 2017 increased by 28% from 2016. This increase was due to higher levels of utilization in 2017 as we recovered from the 2016 industry downturn.

The increase in revenue from related parties in 2017 was due to an increase in the services performed for Chesapeake.

Costs of revenue

The primary costs involved in conducting our hydraulic fracturing services are costs for materials used in the fracturing process and costs to operate, maintain, and repair our fracturing equipment. Costs related to the materials used in the fracturing process typically include costs for sand and other proppants, costs for chemicals added to the fracturing fluid, and freight costs to transport these materials to the well location. Costs to operate our fracturing equipment primarily consist of labor and fuel costs. While we exclude certain amounts of depreciation and amortization from our costs of revenue line item, we have included the amounts of depreciation that specifically relate to our revenue generating assets in our discussion below to provide further information regarding the total costs of generating our revenues. Costs of revenue as a percentage of total revenue is as follows:

	Year Ended December 31,					
	2018		2017		2016	
(Dollars in millions)	Dollars	As a Percent of Revenue	Dollars	As a Percent of Revenue	Dollars	As a Percent of Revenue
Costs of revenue, excluding depreciation	$ 1,033.2	66.9 %	$ 1,009.8	68.9 %	$ 510.5	95.9 %
Depreciation — costs of revenue	75.9	5.0 %	75.6	5.1 %	98.9	18.6 %
Total costs of revenue	$ 1,109.1	71.9 %	$ 1,085.4	74.0 %	$ 609.4	114.5 %

Total costs of revenue in 2018 increased by $23.7 million from 2017. This increase was primarily due to an increase in our costs of revenue, excluding depreciation.

Costs of revenue, excluding depreciation, in 2018 increased by $23.4 million from 2017. This increase was primarily due to our higher average number of active fleets in 2018. This increase was partially offset by an increase in the portion of customers who provided their own proppant and a decrease in the costs for materials used in the fracturing process in the second half of 2018, when compared to the same period in 2017.

Depreciation for our service equipment in 2018 increased by $0.3 million from 2017.

Total costs of revenue as a percentage of total revenue decreased by 2.1 percentage points from 74.0% in 2017 to 71.9% in 2018. This change was primarily due to an increase in the average pricing for our services in 2018 when compared to 2017.

Total costs of revenue in 2017 increased by $476.0 million from 2016. This increase was primarily due to an increase in our costs of revenue, excluding depreciation, which were partially offset by a decrease in the depreciation expense for our service equipment.

Costs of revenue, excluding depreciation, in 2017 increased by $499.3 million from 2016, due to our higher number of active fleets, increased number of stages completed during 2017, and increased costs for materials used in the fracturing process. Depreciation for our service equipment in 2017 decreased by $23.3 million from 2016. This decrease was the result of asset disposals and certain assets becoming fully depreciated. Additionally, we generally refurbish our equipment as it approaches the end of its useful life, rather than replacing it by purchasing new equipment. The cost of refurbishing our equipment is significantly lower than the cost of purchasing new equipment. As more of our fleets became comprised of refurbished assets in recent years, our depreciation correspondingly declined.

Total costs of revenue as a percentage of total revenue decreased by 40.5 percentage points from 114.5% in 2016 to 74.0% in 2017. This change was primarily due to increased pricing for our services and increased stages completed per active fleet in 2017. These factors were partially offset by increased costs for materials used in the fracturing process.

Selling, general and administrative expense

Selling, general and administrative (“SG&A”) expense in 2018 increased by $6.9 million from 2017. This increase was primarily due to stock-based compensation expense incurred in 2018. We incurred $3.7 million of expense to cash-settle all remaining unvested awards from our 2014 Long Term Incentive Plan, which vested upon the completion of our IPO. We also incurred $15.2 million of non-cash expense related to RSU awards granted in 2018. These increases were partially offset by decreased cash-based incentive compensation expense in 2018.

Selling, general and administrative expense in 2017 increased by $16.6 million from 2016. This increase was primarily due to increased incentive compensation related to our improved operating results in 2017 and increased employee-related costs due to our increased overall headcount in 2017.

Depreciation and amortization

The following table summarizes our depreciation and amortization:

	Year Ended December 31,		
(In millions)	**2018**	**2017**	**2016**
Depreciation — costs of revenue (1)	$ 75.9	$ 75.6	$ 98.9
Depreciation — other (2)	8.8	11.0	13.7
Total depreciation and amortization	$ 84.7	$ 86.6	$ 112.6

(1) Related to service equipment included in “Property, plant, and equipment, net” on our consolidated balance sheets discussed under the “Costs of revenue” heading of this discussion and analysis.
(2) Related to all long-lived assets other than service equipment included in “Property, plant, and equipment, net” on our consolidated balance sheet.

Depreciation and amortization in 2018 decreased by $1.9 million from 2017. This decrease was primarily due to asset disposals and certain assets, other than service equipment, becoming fully depreciated.

Depreciation and amortization in 2017 decreased by $26.0 million from 2016. This decrease was primarily due to a decrease in depreciation for our service equipment as previously discussed. The remaining decrease was primarily due to asset disposals and certain assets becoming fully depreciated.

Impairments and other charges

The following table summarizes our impairments and other charges:

	Year Ended December 31,		
(In millions)	**2018**	**2017**	**2016**
Supply commitment charges	$ 19.2	$ 1.2	$ 2.5
Impairment of assets	—	—	7.0
Employee severance costs	—	—	0.8
Lease abandonment charges	—	0.6	2.0
Total impairments and other charges	$ 19.2	$ 1.8	$ 12.3

Supply Commitment Charges : We incur supply commitment charges when our purchases of proppant from certain suppliers are less than the minimum purchase commitments in our supply contracts. According to the accounting guidance for firm purchase commitments, future charges that are considered likely are also required to be recorded in the current period.

We recorded aggregate charges under these supply contracts of $19.2 million, $1.2 million and $2.5 million in 2018, 2017 and 2016, respectively. These charges related to actual purchase shortfalls incurred, as well as forecasted purchase shortfalls that are expected to be incurred and settled in future periods. Approximately $12 million of our 2018 supply commitment charges relate to estimated losses under these contracts for 2019. These purchase shortfalls are due to our customers choosing to provide their own proppant, our customers' desire to purchase sand from sand mines closer to their operating areas, increased purchase commitments in 2019, and low activity levels in 2016.

A significant majority of our contracted proppant is for sand types that are mined primarily in the Midwestern United States ("Northern White" sand). Since we executed these contracts, customer demand for sand has shifted away from Northern White sand and towards lower-cost sand that is available from sand mines closer in proximity to our customers' operating locations. We are in discussions with our vendors to modify our supply contracts to better align with our customers' volume requirements, preferred sand types, and preferred sand mine locations.

Estimated losses related to these supply contracts contain uncertainties, such as future customer demand, future customer sand preferences, the legal defenses available to us, and the outcome of our ongoing vendor discussions. These uncertainties require us to use judgment to quantify the amount of these estimates. Actual results could materially differ from our estimate.

While we have successfully worked with our vendors to minimize charges related to these purchase commitments in the past, if we do not meet the minimum purchase commitments in the future and we are unable to adjust or avoid our contracted amounts, we may incur additional supply commitment charges in future periods.

Impairment of Assets : During 2016, we recorded asset impairments of $7.0 million related to service equipment and real property that we no longer use and identified to sell.

Lease Abandonment Charges : During 2016, we vacated certain leased facilities to consolidate our operations. In 2017 and 2016, we recognized expense of $0.6 million and $2.0 million, respectively, in connection with these actions.

Employee Severance Costs : During 2016, we incurred employee severance costs of $0.8 million in connection with our corporate and operating restructuring initiatives. At December 31, 2016, we had paid substantially all severance payments owed to former employees.

Loss on disposal of assets, net

During 2017 and 2016, we sold a number of surplus pieces of property and equipment. In 2017, we received $4.1 million of proceeds and recognized a $1.4 million net gain on the sale of these assets. In 2016, we received $23.5

million of proceeds and recognized a $1.3 million net loss on the sale of these assets. In February 2016, we sold substantially all of our remaining sand transportation equipment and related inventory. We received $8.0 million of proceeds and recognized a $0.3 million gain on this sale.

Gain on insurance recoveries

In January 2017, a fire destroyed certain equipment in one of our fleets. These assets were insured at values greater than their carrying values. We received $4.2 million of insurance recovery proceeds for these assets, which exceeded their carrying values by $2.9 million.

In January 2016, a fire at one of our job sites in Oklahoma destroyed substantially all of the equipment in one of our fleets. These assets were insured at values greater than their carrying values. We received $19.0 million of insurance recovery proceeds for these assets, which exceeded their carrying values by $15.1 million.

Interest expense, net

Interest expense, net of interest income, in 2018 decreased by $37.4 million from 2017. This decrease was primarily due to a lower average debt balance in 2018, after the repayment of $622.1 million of aggregate principal amount of long-term debt.

Interest expense, net of interest income, in 2017 decreased by $0.8 million from 2016. This decrease was primarily due to a lower average long-term debt balance, which was partially offset by higher average interest rates in 2017 for our senior floating rate notes due June 2020.

Gain (loss) on extinguishment of debt, net

In 2018, we repaid $310.0 million of aggregate principal amount of Term Loan. We recognized a loss on debt extinguishment of $2.7 million. In 2018, we repaid all $290.0 million remaining principal amount of our floating rate senior notes due in 2020 using cash on hand and proceeds received from our IPO. We recognized a loss on this debt extinguishment of $8.3 million. In 2018, we repurchased $22.1 million of aggregate principal amount of 2022 Senior Notes in the qualified institutional market. We recognized a gain on debt extinguishment of $1.2 million.

In 2017, we repaid $60.0 million of aggregate principal amount of our senior floating rate notes due June 2020. We recognized a loss on debt extinguishment of $1.8 million. In 2017, we also repurchased $17.3 million of aggregate principal amount of senior notes due May 2022 in the qualified institutional market. We recognized a gain on debt extinguishment of $0.4 million.

In the third quarter of 2016, we completed a tender offer and subsequent purchases in the qualified institutional market for a portion of our long-term debt in which we repurchased $90.7 million of aggregate principal amount of long-term debt and recorded a gain on debt extinguishment of $52.3 million.

Income tax expense

Income tax expense was $2.0 million and $1.6 million in 2018 and 2017, respectively. These amounts consisted of state margin taxes accounted for as income taxes and income taxes for states that limit the deduction of net operating loss carryforwards. In 2012, we recorded a valuation allowance to reduce our net deferred tax assets to zero. We continue to provide a valuation allowance against all deferred tax assets in excess of our deferred tax liabilities. As a result, we did not record any U.S. federal or other state income tax expense or benefit related to our income or losses in 2018, 2017 or 2016. See Note 11 — “Income Taxes” in Notes to our Consolidated Financial Statements included elsewhere in this annual report on Form 10-K for more information regarding our income taxes and valuation allowance.

Liquidity and Capital Resources

Sources of Liquidity

At December 31, 2018, we had $177.8 million of cash and cash equivalents. As of February 28, 2019, we had $106.1 million available for borrowings under our revolving credit facility. We believe that our cash and cash equivalents, cash provided by operations, and the availability under our revolving credit facility will be sufficient to fund our operations and capital expenditures for at least the next 12 months.

In February 2018, we entered into a $250 million asset-based revolving credit facility. The maximum availability of credit under the credit facility is limited at any time to the lesser of $250 million or the borrowing base. The borrowing base is based on percentages of eligible accounts receivable and eligible inventory and is subject to certain reserves. As of February 28, 2019, our borrowing base was $113.2 million and therefore our maximum availability under the credit facility was $113.2 million. As of February 28, 2019, there were no borrowings outstanding under the credit facility, and letters of credit totaling $7.1 million were issued, resulting in $106.1 million of availability under the credit facility.

In an event of default or if the amount available under our credit facility is less than either 10% of our maximum availability or $12.5 million, we will be required to maintain a minimum fixed charge coverage ratio of 1.0 to 1.0. If at any time borrowings and letters of credit issued under the credit facility exceed the borrowing base, we will be required to repay an amount equal to such excess. See Note 4 — "Indebtedness and Borrowing Facility" in notes to our consolidated financial statements included elsewhere in this annual report on Form 10-K for more information on our credit facility.

Cash Flows

The following table summarizes our cash flows:

	Year Ended December 31,		
(In millions)	**2018**	**2017**	**2016**
Net income (loss) adjusted for non-cash items	$ 368.9	$ 288.8	$ (130.9)
Changes in operating assets and liabilities	15.9	(108.8)	21.1
Net cash provided by (used in) operating activities	384.8	180.0	(109.8)
Net cash (used in) provided by investing activities	(98.6)	(54.6)	40.2
Net cash used in financing activities	(325.6)	(77.6)	(37.6)
Net (decrease) increase in cash, cash equivalents, and restricted cash	(39.4)	47.8	(107.2)
Cash, cash equivalents, and restricted cash at beginning of period	217.2	169.4	276.6
Cash, cash equivalents, and restricted cash at end of period	$ 177.8	$ 217.2	$ 169.4

Cash flows from operating activities have historically been a significant source of liquidity we use to fund capital expenditures and repay our debt. Changes in cash flows from operating activities are primarily affected by the same factors that affect our net income, excluding non-cash items such as depreciation and amortization, stock-based compensation, and impairments of assets.

Cash flows from operating activities : Net cash provided by operating activities was $384.8 million and $180.0 million in 2018 and 2017, respectively. Cash flows from operating activities consists of net income or loss adjusted for non-cash items and changes in operating assets and liabilities. Net income or loss adjusted for non-cash items resulted in a cash increases of $368.9 million and $288.8 million in 2018 and 2017, respectively. This change was primarily due to higher earnings in 2018. The net change in operating assets and liabilities resulted in a cash increase of $15.9 million and a cash decrease of $108.8 million in 2018 and 2017, respectively. The net change in operating assets and liabilities for 2018 was primarily due to a decrease in working capital resulting from our decreased activity level at the end of 2018 when compared to the same period in 2017.

Net cash provided by operating activities was $180.0 million in 2017 compared to net cash used in operating activities of $109.8 million in 2016. Net income or loss adjusted for non-cash items resulted in a cash increase of $288.8 million and a cash decrease of $130.9 million in 2017 and 2016, respectively. This change was primarily due to higher earnings in 2017. The net change in operating assets and liabilities resulted in a cash decrease of $108.8 million and a cash increase of $21.1 million 2017 and 2016, respectively. The net change in operating assets and liabilities for 2017 was primarily due to an increase in working capital resulting from our increased activity level.

Cash flows from investing activities : Net cash used in investing activities was $98.6 million and $54.6 million in 2018 and 2017, respectively. This increase was primarily due to increased capital expenditures in 2018, decreased asset disposal proceeds in 2018 and decreased insurance recovery proceeds received in 2018. The increase in capital expenditures in 2018 was due to our increased operations, fleet reactivations, and costs incurred to date to build two additional fleets.

Net cash used in investing activities was $54.6 million in 2017 compared to cash provided by investing activities of $40.2 million in 2016. This change was primarily due to increased capital expenditures in 2017, decreased asset disposal proceeds in 2017 and decreased insurance recovery proceeds received in 2017. The increase in capital expenditures in 2017 was due to our increased operations and fleet reactivations in 2017 as well as an approximate $10 million purchase of certain asset components to build two additional fleets.

Cash flows from financing activities : Net cash used in financing activities was $325.6 million in 2018. We used $625.1 million of cash to repay $622.1 million of aggregate principal amount of long-term debt, which we partially funded with $303.0 million of net proceeds received from our IPO.

Net cash used in financing activities was $77.6 million and $37.6 million in 2017 and 2016, respectively, which was comprised of debt repayments.

Cash Requirements

Contractual Commitments and Obligations

The following table summarizes our contractual commitments and obligations at December 31, 2018:

		Payments Due by Period			
(In millions)	Total	Less Than 1 Year	1-3 Years	3-5 Years	More than 5 Years
Long-term debt obligations	$ 507.9	$ —	$ 121.0	$ 386.9	$ —
Interest obligations (1)	105.1	33.1	59.9	12.1	—
Operating lease obligations	49.6	26.0	19.5	3.0	1.1
Purchase obligations	300.1	56.5	99.9	95.8	47.9
Total	$ 962.7	$ 115.6	$ 300.3	$ 497.8	$ 49.0

(1) Our Term Loan bears interest at a variable rate based on LIBOR plus a margin of 4.75% per annum, but never less than 5.75% per annum due to a 1.00% LIBOR floor. The future interest payment amounts included in the table for the Term Loan have been calculated at the rate in effect at December 31, 2018.

In 2018, we repaid $622.1 million of aggregate principal amount of long-term debt. We recognized a corresponding loss on debt extinguishment of $9.8 million. In 2019, we repaid $11.9 million of aggregate principal amount of long-term debt.

See Note 4 — "Indebtedness and Borrowing Facility" in Notes to our Consolidated Financial Statements included elsewhere in this annual report on Form 10-K for more information on our long-term debt obligations.

Capital Expenditures

The nature of our capital expenditures consists of a base level of investment required to support our current operations and amounts related to growth and company initiatives. Our capital expenditures for 2018 represented the amount necessary to support our current operations, fleet reactivations, and costs to-date to construct two additional fleets. During the fourth quarter of 2017, we purchased certain components that can be used to build two additional fleets. We completed one fleet in 2018 and we deferred completing the second fleet until a future period when our operations require it. We estimate capital expenditures in 2019 will range from $70 million to $80 million. Our estimate for capital expenditures will be used to support our current operations and fleet reactivations in 2019.

Our cash, cash equivalents, and cash provided by operations will be used to fund our capital expenditure needs, which we believe will be sufficient to support our operations. We continuously evaluate our capital expenditures and the amount we ultimately spend will primarily depend on industry conditions.

Off-Balance Sheet Arrangements

Except for our operating leases and purchase commitments, we do not have any off-balance sheet financing arrangements, transactions, or special purpose entities.

Critical Accounting Estimates

The preparation of our consolidated financial statements and related notes requires us to make estimates that affect the reported amounts of assets, liabilities, revenue and expenses, and related disclosures of contingent assets and liabilities. We base these estimates on historical results and various other assumptions believed to be reasonable, all of which form the basis for making estimates concerning the carrying values of assets and liabilities that are not readily available from other sources. Actual results may differ from these estimates.

In the notes accompanying the consolidated financial statements included elsewhere in this annual report on Form 10-K, we describe the significant accounting policies used in the preparation of our consolidated financial statements. We believe that the following represent the most significant estimates and management judgments used in preparing the consolidated financial statements.

Property, Plant, and Equipment

We calculate depreciation based on the estimated useful lives of our assets. When assets are placed into service, we make estimates with respect to their useful lives that we believe are reasonable. However, the cyclical nature of our business, which results in fluctuations in the use of our equipment and the environments in which we operate, could cause us to change our estimates, thus affecting the future calculation of depreciation.

We continuously perform repair and maintenance expenditures on our service equipment. Expenditures for renewals and betterments that extend the lives of our service equipment, which may include the replacement of significant components of service equipment, are capitalized and depreciated. Other repairs and maintenance costs are expensed as incurred. The determination of whether an expenditure should be capitalized or expensed requires management judgment with regard to the effect of the expenditure on the useful life of the equipment.

We separately identify and account for certain significant components of our hydraulic fracturing units including the engine, transmission, and pump, which requires us to separately estimate the useful lives of these components.

Impairment of Long-Lived Assets and Indefinite-lived Intangible Assets

Long-lived assets, such as property, plant, equipment are reviewed for impairment when events or changes in circumstances indicate that the carrying amount may not be recoverable, such as insufficient cash flows or plans to dispose of or sell long-lived assets before the end of their previously estimated useful lives. If the carrying amount is not recoverable, we recognize an impairment loss equal to the amount by which the carrying amount exceeds fair value. We estimate fair value based on the income, market or cost valuation techniques. Our fair value calculations for long-lived assets contain uncertainties because they require us to apply judgment and estimates concerning future cash flows, strategic plans, useful lives and assumptions about market performance. We also apply judgment in the selection of a discount rate that reflects the risk inherent in our current business model.

We have historically acquired indefinite-lived intangible assets in connection with business acquisitions. We review our indefinite-lived intangible assets on an annual basis, at the beginning of the fourth quarter, and whenever events or changes in circumstances indicate the carrying value of an intangible asset may exceed its fair value. If the carrying value of an intangible asset exceeds its fair value, we recognize an impairment loss for this difference. Our impairment loss calculations for indefinite-lived intangible assets contain uncertainties because they require us to estimate fair values of our intangible assets. We estimate fair values based on various valuation techniques such as discounted cash flows and comparable market analyses. These types of analyses contain uncertainties because they require us to make judgments and assumptions regarding future profitability, industry factors, planned strategic initiatives, discount rates and other factors.

Unconditional Purchase Obligations

We have historically entered into supply arrangements, primarily for sand, with our vendors that contain unconditional purchase obligations. These represent obligations to transfer funds in the future for fixed or minimum quantities of goods at fixed or minimum prices. We enter into these unconditional purchase obligation arrangements in the normal course of business to ensure that adequate levels of sourced product are available to us. To account for these arrangements, we must monitor whether we may be required to make a minimum payment to a vendor in a future period because our projected inventory purchases may not satisfy our minimum commitments. If we conclude that it is probable that we will make a minimum payment under these arrangements, we will record an estimated loss for these commitments in the current period.

A loss related to an unconditional purchase obligation contains uncertainties because it requires us to make assumptions and apply judgment to forecast future demand, determine the ultimate allocation of a commitment shortfall to our vendors, and assess our ability to cure a commitment shortfall during cure periods if allowed for by certain vendors. If a supply arrangement is for a term of longer than one year, our estimates of future demand beyond one year become less reliable due to the inherent volatility of our industry. Therefore, we generally do not attempt to quantify and recognize a potential shortfall for future periods beyond one year. Although we believe that our judgments and estimates are reasonable, actual results could differ, and we may be subject to additional losses or gains that could be material in future periods.

Income Taxes

Income taxes are accounted for using the asset and liability method. Deferred taxes are recognized for the tax consequences of temporary differences by applying enacted statutory tax rates applicable to future years to differences between the financial statement carrying amounts and the tax bases of existing assets and liabilities. We recognize future tax benefits to the extent that such benefits are more likely than not to be realized.

We record a valuation allowance to reduce the value of a deferred tax asset if based on the consideration of all available evidence, it is more likely than not that all or some portion of the deferred tax asset will not be realized. Significant weight is given to evidence that can be objectively verified. We evaluate our deferred income taxes at each reporting date to determine if a valuation allowance is required by considering all available evidence, including historical and projected taxable income and tax planning strategies. We will adjust a previously established valuation allowance if we change our assessment of the amount of deferred income tax asset that is more likely than not to be realized.

An estimate of whether a valuation allowance is necessary and the related amount of the valuation allowance contain uncertainties because it requires us to apply judgment to all positive and negative evidence available to us. When considering the likelihood of whether a deferred tax asset will be available to offset future taxable income, we assess, among other things, our historical and projected income or loss. When performing this assessment, we must consider the cyclical nature of our business. Our business is heavily influenced by current and expected prices for oil and natural gas. These prices are outside of our control and a downturn in the market can result in periods of significant losses for us, which could prevent the realization of a deferred tax asset. We therefore must consider the future possibility of an industry downturn and the severity of its effect on our business when considering all positive and negative evidence related to the realization of our deferred tax assets. Although we believe that our judgments and estimates are reasonable, an adjustment to a valuation allowance in a given period may require a material adjustment in a future period if our assumptions regarding our future taxable income are proven inaccurate due to an industry downturn.

Recent Accounting Pronouncements

See Note 2 — "Summary of Significant Accounting Policies" in Notes to our Consolidated Financial Statements included elsewhere in this annual report on Form 10-K for more information.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

At December 31, 2018, we held no derivative instruments that materially increased our exposure to market risks for interest rates, foreign currency rates, commodity prices or other market price risks.

We are subject to interest rate risk on a portion of our long-term debt. Our Term Loan bears interest at a variable rate based on LIBOR plus a margin of 4.75% per annum, with a 1.00% LIBOR floor. As of December 31, 2018, LIBOR was above the 1.00% floor. Therefore a 1.00% increase or decrease in LIBOR would increase or decrease the annual interest payments for this debt by approximately $1.2 million.

We are subject to commodity price risk related to our diesel fuel usage. A $0.25 per gallon increase or decrease in the price of diesel fuel would have increased or decreased our costs of revenue, excluding depreciation, by approximately $5.5 million in 2018.

During 2018, substantially all of our operations were conducted within the United States; therefore we had no significant exposure to foreign currency exchange rate risk.

Item 8. Financial Statements and Supplementary Data

The information required by this Item 8 is included in our Consolidated Financial Statements and the notes thereto beginning on page F-1 in this annual report on Form 10-K.

Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

As required by Rule 13a-15(b) and Rule 15d-15(b) under the Exchange Act, our management, including our Chief Executive Officer and Chief Financial Officer, evaluated, as of December 31, 2018, the effectiveness of our disclosure controls and procedures as defined in Exchange Act Rule 13a-15(e) and Rule 15d-15(e). Based on that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective as of December 31, 2018, to provide reasonable assurance that information required to be disclosed by us in reports filed or submitted under the Exchange Act is recorded, processed, summarized and reported within the time periods specified by the rules and forms of the Exchange Act and is accumulated and communicated to management, including the Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosures.

We believe, however, that a controls system, no matter how well designed and operated, cannot provide absolute assurance that the objectives of the controls systems are met, and no evaluation of controls can provide absolute assurance that all control issues and instances of fraud or error, if any, within a company have been detected.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. As defined in Exchange Act Rule 13a-15(f), internal control over financial reporting is a process designed by, or under the supervision of, our Chief Executive Officer and Chief Financial Officer and effected by our Board of Directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with GAAP and includes those policies and procedures that (i) pertain to the maintenance of records that in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the Company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with GAAP, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and directors of the Company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on the financial statements.

The design of any system of control is based upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated objectives under all future events, no matter how remote, or that the degree of compliance with the policies or procedures may not deteriorate. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Accordingly, even effective internal control over financial reporting can only provide reasonable assurance of achieving their control objectives. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we carried out an evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2018 based on the criteria in Internal Control — Integrated Framework (2013 Framework) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation, our management concluded that our internal control over financial reporting was effective as of December 31, 2018.

Attestation Report of the Independent Registered Public Accounting Firm

Until we are an accelerated filer or a large accelerated filer (as defined in Exchange Act Rule 12b-2), we will not be required to comply with the auditor attestation requirements related to internal control over financial reporting pursuant to Section 404(b) of the Sarbanes-Oxley Act.

Changes in Internal Control over Financial Reporting

There has been no change in internal control over financial reporting that occurred during the quarter ended December 31, 2018 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required in response to this Item 10 is incorporated herein by reference to our definitive proxy statement to be filed with the SEC pursuant to Regulation 14A promulgated under the Exchange Act not later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

Item 11. Executive Compensation

The information required in response to this Item 11 is incorporated herein by reference to our definitive proxy statement to be filed with the SEC pursuant to Regulation 14A promulgated under the Exchange Act not later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required in response to this Item 12 is incorporated herein by reference to our definitive proxy statement to be filed with the SEC pursuant to Regulation 14A promulgated under the Exchange Act not later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required in response to this Item 13 is incorporated herein by reference to our definitive proxy statement to be filed with the SEC pursuant to Regulation 14A promulgated under the Exchange Act not later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

Item 14. Principal Accountant Fees and Services

The information required in response to this Item 14 is incorporated herein by reference to our definitive proxy statement to be filed with the SEC pursuant to Regulation 14A promulgated under the Exchange Act not later than 120 days after the end of the fiscal year covered by this Annual Report on Form 10-K.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) The following documents are filed as part of this Annual Report:

1. *Financial Statements* . See Index to Consolidated Financial Statements of FTS International, Inc. on page F-1 of this Report.
2. *Financial Statement Schedules* . Schedules are omitted because they are not required or applicable, or the required information is included in the Financial Statement or related notes thereto.
3. *Exhibits* . The exhibits filed with this Report are set forth in the Exhibit Index.

EXHIBIT INDEX

Exhibit Number		Description
3.1	*	Amended and Restated Certificate of Incorporation of the Company
3.2	*	Amended and Restated Bylaws of the Company
4.1	*	Indenture, dated as of April 16, 2014, among FTS International, Inc., as issuer, the guarantors named therein and U.S. Bank National Association, as collateral agent and trustee
4.2	*	Registration Rights Agreement
4.3	*	Investors' Rights Agreement by and among FTS International, Inc., Maju Investments (Mauritius) Pte Ltd and CHK Energy Holdings, Inc.
4.4	*	Investors' Rights Agreement by and among FTS International, Inc., Senja Capital Ltd and Hampton Asset Holding Ltd.
10.1	*	Term Loan Agreement, dated as of April 16, 2014, among FTS International, Inc., Wells Fargo Bank, National Association, as administrative agent, and other lenders party thereto
10.2	*†	Severance Agreement, dated as of May 3, 2016, between FTS International, Inc. and Michael J. Doss
10.3	*†	Severance Agreement, dated as of May 3, 2016, between FTS International, Inc. and Buddy Petersen
10.4	*†	Severance Agreement, dated as of May 3, 2016, between FTS International, Inc. and Lance Turner
10.5	*†	Letter Agreement, dated as of August 5, 2015, between FTS International, Inc. and Lance Turner
10.6	*†	Letter Agreement, dated as of March 29, 2017, between FTS International, Inc. and Karen D. Thornton
10.7	*†	Letter Agreement, dated as of March 29, 2017, between FTS International, Inc. and Jennifer L. Keefe
10.8	*†	FTS International, Inc. 2014 Long-Term Incentive Plan
10.9	*†	Form of Restricted Stock Unit Agreement (Stock Settled) under the 2014 Long-Term Incentive Plan
10.10	*†	Description of 2017 Short-Term Incentive Plan
10.11	*†	Description of 2018 Short-Term Incentive Plan
10.12	*†	Form of Indemnification Agreement between FTS International, Inc. and each of its directors and executive officers
10.13	*	Master Service Agreement, dated as of July 9, 2012, by and between Chesapeake Operating, Inc. and FTS International Services, LLC
10.14	*	Master Commercial Agreement, dated as of December 24, 2016, by and between Chesapeake Operating, LLC and FTS International Services, LLC
10.15	*	Security Agreement, dated as of April 16, 2014, by and among FTS International, Inc., FTS International Services, LLC, FTS International Manufacturing, LLC and U.S. Bank National Association, as collateral agent

Exhibit Number		Description
10.16	*	Pari Passu Intercreditor Agreement, dated as of April 16, 2014, among FTS International, Inc., FTS International Services, LLC, FTS International Manufacturing, LLC and U.S. Bank National Association, as collateral agent and Wells Fargo Bank, National Association, in its capacity as administrative agent for the Term Secured Parties (as defined therein)
10.17	*	Junior Lien Intercreditor Agreement, dated as of April 16, 2014, among FTS International, Inc., FTS International Services, LLC, FTS International Manufacturing, LLC, Wells Fargo Bank, National Association in its capacity as administrative agent under the Term Loan Agreement, US Bank National Association, as collateral agent and Wells Fargo Bank, National Association, in its capacity as administrative agent for the ABL Secured Parties (as defined therein)
10.18	*	Guaranty and Security Agreement, dated as of April 16, 2014, from FTS International, Inc., FTS International Services, LLC and FTS International Manufacturing, LLC to Wells Fargo Bank, National Association
10.19	*	Amended and Restated Trademark Security Agreement, dated as of June 22, 2015, from FTS International Services, LLC to Wells Fargo Bank, National Association pursuant to the Term Loan Agreement dated April 16, 2014
10.20	*	Amended and Restated Trademark Security Agreement, dated as of June 22, 2015, from FTS International Services, LLC to U.S. Bank National Association pursuant to the Indenture dated April 16, 2014
10.21	*	Amended and Restated Trademark Security Agreement, dated as of June 22, 2015, from FTS International Services, LLC to U.S. Bank National Association pursuant to the Indenture dated June 1, 2015
10.22	*†	FTS International, Inc. 2018 Equity and Incentive Compensation Plan
10.23	*†	Form of Restricted Stock Unit Agreement under the 2018 Equity and Incentive Compensation Plan
10.24	*†	First Amendment to Severance Agreement, dated as of June 15, 2017, between FTS International, Inc. and Michael J. Doss
10.25	*†	First Amendment to Severance Agreement, dated as of June 15, 2017, between FTS International, Inc. and Buddy Petersen
10.26	*†	First Amendment to Severance Agreement, dated as of June 15, 2017, between FTS International, Inc. and Lance Turner
10.27	*†	Letter Agreement, dated as of June 15, 2017, between FTS International, Inc. and Karen D. Thornton
10.28	*†	Letter Agreement, dated as of June 15, 2017, between FTS International, Inc. and Jennifer L. Keefe
10.29	*	Credit Agreement, dated February 22, 2018, among FTS International, Inc., Wells Fargo Bank, National Association, as administrative agent, and the several lenders party thereto
10.30	*	Guaranty and Security Agreement, dated February 22, 2018, among FTS International Services, LLC, FTS International, Inc., FTS International Manufacturing, LLC and Wells Fargo Bank, National Association, as administrative agent

Exhibit Number		Description
10.31	*	Trademark Security Agreement, dated February 22, 2018, between FTS International Services, LLC and Wells Fargo Bank, National Association, as administrative agent
10.32	*	Junior Lien Intercreditor Agreement Joinder, dated as of February 22, 2018, between FTS International, Inc., FTS International Services, LLC, FTS International Manufacturing, LLC, Wells Fargo Bank, National Association in its capacity as administrative agent under the Term Loan Agreement, US Bank National Association, as the notes collateral agent and Wells Fargo Bank, National Association, in its capacity as the ABL Facility Agent (as defined in the Junior Lien Intercreditor Agreement)
10.33	*†	Letter Agreement, dated December 19, 2016, between FTS International, Inc. and Karen D. Thornton
10.34	*†	Form of Restricted Stock Unit Agreement for Directors under the 2018 Equity and Incentive Compensation Plan
21.1	**	List of Subsidiaries
23.1	**	Consent of Grant Thornton LLP
24.1	**	Power of Attorney (included on signature page)
31.1	**	Certification of Principal Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2	**	Certification of Principal Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1	***	Certification of Chief Executive Officer and Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101.INS	***	XBRL Instance Document
101.SCH	***	XBRL Schema Document
101.CAL	***	XBRL Calculation Linkbase Document
101.DEF	***	XBRL Definition Linkbase Document
101.LAB	***	XBRL Label Linkbase Document
101.PRE	***	XBRL Presentation Linkbase Document

* Previously filed
** Filed herewith
*** Furnished herewith
† Management contract, compensatory plan or arrangement

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

FTS INTERNATIONAL, INC.

February 28, 2019	/s/ Michael J. Doss Michael J. Doss Chief Executive Officer (Principal Executive Officer)

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Michael J. Doss and Jennifer L. Keefe, and each of them, with the full power to act without the other, such person's true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign, execute and file this Annual Report on Form 10-K and any or all amendments thereto, with all exhibits and schedules thereto, and other documents in connection therewith with the Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing necessary or desirable to be done in and about the premises, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, or their substitute or substitutes, may lawfully do or cause to be done.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Michael J. Doss Michael J. Doss	Chief Executive Officer and Director (Principal Executive Officer)	February 28, 2019
/s/ Lance D. Turner Lance D. Turner	Chief Financial Officer and Treasurer (Principal Financial Officer and Principal Accounting Officer)	February 28, 2019
Goh Yong Siang	Chairman	February 28, 2019
/s/ Domenic J. Dell'Osso, Jr. Domenic J. Dell'Osso, Jr.	Director	February 28, 2019
Bryan J. Lemmerman	Director	February 28, 2019
/s/ Ong Tiong Sin Ong Tiong Sin	Director	February 28, 2019
Sim Hong Boon	Director	February 28, 2019
/s/ Michael C. Jennings Michael C. Jennings	Director	February 28, 2019
/s/ Carol J. Johnson Carol J. Johnson	Director	February 28, 2019

FTS INTERNATIONAL, INC.
INDEX TO FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Stockholders
FTS International, Inc.

Opinion on the financial statements
We have audited the accompanying consolidated balance sheets of FTS International, Inc. (a Delaware corporation) and subsidiaries (the "Company") as of December 31, 2018 and 2017, the related consolidated statements of operations, cash flows, and stockholders' equity (deficit) for each of the three years in the period ended December 31, 2018, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018, in conformity with accounting principles generally accepted in the United States of America.

Basis for opinion
These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ GRANT THORNTON LLP

We have served as the Company's auditor since 2015.

Dallas, Texas
February 28, 2019

FTS INTERNATIONAL, INC.
CONSOLIDATED STATEMENTS OF OPERATIONS

(In millions, except per share amounts)	Year Ended December 31, 2018	2017	2016
Revenue			
Revenue	$ 1,450.4	$ 1,352.7	$ 529.5
Revenue from related parties	92.9	113.4	2.7
Total revenue	1,543.3	1,466.1	532.2
Operating expenses			
Costs of revenue (excluding depreciation of $75.9, $75.6 and $98.9, respectively, included in depreciation and amortization below)	1,033.2	1,009.8	510.5
Selling, general and administrative	87.9	81.0	64.4
Depreciation and amortization	84.7	86.6	112.6
Impairments and other charges	19.2	1.8	12.3
(Gain) loss on disposal of assets, net	(0.1)	(1.4)	1.0
Gain on insurance recoveries	—	(2.9)	(15.1)
Total operating expenses	1,224.9	1,174.9	685.7
Operating income (loss)	318.4	291.2	(153.5)
Interest expense, net	(49.3)	(86.7)	(87.5)
(Loss) gain on extinguishment of debt, net	(9.8)	(1.4)	53.7
Equity in net income (loss) of joint venture affiliate	1.1	(0.8)	(2.8)
Income (loss) before income taxes	260.4	202.3	(190.1)
Income tax expense (benefit)	2.0	1.6	(1.6)
Net income (loss)	$ 258.4	$ 200.7	$ (188.5)
Net income (loss) attributable to common stockholders	$ 681.6	$ (25.9)	$ (370.1)
Basic and diluted earnings (loss) per share attributable to common stockholders	$ 6.54	$ (0.50)	$ (7.14)
Shares used in computing basic and diluted earnings (loss) per share	104.2	51.8	51.8

The accompanying notes are an integral part of these consolidated financial statements.

FTS INTERNATIONAL, INC.
CONSOLIDATED BALANCE SHEETS

(In millions, except share amounts)	December 31, 2018	December 31, 2017
ASSETS		
Current assets		
Cash and cash equivalents	$ 177.8	$ 208.1
Accounts receivable, net	158.3	231.1
Accounts receivable from related parties	—	3.0
Inventories	66.6	44.5
Prepaid expenses and other current assets	7.0	19.9
Total current assets	409.7	506.6
Property, plant, and equipment, net	275.3	270.9
Intangible assets, net	29.5	29.5
Investment in joint venture affiliate	23.2	21.0
Other assets	6.0	3.0
Total assets	$ 743.7	$ 831.0
LIABILITIES AND STOCKHOLDERS' EQUITY (DEFICIT)		
Current liabilities		
Accounts payable	$ 101.1	$ 138.3
Accrued expenses and other current liabilities	31.3	44.4
Total current liabilities	132.4	182.7
Long-term debt	503.2	1,116.4
Other liabilities	1.2	0.4
Total liabilities	636.8	1,299.5
Commitments and contingencies (Note 13)		
Series A convertible preferred stock, $0.01 par value, 350,000 shares authorized, issued and outstanding at December 31, 2017	—	349.8
Stockholders' equity (deficit)		
Preferred stock, $0.01 par value, 25,000,000 shares authorized at December 31, 2018	—	—
Common stock, $0.01 par value, 320,000,000 shares authorized, 109,434,841 shares issued and outstanding at December 31, 2018 and 51,782,735 shares issued and outstanding at December 31, 2017	36.4	35.9
Additional paid-in capital	4,378.4	3,712.1
Accumulated deficit	(4,307.9)	(4,566.3)
Total stockholders' equity (deficit)	106.9	(818.3)
Total liabilities and stockholders' equity (deficit)	$ 743.7	$ 831.0

The accompanying notes are an integral part of these consolidated financial statements.

FTS INTERNATIONAL, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
(In millions)	**2018**	**2017**	**2016**
Cash flows from operating activities			
Net income (loss)	$ 258.4	$ 200.7	$ (188.5)
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Depreciation and amortization	84.7	86.6	112.6
Stock-based compensation	15.2	—	—
Amortization of debt discounts and issuance costs	2.5	3.9	3.8
Impairment of assets	—	—	7.0
(Gain) loss on disposal of assets, net	(0.1)	(1.4)	1.0
Loss (gain) on extinguishment of debt, net	9.8	1.4	(53.7)
Gain on insurance recoveries	—	(2.9)	(15.1)
Other non-cash items	(1.6)	0.5	2.0
Changes in operating assets and liabilities:			
Accounts receivable	72.7	(154.9)	24.0
Accounts receivable from related parties	3.0	(2.9)	3.4
Inventories	(22.6)	(20.1)	5.3
Prepaid expenses and other assets	2.8	(4.4)	2.6
Accounts payable	(27.7)	65.2	2.8
Accrued expenses and other liabilities	(12.3)	8.3	(17.0)
Net cash provided by (used in) operating activities	384.8	180.0	(109.8)
Cash flows from investing activities			
Capital expenditures	(100.5)	(64.0)	(10.3)
Proceeds from disposal of assets	1.9	4.1	31.5
Proceeds from insurance recoveries	—	4.2	19.0
Other	—	1.1	—
Net cash (used in) provided by investing activities	(98.6)	(54.6)	40.2
Cash flows from financing activities			
Repayments of long-term debt	(625.1)	(77.6)	(37.6)
Net proceeds from issuance of common stock	303.0	—	—
Payments of revolving credit facility issuance costs	(2.4)	—	—
Taxes paid related to net share settlement of equity awards	(1.1)	—	—
Net cash used in financing activities	(325.6)	(77.6)	(37.6)
Net (decrease) increase in cash, cash equivalents, and restricted cash	(39.4)	47.8	(107.2)
Cash, cash equivalents, and restricted cash at beginning of period	217.2	169.4	276.6
Cash, cash equivalents, and restricted cash at end of period	$ 177.8	$ 217.2	$ 169.4
Supplemental cash flow information:			
Interest paid	43.1	83.2	84.2
Income tax payments, net	2.3	—	—
Supplemental disclosure of noncash investing activities:			
Capital expenditures included in accounts payable	4.0	13.6	1.2

The accompanying notes are an integral part of these consolidated financial statements.

FTS INTERNATIONAL, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (DEFICIT)

(Dollars in millions and shares in thousands)	Common Stock Shares	Common Stock Amount	Additional Paid-in Capital	Accumulated Deficit	Total Stockholders' Equity (Deficit)
Balance at January 1, 2016	51,784	$ 35.9	$ 3,712.1	$ (4,578.5)	$ (830.5)
Net loss	—	—	—	(188.5)	(188.5)
Activity related to stock plans	(1)	—	—	—	—
Balance at December 31, 2016	51,783	35.9	3,712.1	(4,767.0)	(1,019.0)
Net income	—	—	—	200.7	200.7
Balance at December 31, 2017	51,783	35.9	3,712.1	(4,566.3)	(818.3)
Net income	—	—	—	258.4	258.4
Activity related to stock plans	160	—	14.0	—	14.0
Recapitalization of convertible preferred stock to common stock	39,415	0.4	349.4	—	349.8
Issuance of common stock	18,077	0.1	302.9	—	303.0
Balance at December 31, 2018	109,435	$ 36.4	$ 4,378.4	$ (4,307.9)	$ 106.9

The accompanying notes are an integral part of these consolidated financial statements.

FTS INTERNATIONAL, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

NOTE 1 — DESCRIPTION OF BUSINESS

Throughout the notes to these consolidated financial statements, the terms “the Company,” “we,” “us,” “our” or “ours” refer to FTS International, Inc., together with its consolidated subsidiaries.

We are one of the largest providers of hydraulic fracturing services in North America. Our services enhance hydrocarbon flow from oil and natural gas wells drilled by exploration and production (“E&P”), companies in shale and other unconventional resource formations. Our customers include leading E&P companies that specialize in unconventional oil and natural gas resources in North America. We operate in five of the most active major unconventional basins in the United States: the Permian Basin, the SCOOP/STACK Formation, the Marcellus/Utica Shale, the Eagle Ford Shale and the Haynesville Shale. Substantially all of our business activities support our well completion services. We manage our business, allocate resources, and assess our financial performance on a consolidated basis; therefore we do not have separate operating segments.

In 2014, we entered into a joint venture agreement with the Sinopec Oilfield Service Corporation (“Sinopec”). This joint venture collaboration offers hydraulic stimulation services in China. The joint venture company, SinoFTS Petroleum Services Ltd. (“SinoFTS”), is owned 55% by Sinopec and 45% by the Company. SinoFTS serves both Sinopec and other exploration and production companies in China. On January 9, 2019, we filed an arbitration proceeding with the Singapore International Arbitration Centre to resolve a dispute related to the manner of operations by our JV partner.

Recent Developments : In February 2018, the Company completed an initial public offering of its common stock and completed a number of other transactions. See Note 5 — “Stockholders’ Equity (Deficit)” for more information.

Concentrations of Risk

Our business activities are concentrated in the well completion services segment of the oilfield services industry in the United States. The market for these services is cyclical, and we depend on the willingness of our customers to make operating and capital expenditures to explore for, develop, and produce oil and natural gas in the United States. The willingness of our customers to undertake these activities depends largely upon prevailing industry conditions that are predominantly influenced by current and expected prices for oil and natural gas. Historically, a low commodity-price environment has caused our customers to significantly reduce their hydraulic fracturing activities and the prices they are willing to pay for those services. During these periods, these customer actions materially adversely affected our business, financial condition and results of operations.

Our customer base has historically been concentrated. Our business, financial condition and results of operations could be materially adversely affected if one or more of our significant customers ceases to engage us for our services on favorable terms, or at all, or fails to pay, or delays in paying, us significant amounts of our outstanding receivables. The following table shows the customers who represented more than 10% of our total revenue in any one of the periods indicated below:

	Year Ended December 31,		
	2018	2017	2016
EQT Production Company	12 %	*	12 %
Devon Energy Corporation	12 %	*	*
Newfield Exploration	*	*	18 %
EP Energy Corporation	*	*	11 %
Vine Oil and Gas, L.P.	*	*	10 %

* Less than 10%

Related Parties

We have historically provided services and sold equipment to Chesapeake Energy Corporation and its affiliates ("Chesapeake"), which beneficially owned approximately 20% of our outstanding common stock as of December 31, 2018, and had the right to designate two individuals to serve on our board of directors during the periods presented. Revenue earned from Chesapeake was $92.9 million, $113.1 million and $2.4 million in 2018, 2017 and 2016, respectively. All revenue earned from Chesapeake is based on the prevailing market prices for our services at the time the work is performed. At December 31, 2018 and 2017, we had accounts receivable balances of zero and $2.7 million, respectively, from Chesapeake.

We sold equipment to SinoFTS for $0.3 million and $0.3 million in 2017 and 2016, respectively. All revenue earned from SinoFTS is based on prevailing market prices. At December 31, 2018 and 2017, we had accounts receivable balances of zero and $0.3 million, respectively, from this related party.

NOTE 2 — SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation

We prepared the consolidated financial statements in accordance with accounting principles generally accepted in the United States of America ("GAAP"). The consolidated financial statements include the accounts of the Company and all majority-owned domestic and foreign subsidiaries. Investments over which we have the ability to exercise significant influence over operating and financial policies, but do not hold a controlling interest, are accounted for using the equity method of accounting. All significant intercompany accounts and transactions have been eliminated in consolidation. There were no items of other comprehensive income in the periods presented.

Use of Estimates

The preparation of financial statements in accordance with GAAP requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities, related revenues and expenses, and the disclosure of gain and loss contingencies at the date of the financial statements and during the periods presented. We base these estimates on historical results and various other assumptions believed to be reasonable, all of which form the basis for making estimates concerning the carrying values of assets and liabilities that are not readily available from other sources. Actual results could differ materially from those estimates.

Cash and Cash Equivalents

Cash equivalents include only investments with an original maturity of three months or less. We occasionally hold cash deposits in financial institutions that exceed federally insured limits. We monitor the credit ratings and our concentration of risk with these financial institutions on a continuing basis to safeguard our cash deposits.

Accounts Receivable and Allowance for Doubtful Accounts

Accounts receivable are recorded at their invoiced amounts or amounts for which we have a right to invoice based on services completed. We establish an allowance for doubtful accounts to reduce the carrying value of our accounts receivable based on a number of factors, including the length of time that accounts receivable are past due, our previous loss history, and the customer's creditworthiness. The provision for doubtful accounts was not significant for any period presented in the Consolidated Statements of Operations.

Inventories

Inventories consist of proppants and chemicals that are used to provide hydraulic fracturing services, maintenance parts that are used to service our hydraulic fracturing equipment, and explosives and perforating guns that are used to provide our wireline services. Proppants generally consist of raw sand, resin-coated sand or ceramic particles.

Inventories are stated at the lower of cost or market value. The cost basis of our inventories is based on the average cost method and includes in-bound freight costs.

As necessary, we record an adjustment to decrease the value of slow moving and obsolete inventory to its net realizable value. To determine the adjustment amount, we regularly review inventory quantities on hand and compare them to estimates of future product demand, market conditions, production requirements and technological developments.

Restricted Cash

We have pledged cash as collateral for letters of credit issued to our casualty and general liability insurance provider. Restricted cash totaled zero and $9.1 million at December 31, 2018 and 2017, respectively, and is included in prepaid expenses and other current assets in our Consolidated Balance Sheets. These amounts represent cash used to secure certain letters of credit. In February 2018, we closed on a new revolving credit facility, and issued replacement letters of credit under the new facility, which allowed us to cancel the cash secured letters of credit.

Property, Plant, and Equipment

Property, plant, and equipment is stated at cost less accumulated depreciation, which is generally provided by using the straight-line method over the estimated useful lives of the individual assets. We manufacture our hydraulic fracturing units and the cost of this equipment, which includes direct and indirect manufacturing costs, is capitalized and carried as construction-in-progress until it is completed. Expenditures for renewals and betterments that extend the lives of our service equipment, which includes the replacement of significant components of service equipment, are capitalized and depreciated. Other repairs and maintenance costs are expensed as incurred.

We capitalize qualifying costs related to the acquisition or development of internal-use software. Capitalization of costs begins after the conceptual formulation stage has been completed. Capitalized costs are amortized over the estimated useful life of the software, which ranges between three and five years. The unamortized balance of capitalized software costs at December 31, 2018 and 2017, was $3.7 million and $7.5 million, respectively. Amortization of computer software was $4.2 million, $5.3 million and $5.7 million in 2018, 2017 and 2016, respectively.

Goodwill and Intangible Assets

We have historically acquired goodwill and indefinite-lived intangible assets related to business acquisitions. Goodwill is the amount by which the consideration transferred to acquire a business exceeds the fair value of the underlying individual assets and liabilities of that business. Goodwill and intangible assets with indefinite lives are not amortized. The amount of goodwill and indefinite-lived intangible assets recorded in our Consolidated Balance Sheets for the periods presented was zero and $29.5 million, respectively. Intangible assets with definite lives are amortized on a basis that reflects the pattern in which the economic benefits of the intangible assets are realized, which is generally on a straight-line basis over the asset's estimated useful life. The amount of intangible assets with definite lives recorded in our Consolidated Balance Sheets for the periods presented was zero.

Impairment of Long-Lived Assets, Goodwill and Other Intangible Assets

Long-lived assets, such as property, plant, equipment and definite-lived intangible assets, are reviewed for impairment when events or changes in circumstances indicate that the carrying value of the asset may not be recoverable. Recoverability is assessed based on the undiscounted future cash flows generated by the asset or asset group. If the carrying amount of an asset or asset group is not recoverable, we recognize an impairment loss equal to the amount by which the carrying amount exceeds fair value. We estimate fair value based on the income, market, or cost valuation techniques.

Goodwill and intangible assets with indefinite lives are reviewed at least annually for impairment, and in interim periods if certain events occur indicating that the carrying value of goodwill or intangible assets may be impaired. We estimate fair values utilizing valuation methods such as discounted cash flows and comparable market valuations. We perform our annual impairment tests at the beginning of the fourth quarter.

Equity Method Investments

Investments in which we have the ability to exercise significant influence, but not control, are accounted for pursuant to the equity method of accounting. We recognize our proportionate share of earnings or losses of our international affiliates three months after they occur. When events and circumstances warrant, investments accounted for under the equity method of accounting are evaluated for impairment. An impairment charge is recorded whenever a decline in value of an investment below its carrying amount is determined to be other-than-temporary.

Income Taxes

Income taxes are accounted for using the asset and liability method. Deferred taxes are recognized for the tax consequences of temporary differences by applying enacted statutory tax rates applicable to future years to differences between the financial statement carrying amounts and the tax bases of existing assets and liabilities. The effect on deferred taxes for a change in tax rates is recognized in earnings in the period that includes the enactment date. We recognize future tax benefits to the extent that such benefits are more likely than not to be realized.

We record a valuation allowance to reduce the value of a deferred tax asset if based on the consideration of all available evidence, it is more likely than not that all or some portion of the deferred tax asset will not be realized. Significant weight is given to evidence that can be objectively verified. We evaluate our deferred income taxes quarterly to determine if a valuation allowance is required by considering all available evidence, including historical and projected taxable income and tax planning strategies. Any deferred tax asset subject to a valuation allowance is still available to us to offset future taxable income, subject to annual limitations in the event of an “ownership change” under Section 382 of the Internal Revenue Code. We will adjust a previously established valuation allowance if we change our assessment of the amount of deferred income tax asset that is more likely than not to be realized.

Revenue Recognition

The Company contracts with its customers to perform hydraulic fracturing services on one or more oil or natural gas wells. Under these arrangements, we satisfy our performance obligations as services are rendered, which is generally upon the completion of a fracturing stage. We typically complete one or more stages per day. A stage is considered complete when we have met the specifications set forth by the customer, at which time we have the right to invoice the customer and the customer is obligated to pay us for the services rendered. The price for our services typically includes an equipment charge and product charges for proppant, chemicals and other products actually consumed during the course of providing our services. The price for each stage of a particular well does not vary significantly. Payment terms average approximately two months from the date a stage is completed. All consideration owed to us for services performed during a period is fixed and our right to receive it is unconditional.

We also contract with some customers to provide them with the exclusive use of a fracturing fleet for a period of time. We satisfy our performance obligation as services are rendered, which is based on the passage of time rather than the completion of a stage. Under these arrangements, we have the right to receive consideration from a customer even if circumstances outside of our control prevent us from performing our work. All consideration owed to us for services performed during a period is fixed and our right to receive it is unconditional.

Pricing for our services is frequently negotiated with our customers and is based on prevailing market rates during each reporting period. The amounts we invoice our customers for services performed during a period are directly related to the value received by the customers for the period. There is no inherent uncertainty to the amount of consideration we will receive for services performed during a period and no judgment is required to allocate a portion of the transaction price to a future period. Accordingly, we are not required to identify any unsatisfied performance obligations nor attribute any revenue to them.

During 2018 we acted as a principal, rather than as an agent, for all of the goods and services that we provided to our customers; our customer arrangements did not include obligations for refunds or warranties of our work; and we did not incur incremental costs to obtain or fulfill contracts with our customers.

To comply with the FASB disclosure objective, we are required to disaggregate our revenue into categories if it will provide an enhanced understanding of how the nature, amount, timing, and uncertainty of our revenue and cash flows are affected by economic factors. To evaluate an appropriate level of disaggregation of revenue, we considered the following aspects of our business:

- We provide a single service to our customers.
- We only generate revenue in the U.S. onshore market.
- We have a homogeneous customer base, which is comprised of large oil and gas exploration companies.
- We provide our service over a short period of time.
- We do not disaggregate our revenue into categories for any external communications or to make resource allocation decisions.
- We do not have separate operating segments.

Based on the above factors, we concluded that no additional disaggregation of revenue was necessary or meaningful to help depict the nature, amount, timing and uncertainty of our revenues and cash flows.

Unconditional Purchase Obligations

We have historically entered into inventory supply arrangements with our vendors, primarily for sand, that contain unconditional purchase obligations. These represent obligations to transfer funds in the future for fixed or minimum quantities of goods or services at fixed or minimum prices. We enter into these unconditional purchase obligation arrangements in the normal course of business to ensure that adequate levels of sourced product are available to us. To account for these arrangements, we must monitor whether we may be required to make a minimum payment to a vendor in a future period because our projected inventory purchases may not satisfy our minimum commitments. If we conclude that it is probable that we will make a minimum payment under these arrangements, we will record an estimated loss for these commitments in the current period.

Stock-Based Compensation

We measure all employee stock-based compensation awards using a fair value method and record this cost in the consolidated financial statements. Our stock-based compensation relates to restricted stock units issued to our employees. On the date that an equity-classified award is granted, we determine the fair value of the award and recognize the compensation cost over the requisite service period, which typically is the period over which the award vests. For liability-classified awards, we determine the fair value of the award at each reporting date and recognize a portion of the fair value equal to the amount of time that has passed in the requisite service period. For equity-classified awards with graded vesting based solely on the satisfaction of a service condition, we recognize compensation cost as a single award on a straight-line basis. We account for forfeited awards as forfeitures occur, which results in a reversal of stock-based compensation cost previously recognized up to the date of the forfeiture. For stock-based awards with performance conditions that affect vesting, we only recognize compensation cost when it is probable that the performance conditions will be met.

Fair Value Measurements

Fair value is defined as the price that would be received from selling an asset or paid to transfer a liability in an orderly transaction between market participants at a measurement date. We apply the following fair value hierarchy, which prioritizes the inputs used to measure fair value into three levels and bases the categorization within the hierarchy upon the lowest level of input that is available and significant to the fair value measurement:

- Level One: The use of quoted prices in active markets for identical financial instruments.
- Level Two: The use of quoted prices for similar instruments in active markets or quoted prices for identical or similar instruments in markets that are not active or other inputs that are observable in the market or can be corroborated by observable market data.
- Level Three: The use of significant unobservable inputs that typically require the use of management's estimates of assumptions that market participants would use in pricing.

New Accounting Standards Updates

In May 2014, the Financial Accounting Standards Board ("FASB"), issued Accounting Standards Update ("ASU"), 2014-09, *Revenue from Contracts with Customers* . The FASB subsequently issued a number of additional ASUs to update this guidance. This guidance superseded substantially all existing accounting guidance related to the accounting for revenue transactions. This guidance establishes a core principle that an entity should record revenue when it transfers control of goods or services to customers at an amount that reflects the consideration to which it expects to be entitled in exchange for those goods or services. We adopted this standard on January 1, 2018. Our approach to adopting this standard included performing a review of key contracts and comparing historical accounting policies and practices to the new accounting guidance. The accounting for revenue under the new ASU is materially consistent with our previous revenue recognition process. These consolidated financial statements have been prepared in accordance with the new ASU utilizing the modified retrospective method, which did not require a cumulative effect of accounting change at January 1, 2018.

In February 2016, the FASB issued ASU 2016-02, *Leases* . The FASB subsequently issued a number of additional ASUs to update this guidance. This standard was issued to increase transparency and comparability among organizations by requiring that a right-of-use asset and corresponding lease liability be recorded on the balance sheet for leases with terms longer than 12 months. This standard is effective for our financial statements beginning on January 1, 2019. We transitioned to the new guidance using the modified retrospective transition method on the adoption date and we will recognize a cumulative-effect adjustment to our retained earnings for this accounting change on January 1, 2019. We plan to elect three practical expedients allowed under the guidance. According to these practical expedients we will not reassess whether existing contracts are or contain a lease; we will not reassess whether existing leases are operating or finance leases; and we will not reassess the accounting for initial direct costs for existing leases. We are in the process of determining the effects that the new standard will have on our consolidated financial statements. Our approach includes a review of existing leases and other executory contracts that may contain embedded leases and identifying the key terms that will be necessary for us to calculate the right-of-use asset and lease liability. We currently estimate that the adoption of this standard will increase our total assets and liabilities by approximately $40 million. These estimates could change before the completion of our adoption of this new guidance.

In August 2016, the FASB issued ASU 2016-15, *Classification of Certain Cash Receipts and Cash Payments* . This standard was issued to reduce the diversity in practice in how certain cash receipts and cash payments are presented and classified in the statement of cash flows. We adopted this standard on January 1, 2018, and it had no effect on our consolidated statements of cash flows.

In November 2016, the FASB issued ASU 2016-18, *Restricted Cash* . This standard was issued to change the presentation of amounts generally described as restricted cash and restricted cash equivalents to be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. We adopted this standard on January 1, 2018, and the effects of this standard and related required disclosures have been reflected in our condensed consolidated statements of cash flows. The following table provides a reconciliation of cash, cash equivalents, and restricted cash reported within the consolidated statements of cash flows:

(In millions)	December 31, 2017	December 31, 2016
Cash and cash equivalents	$ 208.1	$ 160.3
Restricted cash included in prepaid expenses and other current assets	9.1	9.1
Total cash, cash equivalents, and restricted cash shown in the consolidated statements of cash flows	$ 217.2	$ 169.4

As of December 31, 2017 and 2016, we had amounts included in restricted cash that represented amounts required to be set aside by contractual agreement with our casualty and general liability insurance provider and corporate credit card provider. In February 2018, these contractual agreements to set aside cash were terminated. Therefore, as of December 31, 2018, we had no restricted cash balance.

As a result of our adoption of ASU 2016-18, we recasted certain balances in our consolidated statement of cash flows for 2017 and 2016. The following table reflects the recasted balances:

(In millions)	Year Ended December 31, 2017		
	As Reported	Adjustments	Recasted
Net cash used in investing activities	$ (54.6)	$ —	$ (54.6)
Cash, cash equivalents, and restricted cash at beginning of period	$ 160.3	$ 9.1	$ 169.4
Cash, cash equivalents, and restricted cash at end of period	$ 208.1	$ 9.1	$ 217.2

(In millions)	Year Ended December 31, 2016		
	As Reported	Adjustments	Recasted
Net cash provided by investing activities	$ 43.1	$ (2.9)	$ 40.2
Cash, cash equivalents, and restricted cash at beginning of period	$ 264.6	$ 12.0	$ 276.6
Cash, cash equivalents, and restricted cash at end of period	$ 160.3	$ 9.1	$ 169.4

NOTE 3 — SUPPLEMENTAL BALANCE SHEET INFORMATION

Accounts Receivable

The following table summarizes our accounts receivable balance:

(In millions)	December 31, 2018	December 31, 2017
Trade accounts receivable	$ 159.2	$ 233.2
Allowance for doubtful accounts	(0.9)	(2.1)
Accounts receivable, net	$ 158.3	$ 231.1

The change in allowance for doubtful accounts is as follows:

(In millions)	2018	2017	2016
Balance at beginning of year	$ 2.1	$ 2.3	$ 1.7
Provision for bad debts, net included in selling, general, and administrative expense	—	0.3	1.3
Uncollectible receivables written off	(1.2)	(0.5)	(0.7)
Balance at end of year	$ 0.9	$ 2.1	$ 2.3

Inventories

The following table summarizes our inventories:

(In millions)	December 31, 2018	2017
Maintenance parts	$ 60.3	$ 34.5
Proppants and chemicals	4.3	7.5
Other	2.0	2.5
Total inventories	$ 66.6	$ 44.5

Prepaid Expenses and Other Current Assets

The following table summarizes our prepaid expenses and other current assets:

(In millions)	December 31, 2018	2017
Restricted cash	$ —	$ 9.1
Prepaid expenses	5.8	7.1
Other	1.2	3.7
Total prepaid expenses and other current assets	$ 7.0	$ 19.9

Property, Plant, and Equipment, net

The following table summarizes our property, plant, and equipment:

(Dollars in millions)	December 31, 2018	2017	Estimated Useful Life (in years)
Service equipment	$ 780.5	$ 745.1	2.5 – 10
Buildings and improvements	63.1	63.1	15 – 39
Office, software, and other equipment	44.7	43.7	3 – 7
Vehicles and transportation equipment	9.2	13.6	5 – 20
Land	7.7	7.7	N/A
Construction-in-process and other	32.4	35.3	N/A
Total property, plant, and equipment	937.6	908.5	
Accumulated depreciation and amortization	(662.3)	(637.6)	
Total property, plant, and equipment, net	$ 275.3	$ 270.9	

Depreciation expense was $84.7 million, $86.6 million and $112.6 million in 2018, 2017 and 2016, respectively.

Accrued Expenses and Other Current Liabilities

The following table summarizes our accrued liabilities:

(In millions)	December 31, 2018	2017
Sales, use, and property taxes	$ 12.5	$ 19.3
Employee compensation and benefits	6.1	13.6
Interest	4.3	5.7
Insurance	4.3	3.3
Other	4.1	2.5
Total accrued expenses and other current liabilities	$ 31.3	$ 44.4

NOTE 4 — INDEBTEDNESS AND BORROWING FACILITY

The following table summarizes our long-term debt:

(In millions)	December 31, 2018	December 31, 2017
Senior floating rate notes due June 2020	$ —	$ 290.0
Term loan due April 2021	121.0	431.0
Senior notes due May 2022	386.9	409.0
Total principal amount	507.9	1,130.0
Less unamortized discount and debt issuance costs	(4.7)	(13.6)
Total long-term debt	$ 503.2	$ 1,116.4
Estimated fair value of long-term debt	$ 461.2	$ 1,113.8

Estimated fair values for our term loan and senior notes were determined using recent trading activity and/or bid-ask spreads and are classified as Level 2 in the FASB's fair value hierarchy.

2020 Senior Floating Rate Notes

On June 1, 2015, we completed an offering of $350 million of senior secured floating rate notes due June 15, 2020, in a private offering to qualified institutional buyers ("2020 Senior Notes"). The 2020 Senior Notes bore interest at a three-month London Interbank Offered Rate ("LIBOR") plus a margin of 7.5% per annum. Interest was payable quarterly, in arrears, on March 15, June 15, September 15 and December 15.

The 2020 Senior Notes were issued at a discount of $3.5 million for aggregate consideration of $346.5 million and resulted in net proceeds to the Company of $340.5 million after debt issuance costs of $6.0 million.

The obligation to pay principal and interest on the 2020 Senior Notes was jointly and severally guaranteed on a full and unconditional basis by all of our wholly owned domestic subsidiaries. The 2020 Senior Notes were secured on a first priority basis by our accounts receivable, inventory, deposit accounts, and certain hydraulic fracturing and other equipment. The 2020 Senior Notes were secured on a second priority basis by 100% of the equity interests of our existing and future domestic subsidiaries and 65% of the voting equity interests of our existing and future foreign subsidiaries.

The 2020 Senior Notes were redeemable, at our option, beginning on June 15, 2016, at a premium of 3%. The redemption premium then declined each year until June 15, 2018, at which time we could redeem the notes at par value.

The 2020 Senior Notes contained covenants that could, in certain circumstances, limit our ability to issue additional debt, repurchase or pay dividends on our common or preferred stock, sell substantially all of our assets, make certain investments, or enter into certain other transactions.

In 2018, we repaid all $290.0 million of the remaining principal amount of 2020 Senior Notes. We recognized a loss on debt extinguishment of $8.3 million. In 2017, we repaid $60.0 million of aggregate principal amount of 2020 Senior Notes. We recognized a loss on debt extinguishment of $1.8 million.

We were in compliance with all of the covenants in the indenture governing our 2020 Senior Notes for all periods that these notes were outstanding.

2022 Senior Notes

On April 16, 2014, we completed an offering of $500 million of 6.25% senior secured notes due May 1, 2022, in a private offering to qualified institutional buyers ("2022 Senior Notes"). Interest is payable semiannually, in arrears, on May 1 and November 1. The Company received net proceeds of $489.7 million after debt issuance costs of $10.3 million, which resulted in an effective interest rate of 6.58% for these notes.

The obligation to pay principal and interest on the 2022 Senior Notes is jointly and severally guaranteed on a full and unconditional basis by all of our wholly owned domestic subsidiaries. The 2022 Senior Notes are secured on a first priority basis by 100% of the equity interests of our existing and future domestic subsidiaries and 65% of the voting equity interests of our existing and future foreign subsidiaries. The 2022 Senior Notes are secured on a second priority basis by our accounts receivable, inventory, and deposit accounts, which also secure our 2020 Senior Notes as discussed above. All security requirements for the 2022 Senior Notes will cease upon the full repayment of our $550 million term loan discussed below.

The 2022 Senior Notes are redeemable, at our option, beginning on May 1, 2017, at a premium of approximately 4.7%. The redemption premium then declines each year until May 1, 2020, at which time we may redeem the notes at par value.

The 2022 Senior Notes contain covenants that could, in certain circumstances, limit our ability to issue additional debt, repurchase or pay dividends on our common or preferred stock, sell substantially all of our assets, make certain investments, or enter into certain other transactions.

In 2018, we repurchased $22.1 million of aggregate principal amount of 2022 Senior Notes in the qualified institutional market. We recognized a gain on debt extinguishment of $1.2 million. In 2017, we repurchased $17.3 million of aggregate principal amount of 2022 Senior Notes in the qualified institutional market. We recognized a gain on debt extinguishment of $0.4 million. In 2016, we repurchased $43.7 million of aggregate principal amount of 2022 Senior Notes in the qualified institutional market. We recognized a gain on debt extinguishment of $25.4 million.

We were in compliance with all of the covenants in the indenture governing our 2022 Senior Notes at December 31, 2018 and 2017.

Term Loan

On April 16, 2014, we entered into a $550 million term loan, which matures on April 16, 2021, ("Term Loan") with a group of lenders with Wells Fargo Bank, N.A., as administrative agent. The Term Loan bears interest at LIBOR plus a margin of 4.75% per annum, with a 1.00% LIBOR floor. Interest is payable on interest rate reset dates, which generally will be on a three-month basis.

The Term Loan was issued at a discount of $2.7 million for aggregate consideration of $547.3 million and resulted in net proceeds to the Company of $540.0 million after debt issuance costs of $7.3 million. The effective interest rate of the Term Loan was 7.6% at December 31, 2018.

The obligation to pay principal and interest on the Term Loan is jointly and severally guaranteed on a full and unconditional basis by all of our wholly owned domestic subsidiaries. The Term Loan is secured on the same basis as the 2022 Senior Notes as discussed above.

The Term Loan contains substantially the same covenants as the 2022 Senior Notes and the 2020 Senior Notes. None of the Term Loan, the 2022 Senior Notes, or the 2020 Senior Notes contain maintenance financial covenants.

In 2018, we repaid $310.0 million of aggregate principal amount of Term Loan. We recognized a loss on debt extinguishment of $2.7 million. In 2016, we repaid $49.0 million of aggregate principal amount of Term Loan. We recognized a gain on debt extinguishment of $28.3 million.

We were in compliance with all of the covenants in the Term Loan at December 31, 2018 and 2017.

Revolving Credit Facility

On February 22, 2018, we entered into a $250 million revolving credit facility, with an initial maturity date of February 22, 2023, with a group of lenders with Wells Fargo, N.A., as administrative agent. The maturity date of the facility could be accelerated to January 16, 2021 or January 31, 2022, if we do not repay or refinance our Term Loan or 2022 Senior Notes, respectively, before these dates.

LIBOR borrowings under the credit facility bear interest at LIBOR plus a margin of 1.75% to 2.00% per annum, depending on facility utilization. Base rate loans are also available at our option. The credit facility includes a $50 million sub-limit for the issuance of letters of credit. The issuance of letters of credit reduces the amount available under the facility. We also pay a commitment fee on the unused amount of the facility of 0.25% to 0.375% per annum, depending on facility utilization.

The obligations under the credit facility are secured by substantially all of our accounts receivable, inventory, deposit accounts, intellectual property and the equity of some current and future wholly-owned domestic and foreign subsidiaries.

The maximum availability of credit under the credit facility is limited at any time to the lesser of $250 million or a borrowing base. The borrowing base is based on percentages of eligible accounts receivable and eligible inventory and is subject to certain reserves. In an event of default or if the amount available under the credit facility is less than either 10% of our maximum availability or $12.5 million, we will be required to maintain a minimum fixed charge coverage ratio of 1.0 to 1.0. If at any time borrowings and letters of credit issued under the credit facility exceed the borrowing base, we will be required to repay an amount equal to such excess.

The credit facility contains covenants that could, in certain circumstances, limit our ability to issue additional debt, repurchase or pay dividends on our common stock, sell substantially all of our assets, make certain investments, or enter into certain other transactions. We were in compliance with all of the covenants in the credit facility at December 31, 2018.

As of February 28, 2019, the borrowing base was $113.2 million and therefore our maximum availability under the credit facility was $113.2 million. As of February 28, 2019, there were no borrowings outstanding under the credit facility, and letters of credit totaling $7.1 million were issued, resulting in $106.1 million of availability under the credit facility.

The following table summarizes the maturities of our long-term debt at December 31, 2018:

(In millions)	
2019	$ —
2020	—
2021	121.0
2022	386.9
2023	—
2024 and thereafter	—
Total principal amount of long-term debt	$ 507.9

NOTE 5 — STOCKHOLDERS' EQUITY (DEFICIT)

Initial Public Offering of Common Stock

We completed an initial public offering ("IPO") of 22.4 million shares of common stock at a price to the public of $18.00 per share, of which 18.1 million shares were sold by the Company and 4.3 million shares were sold by one of our stockholders, a subsidiary of Chesapeake Energy Corporation. The shares began trading on The New York Stock Exchange on February 2, 2018, under the ticker symbol "FTSI." The Company received net proceeds from the offering of $303.0 million, after offering costs. We used the net proceeds from the offering for general corporate purposes, primarily debt repayments. The Company did not receive any proceeds from the offering of shares by the selling stockholder.

Reverse Stock Split

In connection with the IPO, we amended and restated our certificate of incorporation to effect a 69.258777:1 reverse stock split of our common stock.

Convertible Preferred Stock

In September 2012, we issued and sold 350,000 shares of Series A convertible preferred stock, par value $0.01 per share (the “Preferred Stock”), to certain of our then existing common stockholders. The Preferred Stock was sold for aggregate consideration of $350 million, and resulted in net proceeds to the Company of $349.8 million after the payment of $0.2 million in issuance costs.

Each share of Preferred Stock was convertible into 2,573 shares of our common stock, subject to adjustment upon the occurrence of specified events set forth under terms of the Preferred Stock.

The Preferred Stock was redeemable at the Company’s option at any time after all of our debt was repaid. The redemption price per share was an amount in cash equal to the original price per share of the Preferred Stock, plus such additional amount as would give the holder an after-tax internal rate of return for investment in the Preferred Stock of 25% per annum (the “Accreted Amount”). At December 31, 2017, the Accreted Amount of the Preferred Stock was estimated to be $1,132.7 million.

The Preferred Stock was mandatorily convertible into shares of our common stock in connection with an initial public offering of our common stock if both of the following conditions were met (a “Qualified IPO”):

- Aggregate proceeds to the Company were at least $250 million ; and
- The split-adjusted initial offering price to the public was not less than $1.50 per share.

In connection with a Qualified IPO, each share of Preferred Stock would be convertible into the number of shares of common stock that had a market value (based on the initial offering price to the public) equal to the Accreted Amount.

The Preferred Stock was mandatorily redeemable for cash upon a change of control, provided that all of our debt had been repaid. Each share of Preferred Stock would be redeemed for an amount in cash equal to the higher of:

- The Accreted Amount; or
- The original purchase price of the Preferred Stock plus an amount equal to 20% of the then outstanding equity value of the Company divided by the number of Preferred Stock shares then outstanding.

The Preferred Stock ranked senior to our common stock with respect to dividend rights and distribution rights in the event of any liquidation, winding-up or dissolution of the Company. The amount that each share of Preferred Stock was entitled to in liquidation is equal to the Accreted Amount.

The holders of the Preferred Stock were also common stockholders of the Company and, prior to the completion of our initial public offering, collectively appointed 100% of our board of directors. Therefore, the Preferred Stock holders could have directed the Company to redeem the Preferred Stock at any time after all of our debt had been repaid; however, we did not consider this to be probable for the periods presented due to the amount of debt outstanding. Therefore, we classified the Preferred Stock as temporary equity on our Consolidated Balance Sheets but did not record any accretion of the Preferred Stock in our consolidated financial statements.

In connection with the IPO, a number of shares of our convertible Preferred Stock converted into common stock at the rate of 155.944841 shares of common stock per each share of Preferred Stock. All remaining shares of Preferred Stock were canceled. We refer to this conversion and the cancelation together as the recapitalization of the

Preferred Stock. The conversion rate of the Preferred Stock and shares canceled were calculated so that following the recapitalization, stockholders that did not own Preferred Stock would own 7% of our common stock prior to the IPO. The recapitalization of all outstanding shares of our Preferred Stock resulted in 39.4 million new shares of common stock.

NOTE 6 — STOCK-BASED COMPENSATION

2014 Long-Term Incentive Plan

In 2014, our stockholders approved the 2014 Long-Term Incentive Plan (“2014 LTIP”). The 2014 LTIP authorized the grant of up to 55 million restricted stock units (“RSU”) to salaried employees of the Company, as determined by the compensation committee of the board of directors. This plan originally was set to expire on March 3, 2024. The 2014 LTIP allowed for the grant of stock-settled and cash-settled RSUs. The Company had the power to elect, at its sole discretion, to settle any or all of the stock-settled RSUs wholly or partly in cash.

The awards that were granted in 2014 had three vesting conditions: a performance condition based on Company goals, a performance condition based on the occurrence of a qualifying liquidity event such as an initial public offering of our common stock, and a service-period condition. The performance condition was based on Company goals that provided for an upward or downward adjustment to the RSUs granted based on Company performance. The service-period condition provided that 50% of the number of adjusted RSUs vested on each of December 31, 2015, and December 31, 2016.

Under generally accepted accounting principles for stock-based compensation, a performance condition that affects vesting and is based on a corporate liquidity event such as an initial public offering of common stock precludes the recognition of compensation expense related to the awards until this performance condition has been met. Therefore, no compensation expense for these awards was recognized until this performance condition was met.

In February 2018, we completed an IPO of our common stock. This transaction qualified as the final vesting condition for these RSUs. The compensation expense recognized in 2018 for the stock-settled RSUs was $2.0 million. The compensation expense recognized in 2018 for the cash-settled RSUs was $1.7 million. The Company elected to settle the stock-settled RSUs in cash. The 2014 LTIP was terminated after the payout of the RSUs.

2018 Equity and Incentive Compensation Plan

Our board of directors and stockholders adopted the 2018 Equity and Incentive Compensation Plan (“2018 Plan”) to attract and retain officers, employees, directors, consultants and other key personnel and to provide those persons incentives and awards for performance. The 2018 Plan allocated 2.8 million shares of common stock in the form of incentive stock options, non-qualified stock options, restricted stock, restricted stock units, stock appreciation rights, or other stock-based awards. Any shares that become available as a result of forfeiture, cancelation, expiration or cash settlement of an award are allowed to be granted again at a future date under the 2018 Plan. RSUs are valued at the market price of a share of our common stock on the date of grant. All awards granted to employees vest in 25% increments over a four-year period from the date of grant and are expensed on a straight-line basis over that period, which is considered to be the requisite service period.

The following table summarizes the 2018 transactions related to the RSUs granted under the 2018 Plan.

	Number of Units (In thousands)	Weighted-Average Grant-Date Fair Value
Unvested balance at January 1, 2018	—	$ —
Granted	3,000	19.67
Vested	(250)	19.90
Forfeited	(310)	19.90
Unvested balance at December 31, 2018	2,440	$ 19.62

The compensation committee of our board of directors granted 3.0 million restricted stock units ("RSUs") to employees and a non-employee director in 2018. Some RSUs were forfeited during the year and subsequently granted again to other employees. As of December 31, 2018, 2.4 million unvested RSUs were outstanding under this plan, and up to approximately 131,000 shares were available for future grants under this plan.

Stock-based compensation expense for these RSUs was $15.2 million 2018. The weighted-average grant-date fair value per share of RSUs granted was $19.67 in 2018. The grant-date fair value of these RSUs was based on the price of our common stock on the date of grant. The fair value of RSUs vested was $5.0 million in 2018. At December 31, 2018, there was $37.6 million of total unrecognized compensation cost related to unvested RSUs, which is expected to be recognized over a weighted average period of 3.2 years.

The compensation cost charged against income for all stock-based compensation was $18.9 million, zero and zero in 2018, 2017 and 2016, respectively. The total income tax benefit for all stock-based compensation was $3.8 million in 2018; however, such benefit was substantially offset by the valuation allowance against our deferred tax assets.

NOTE 7 — RETIREMENT PLAN

We offer a 401(k) defined contribution retirement plan ("401(k) Plan"), which allows a participant to defer, by payroll deductions, from 0% to 100% of the participant's annual compensation, limited to certain annual maximums set by the Internal Revenue Code. The 401(k) Plan has historically provided a discretionary matching contribution to each participant's account. Company matching contributions to the 401(k) Plan are made in cash and were $4.1 million, $1.5 million, and zero in 2018, 2017 and 2016, respectively. The Company suspended matching contributions in July 2015 and resumed making contributions in July 2017.

NOTE 8 — IMPAIRMENTS AND OTHER CHARGES

The following table summarizes our impairments and other charges:

	Year Ended December 31,		
(In millions)	**2018**	**2017**	**2016**
Supply commitment charges	$ 19.2	$ 1.2	$ 2.5
Impairment of assets	—	—	7.0
Lease abandonment charges	—	0.6	2.0
Employee severance costs	—	—	0.8
Total impairments and other charges	$ 19.2	$ 1.8	$ 12.3

Supply Commitment Charges

We incur supply commitment charges when our purchases of proppant from certain suppliers are less than the minimum purchase commitments in our supply contracts. According to the accounting guidance for firm purchase commitments, future charges that are considered likely are also required to be recorded in the current period.

We recorded aggregate charges under these supply contracts of $19.2 million, $1.2 million and $2.5 million in 2018, 2017 and 2016, respectively. These charges related to actual purchase shortfalls incurred, as well as forecasted purchase shortfalls that are expected to be incurred and settled in future periods. Approximately $12 million of our 2018 supply commitment charges relate to estimated losses under these contracts for 2019. These purchase shortfalls are due to our customers choosing to provide their own proppant, our customers' desire to purchase sand from sand mines closer to their operating areas, increased purchase commitments in 2019, and low activity levels in 2016.

A significant majority of our contracted proppant is for sand types that are mined primarily in the Midwestern United States ("Northern White" sand). Since we executed these contracts, customer demand for sand has shifted away from Northern White sand and towards lower-cost sand that is available from sand mines closer in proximity to our customers' operating locations. We are in discussions with our vendors to modify our supply contracts to better align with our customers' volume requirements, preferred sand types, and preferred sand mine locations.

Estimated losses related to these supply contracts contain uncertainties, such as future customer demand, future customer sand preferences, the legal defenses available to us, and the outcome of our ongoing vendor discussions. These uncertainties require us to use judgment to quantify the amount of these estimates. Actual results could materially differ from our estimate.

While we have successfully worked with our vendors to minimize charges related to these purchase commitments in the past, if we do not meet the minimum purchase commitments in the future and we are unable to adjust or avoid our contracted amounts, we may incur additional supply commitment charges in future periods.

Impairment of Assets

During 2016, we recorded asset impairments of $7.0 million related to service equipment and real property that we no longer use and identified to sell.

Lease Abandonment Charges

During 2016, we vacated certain leased facilities to consolidate our operations. In 2017 and 2016, we recognized expense of $0.6 million and $2.0 million, respectively, in connection with these actions.

Employee Severance Costs

During 2016, we incurred employee severance costs of $0.8 million in connection with our corporate and operating restructuring initiatives. At December 31, 2016, we had paid substantially all severance payments owed to former employees.

NOTE 9 — ASSET DISPOSALS

During 2017 and 2016, we sold a number of surplus pieces of property and equipment. In 2017, we received $4.1 million of proceeds and recognized a $1.4 million net gain on the sale of these assets. In 2016, we received $23.5 million of proceeds and recognized a $1.3 million net loss on the sale of these assets. In February 2016, we sold substantially all of our remaining sand transportation equipment and related inventory. We received $8.0 million of proceeds and recognized a $0.3 million gain on this sale.

NOTE 10 — GAIN ON INSURANCE RECOVERIES

In January 2017, a fire destroyed certain equipment in one of our fleets. These assets were insured at values greater than their carrying values. We received $4.2 million of insurance recovery proceeds for these assets, which exceeded their carrying values by $2.9 million.

In January 2016, a fire at one of our job sites in Oklahoma destroyed substantially all of the equipment in one of our fleets. These assets were insured at values greater than their carrying values. We received $19.0 million of insurance recovery proceeds for these assets, which exceeded their carrying values by $15.1 million.

NOTE 11 — INCOME TAXES

The following table summarizes the components of income tax expense (benefit):

(In millions)	Year Ended December 31, 2018	2017	2016
Current:			
Federal	$ —	$ —	$ —
State	2.0	1.6	(1.6)
Total current	2.0	1.6	(1.6)
Total deferred	—	—	—
Income tax expense (benefit)	$ 2.0	$ 1.6	$ (1.6)

Actual income tax expense (benefit) differed from the amount computed by applying the statutory federal income tax rate to income (loss) before income taxes as follows:

(In millions)	Year Ended December 31, 2018	2017	2016
Income (loss) before income taxes	$ 260.4	$ 202.3	$ (190.1)
Statutory federal income tax rate	21.0 %	35.0 %	35.0 %
Federal income tax expense (benefit) at statutory rate	54.7	70.8	(66.5)
State income tax expense (benefit), net of federal effect	5.5	7.2	(6.7)
Effect of changes in income apportionment amongst states	6.1	8.2	—
Effect of U.S. tax law change	—	424.8	—
Other items, net	0.2	1.7	0.1
Change in valuation allowance	(64.5)	(511.1)	71.5
Income tax expense (benefit)	$ 2.0	$ 1.6	$ (1.6)
Effective tax rate	0.8 %	0.8 %	0.8 %

Due to the mobile nature of our operations, the apportionment of annual income that we earn in a state can change over time. States have different income tax rates and therefore the weighted-average state tax rate that we apply to our taxable and deductible temporary differences and net operating loss carryforwards can also change over time. The resulting effects on our deferred tax assets and deferred tax liabilities are recognized in the current period and affects our overall effective tax rate; however, these changes are offset by corresponding changes in our valuation allowance.

In December 2017, the President of the United States signed into law H.R. 1, or commonly referred to as the Tax Cuts and Jobs Act of 2017 that, among other things, reduced the federal income tax rate from 35% to 21% beginning on January 1, 2018. Under generally accepted accounting principles for income taxes, we are required to recognize the effects of changes in tax laws and tax rates on deferred tax assets and liabilities in the period in which the new legislation is enacted. Accordingly, we remeasured our federal deferred tax assets as of December 31, 2017, to a 21% rate. This would have resulted in additional tax expense of $424.8 million in 2017; however, this amount was offset by a corresponding change in our valuation allowance.

The tax effects of temporary differences that give rise to significant portions of the deferred tax assets and deferred tax liabilities are presented below:

	December 31,	
(In millions)	**2018**	**2017**
Deferred tax assets:		
Goodwill and intangible assets	$ 313.0	$ 365.3
Federal net operating loss carryforwards	319.4	338.0
State net operating loss carryforwards, net of federal benefit	41.0	39.7
Accrued liabilities	5.7	4.5
Stock-based compensation	2.4	—
Other	1.8	2.3
Gross deferred tax assets	683.3	749.8
Valuation allowance	(671.0)	(735.5)
Total deferred tax assets	12.3	14.3
Deferred tax liabilities:		
Property, plant, and equipment	12.3	14.3
Total deferred tax liabilities	12.3	14.3
Net deferred tax asset	$ —	$ —

Because of our valuation allowance, our net deferred tax assets are zero and no deferred tax assets or liabilities are included in the Consolidated Balance Sheets.

At December 31, 2018, our federal net operating loss carryforwards were $1,520.0 million, which will expire on various dates between 2032 and 2036. Our state net operating loss carryforwards will expire on various dates between 2019 and 2037.

A reconciliation of the valuation allowance for deferred tax assets from January 1, 2016 to December 31, 2018 is as follows:

(In millions)	**2018**	**2017**	**2016**
Balance at January 1	$ 735.5	$ 1,246.6	$ 1,175.1
Additions	—	—	71.5
Deductions	(64.5)	(511.1)	—
Balance at December 31	$ 671.0	$ 735.5	$ 1,246.6

In 2012, we established a full valuation allowance with respect to our net deferred tax assets. We have recorded a full valuation allowance for these net deferred tax assets for each year since 2012. As a result, we only recorded income tax expense for states that limit the deduction of net operating loss carryforwards. Deferred tax assets related to our U.S. federal and state tax net operating losses are still available to us to offset future taxable income, subject to limitations in the event of a change of control under Section 382 of the Internal Revenue Code. At December 31, 2018, we had not incurred such an ownership change.

At each reporting date, we consider all available positive and negative evidence to evaluate whether our deferred tax assets are more likely than not to be realized. A significant piece of negative evidence that we consider is whether we have incurred cumulative losses (generally defined as losses before income taxes) in recent years. Such negative evidence weighs heavily against other more subjective positive evidence such as our projections for future taxable income. We noted that for the three years ended December 31, 2018, we recorded cumulative income before income taxes of $272.6 million. This is the first three-year period with cumulative income since we established the full valuation allowance in 2012. Notwithstanding the shift to three-year cumulative income, we concluded that a full valuation allowance was still required at December 31, 2018. We based this conclusion on the positive and negative evidence discussed below.

The primary positive evidence we noted was:

- Our income before income taxes in 2018 and 2017 was $260.4 million and $202.3 million.
- We are forecasting that 2019 will be a profitable year.

The primary negative evidence we noted was:

- The cumulative income before income taxes for the three-year period ended December 31, 2018, was the only profitable three-year period since 2012.
- The forecasts of our results and the consensus forecasts of the hydraulic fracturing industry have been historically volatile due to the up-and-down cycles experienced by the industry.
- We have over $1.3 billion of deductible temporary differences that will reverse over the next seven years. These deductions will significantly limit the amount of net operating loss carryforwards that we will be able to realize over that time. These deductions also increase the likelihood that we could generate additional net operating losses in future periods.
- The price of oil declined significantly in the fourth quarter of 2018. A significant decrease in the price of oil has historically resulted in a decrease in our customers' activity levels and a corresponding decrease in our earnings.
- We do not have prudent and feasible tax-planning strategies available to us to realize deferred tax assets.

If we continue to generate income before income taxes in future periods and if our forecasts become more accurate due to the cycles of the hydraulic fracturing industry becoming less significant, we may be able to recognize a portion of our net deferred tax assets in future periods. We will adjust the valuation allowance based on our evaluation of new information as it becomes available and new circumstances as they occur. Due to the prevailing negative evidence cited above, we believe that the earliest period when we may adjust the valuation allowance is the fourth quarter of 2019.

A reconciliation of the liability for gross unrecognized income tax benefits (excluding interest) from January 1, 2016 to December 31, 2018 is as follows:

(In millions)	2018	2017	2016
Balance at January 1	$ —	$ —	$ 1.4
Lapse in applicable statute of limitations	—	—	(1.4)
Balance at December 31,	$ —	$ —	$ —

The amount of unrecognized tax benefits that, if recognized, would affect the effective tax rate was zero at December 31, 2018 and 2017, respectively.

We recognize accrued interest and penalties related to any uncertain tax positions as part of the tax provision. At December 31, 2018 and 2017, we had no accrued interest expense associated with unrecognized tax benefits. Interest expense associated with unrecognized tax benefits was zero for all periods presented.

FTS International, Inc. and its U.S. subsidiaries join in the filing of a U.S. federal consolidated income tax return. We do not currently have significant operations or undistributed earnings in foreign jurisdictions. Our income tax returns are currently subject to examination in federal and state jurisdictions primarily for tax years from 2014 through 2017.

NOTE 12 — COMMITMENTS AND CONTINGENCIES

Operating Leases

We lease certain administrative and sales offices, operational facilities and office equipment in various cities. We also lease some service equipment, light duty vehicles, and equipment used to transport sand and other proppants to our job locations. Some of our lease agreements include renewal or purchase options that we may choose to exercise at the end of the lease term. Total rental expense under our operating leases was $49.9 million, $26.8 million and $19.6 million in 2018, 2017 and 2016, respectively.

At December 31, 2018, our future minimum rental commitments due under non-cancellable operating leases is summarized below:

(In millions)	2019	2020	2021	2022	2023	Thereafter
Operating leases	$ 26.0	$ 14.9	$ 4.6	$ 1.5	$ 1.5	$ 1.1

Purchase Obligations

We have purchase commitments with certain vendors to supply a significant portion of the proppant used in our operations. These agreements have remaining terms ranging from one to six years. Some of these agreements have minimum unconditional purchase obligations. These minimum purchase obligations could change based upon the vendors ability to supply a minimum requirement. Total purchases made under these agreements were $33.8 million, $38.8 million and $20.9 million in 2018, 2017 and 2016, respectively. At December 31, 2018, our future minimum purchase commitments due under these agreements is summarized below:

(In millions)	2019	2020	2021	2022	2023	Thereafter
Purchase obligations	$ 56.5	$ 51.6	$ 48.3	$ 47.9	$ 47.9	$ 47.9

Litigation

In the ordinary course of business, we are subject to various legal proceedings and claims, some of which may not be covered by insurance. Many of these legal proceedings and claims are in early stages, and many of them seek an indeterminate amount of damages. We estimate and provide for potential losses that may arise out of legal proceedings and claims to the extent that such losses are probable and can be reasonably estimated. Significant judgment is required in making these estimates and our final liabilities may ultimately be materially different from these estimates. When preparing our estimates, we consider, among other factors, the progress of each legal proceeding and claim, our experience and the experience of others in similar legal proceedings and claims, and the opinions and views of legal counsel. Legal costs related to litigation contingencies are expensed as incurred.

With respect to the litigation matters below, if there is an adverse outcome individually or collectively, there could be a material adverse effect on the Company’s consolidated financial position or results of operations. These litigation matters are subject to inherent uncertainties and management’s view of these matters may change in the future. Therefore, there can be no assurance as to the ultimate outcome of these matters. Regardless of the outcome, any such litigation and claims can have an adverse impact on the Company because of defense and settlement costs, diversion of management resources and other factors.

Patterson v. FTS International Manufacturing, LLC and FTS International Services, LLC : On June 24, 2015, Joshua Patterson filed a lawsuit against the Company in the 115 th Judicial District Court of Upshur County, Texas, alleging, among other things, that the Company was negligent with respect to an automobile accident in 2013. Mr. Patterson sought monetary relief of more than $1 million. On July 19, 2018, a jury returned a verdict of approximately $100 million, including punitive damages, against the Company. The trial court reduced the judgment on November 12, 2018 to approximately $33 million. The Company’s insurance carriers have been defending the suit and are appealing the final judgment. While the outcome of this case is uncertain, the Company has met its insurance deductible for this matter and we do not expect the ultimate resolution of this case to have a material adverse effect on our consolidated financial statements.

Securities Act Litigation : On February 22, 2019, Carol Glock filed a purported securities class action in the 160th Civil District Court of Dallas County, Texas (Cause No. DC-19-02668) against the Company, certain of our officers, directors and stockholders, and certain of the underwriters of our IPO. The complaint is brought on behalf of an alleged class of persons or entities who purchased our common stock in or traceable to our IPO, and purports to allege claims arising under Sections 11 and 15 of the Securities Act of 1933, as amended. The complaint generally alleges that the defendants violated federal securities laws relating to the disclosure in the registration statement and prospectus filed with the Securities and Exchange Commission in connection with our IPO. The complaint seeks, among other relief, class certification, damages in an amount in excess of $1.0 million, and reasonable costs and expenses, including attorneys' fees. We are in the preliminary stages of reviewing the allegations made in the complaint and, as a result, we cannot predict the outcome or consequences of this case, which we intend to vigorously defend.

We believe that costs associated with other legal matters will not have a material adverse effect on our consolidated financial statements.

NOTE 13 — NONRECURRING FAIR VALUE MEASUREMENTS

The following table represents the placement in the fair value hierarchy of assets that were measured at fair value on a nonrecurring basis. See Note 8 — "Impairments and Other Charges" for further discussion.

	Previous Carrying Values (1)	Total Fair Value (1)	Fair value measurements using		
			Level 1	Level 2	Level 3
During 2016					
Property no longer used	$ 1.0	$ —	$ —	$ —	$ —
Long-lived assets held for sale (2)	12.4	6.4	—	—	6.4
	$ 13.4	$ 6.4	$ —	$ —	$ 6.4

(1) Represents the value on the date of the fair value measurement.
(2) Equipment value based on pending contract price.

NOTE 14 — EARNINGS (LOSS) PER SHARE

The numerators and denominators of the basic and diluted earnings (loss) per share ("EPS") computations for our common stock are calculated as follows:

(In millions, except per share amounts)	Year Ended December 31, 2018	2017	2016
Numerator:			
Net income (loss)	$ 258.4	$ 200.7	$ (188.5)
Convertible preferred stock accretion	—	(226.6)	(181.6)
Net reversal of convertible preferred stock accretion due to recapitalization of convertible preferred stock to common stock (2)	423.2	—	—
Net income (loss) attributable to common stockholders used for basic EPS computation	681.6	(25.9)	(370.1)
Add back the effect of dilutive securities:			
Convertible preferred stock accretion (3)	—	—	—
Net income (loss) attributable to common stockholders used for diluted EPS computation	$ 681.6	$ (25.9)	$ (370.1)
Denominator:			
Weighted average shares used for basic EPS computation (1)	104.2	51.8	51.8
Effect of dilutive securities:			
Convertible preferred stock (3)	—	—	—
Restricted stock units (4) (5)	—	—	—
Dilutive potential common shares	—	—	—
Number of shares used for diluted EPS computation	104.2	51.8	51.8
Basic and diluted EPS	$ 6.54	$ (0.50)	$ (7.14)

(1) The weighted average shares outstanding has been adjusted to give effect to a 69.258777 : 1 reverse stock split that occurred in February 2018 in connection with the completion of our IPO.

(2) The accreted value of our Preferred Stock was $1,132.7 million at December 31, 2017. In connection with our IPO, the Preferred Stock was recapitalized into 39.4 million shares of common stock. These shares of common stock had a value of $709.5 million at the IPO share price of $18.00, which resulted in a net reversal of $423.2 million of convertible preferred stock accretion previously recognized.

(3) Dilutive securities in our diluted EPS calculation do not include the effects of converting the convertible preferred stock because the effect would be antidilutive. The number of common stock equivalents attributable to convertible preferred stock was 13.0 million shares as of December 31, 2017 and 2016.

(4) Dilutive securities in our diluted EPS calculation do not include RSUs granted under our 2014 LTIP. Vesting of these RSUs was dependent upon the satisfaction of both a service condition and a corporate liquidity event such as an initial public offering of our common stock. As of December 31, 2017 and 2016, a corporate liquidity event had not occurred and the holders of these RSUs had no rights to our undistributed earnings. Therefore, they were excluded from the effect of dilutive securities. The number of common stock equivalents attributable to these RSUs was approximately 117,000 shares and 159,000 shares in 2017 and 2016, respectively.

(5) Dilutive securities in our diluted EPS calculation for 2018 do not include RSUs granted under our 2018 Plan because the effect would be antidilutive. The number of common stock equivalents attributable to these RSUs was 2.4 million as of December 31, 2018.

NOTE 15 — SELECTED QUARTERLY DATA (UNAUDITED)

(In millions, except per share amounts)	Three Months Ended March 31, 2018	June 30, 2018	September 30, 2018	December 31, 2018
Revenue				
Revenue	$ 423.3	$ 454.6	$ 324.4	$ 248.1
Revenue from related parties	44.2	38.7	10.0	—
Total revenue	467.5	493.3	334.4	248.1
Operating expenses				
Costs of revenue	312.2	329.4	222.2	169.4
Selling, general and administrative	25.8	20.8	19.7	21.6
Depreciation and amortization	20.6	20.7	21.1	22.3
Impairments and other charges	2.0	4.0	10.0	3.2
Loss (gain) on disposal of assets, net	0.5	(0.2)	(0.1)	(0.3)
Total operating expenses	361.1	374.7	272.9	216.2
Operating income	106.4	118.6	61.5	31.9
Interest expense, net	(17.4)	(12.1)	(10.4)	(9.4)
(Loss) gain on extinguishment of debt, net	(9.3)	(0.8)	(0.6)	0.9
Equity in net income (loss) of joint venture affiliate	—	(1.2)	(0.7)	3.0
Income before income taxes	79.7	104.5	49.8	26.4
Income tax expense (benefit)	1.0	0.9	0.2	(0.1)
Net income	$ 78.7	$ 103.6	$ 49.6	$ 26.5
Net income attributable to common stockholders	$ 501.9	$ 103.6	$ 49.6	$ 26.5
Basic and diluted earnings per share attributable to common stockholders	$ 5.68	$ 0.95	$ 0.45	$ 0.24
Shares used in computing basic and diluted earnings per share	88.4	109.3	109.3	109.4

(In millions, except per share amounts)	Three Months Ended March 31, 2017	June 30, 2017	September 30, 2017	December 31, 2017
Revenue				
Revenue	$ 191.9	$ 304.4	$ 409.8	$ 446.6
Revenue from related parties	21.6	40.5	39.2	12.1
Total revenue	213.5	344.9	449.0	458.7
Operating expenses				
Costs of revenue	174.8	236.3	298.8	299.9
Selling, general and administrative	19.5	20.8	21.7	19.0
Depreciation and amortization	21.8	21.3	22.1	21.4
Impairments and other charges	0.1	1.2	0.1	0.4
(Gain) loss on disposal of assets, net	(0.4)	(0.4)	(0.8)	0.2
Gain on insurance recoveries	(2.6)	(0.3)	—	—
Total operating expenses	213.2	278.9	341.9	340.9
Operating income	0.3	66.0	107.1	117.8
Interest expense, net	(21.2)	(21.5)	(22.1)	(21.9)
Loss on extinguishment of debt, net	—	—	—	(1.4)
Equity in net income (loss) of joint venture affiliate	0.9	0.2	(1.0)	(0.9)
(Loss) income before income taxes	(20.0)	44.7	84.0	93.6
Income tax expense	0.1	0.4	0.4	0.7
Net (loss) income	$ (20.1)	$ 44.3	$ 83.6	$ 92.9
Net (loss) income attributable to common stockholders	$ (71.4)	$ (10.5)	$ 25.1	$ 30.9
Basic and diluted (loss) earnings per share attributable to common stockholders	$ (1.38)	$ (0.20)	$ 0.48	$ 0.60
Shares used in computing basic and diluted (loss) earnings per share	51.8	51.8	51.8	51.8

Exhibit 21.1

List of Subsidiaries

The following is a list of the Company’s subsidiaries and includes all subsidiaries deemed significant. The jurisdiction of incorporation or organization of each company is listed in parenth

FTS International Services, LLC (Texas)
FTS International Manufacturing, LLC (Texas)

Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We have issued our report dated February 28, 2019, with respect to the consolidated financial statements included in the Annual Report of FTS International, Inc. on Form 10-K for the year ended December 31, 2018. We consent to the incorporation by reference of said report in the Registration Statement of FTS International, Inc. on Form S-8 (File No. 333-222892).

/s/ GRANT THORNTON LLP

Dallas, Texas
February 28, 2019

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Michael J. Doss, certify that:

1. I have reviewed this annual report on Form 10-K of FTS International, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and

5. The registrant’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date: February 28, 2019

By: /s/ Michael J. Doss
Michael J. Doss
Chief Executive Officer and Director
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Lance D. Turner, certify that:

1. I have reviewed this annual report on Form 10-K of FTS International, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant’s other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant’s internal control over financial reporting that occurred during the registrant’s most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant’s internal control over financial reporting; and

5. The registrant’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant’s auditors and the audit committee of the registrant’s board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant’s ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant’s internal control over financial reporting.

Date: February 28, 2019

By: /s/ Lance D. Turner
Lance D. Turner
Chief Financial Officer and Treasurer
(Principal Financial Officer and
Principal Accounting Officer)

Exhibit 32.1

**CERTIFICATIONS PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906 OF
THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report on Form 10-K of FTS International, Inc. (the "Company") for the fiscal year ending December 31, 2018, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, Michael J. Doss, Chief Executive Officer of the Company, and Lance D. Turner, Chief Financial Officer and Treasurer of the Company, each certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 that:

1. The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

2. The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company as of the dates and for the periods indicated.

Date: February 28, 2019	By: /s/ Michael J. Doss Michael J. Doss Chief Executive Officer and Director (Principal Executive Officer)
Date: February 28, 2019	By: /s/ Lance D. Turner Lance D. Turner Chief Financial Officer and Treasurer (Principal Financial Officer and Principal Accounting Officer)