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, 2021

OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
Commission File No. 001-38081

LIBERTY

Liberty Oilfield Services Inc.

(Exact Name of Registrant as Specified in its Charter)

Delaware	**81-4891595**
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification No.)
950 17th Street, Suite 2400 **Denver, Colorado**	**80202**
(Address of Principal Executive Offices)	(Zip Code)

(303) 515-2800
(Registrant's Telephone Number, Including Area Code)

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

Title of each class	Trading symbol(s)	Name of each exchange on which registered
Class A Common Stock, par value $0.01	**LBRT**	**New York Stock Exchange**

Securities registered pursuant to Section 12(g) of the Act: 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 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 presiding 12 months (or for such shorter period that the registrant was required to submit and post such files). ☒ Yes ☐ No

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 has filed a report on an attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

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

As of June 30, 2021, the last business day of the registrant's most recently completed second fiscal quarter, the aggregate market value of voting and non-voting common stock held by non-affiliates of the registrant was approximately $1.5 billion, determined using the per share closing price on the New York Stock Exchange on that date of $14.16. Shares of common stock held by each director and executive officer (and their respective affiliates) and each person who owns 10 percent or more of the outstanding common stock or who is otherwise believed by the registrant to be in a control position have been excluded. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

At February 18, 2022 the Registrant had 183,645,580 shares of Class A Common Stock and 2,449,191 shares of Class B Common Stock outstanding.

Documents Incorporated by Reference: Part III of this Annual Report on Form 10-K incorporates certain information by reference from the registrant's proxy statement for the 2022 annual meeting of stockholders to be filed no later than 120 days after the end of the registrant's fiscal year.

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CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K ("Annual Report") and certain other communications made by us contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act"), and Section 21E of the Securities Exchange of 1934, as amended (the "Exchange Act"), including statements about our expected growth from recent acquisitions such as the PropX Acquisition (as defined below) and OneStim Acquisition (as defined below), expected performance, future operating results, oil and natural gas demand and prices and the outlook for the oil and gas industry, future global economic conditions, the impacts of the novel strain of the coronavirus ("COVID-19") pandemic, improvements in operating procedures and technology, our business strategy and the business strategies of our customers, in addition to other estimates, and beliefs. For this purpose, any statement that is not a statement of historical fact should be considered a forward-looking statement. We may use the words "estimate," "outlook," "project," "position," "potential," "likely," "believe," "anticipate," "plan," "expect," "intend," "achievable," "anticipate," "may," "will," "continue," "should," "could" and similar expressions to help identify forward-looking statements. However, the absence of these words does not mean that the statements are not forward-looking. We cannot assure you that our assumptions and expectations will prove to be correct. Important factors could cause our actual results to differ materially from those indicated or implied by forward-looking statements, including but not limited to the risks described in this Annual Report and other filings that we make with the U.S. Securities Exchange Commission (the "SEC"). We undertake no intention or obligation to update or revise any forward-looking statements, except as required by law, whether as a result of new information, future events or otherwise and readers should not rely on the forward-looking statements as representing the Company's views as of any date subsequent to the date of the filing of this Annual Report. These forward-looking statements are based on management's current belief, based on currently available information, as to the outcome and timing of future events.

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

MARKET AND INDUSTRY DATA

This Annual Report includes market and industry data and certain other statistical information based on third-party sources including independent industry publications, government publications and other published independent sources, such as content and estimates provided by Lium, LLC ("Lium Research") as of December 31, 2021 and industry content and figures provided by Baker Hughes Co. ("Baker Hughes") as of December 31, 2021. Neither Lium Research nor Baker Hughes is a member of the Financial Industry Regulator Authority or the Securities Investor Protection Corporation and neither is a registered broker dealer or investment advisor. Although we believe these third-party sources are reliable as of their respective dates, we have not independently verified the accuracy or completeness of this information. Some data is also based on our own good faith estimates, which are supported by our management's knowledge of and experience in the markets and business in which we operate.

TRADEMARKS, SERVICE MARKS AND TRADENAMES

This Annual Report contains trademarks, tradenames, and service marks that are owned by us or other companies, which are our property. Solely for convenience, the trademarks, tradenames, and service marks referred to in this Annual Report may appear without the ® and TM symbols, but such references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or the rights of the applicable licensors to these trademarks, tradenames, and service marks. We do not intend our use or display of other parties' trademarks, tradenames, or service marks to imply, and such use or display should not be construed to imply, a relationship with, or endorsement or sponsorship of us by, these other parties.

PART I

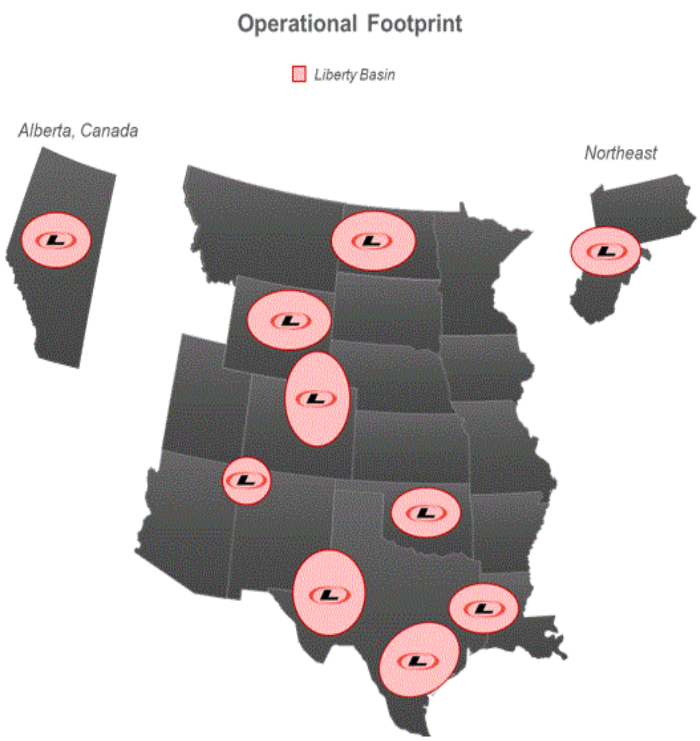
As used in this Annual Report, except as otherwise indicated or required by the context, all references in this Annual Report to (i) the "Company," "we," "us" and "our" refer to Liberty Oilfield Services Inc. and its consolidated subsidiaries; (ii) "Liberty LLC" refer to Liberty Oilfield Services New HoldCo LLC; (iii) "Schlumberger" refer to, collectively, Schlumberger Technology Corporation and Schlumberger Canada Limited; and (iv) "PropX" refer to Proppant Solutions, LLC and its predecessor in interest.

Item 1. Business

Our Company

We are a leading integrated oilfield services and technology company focused on providing innovative hydraulic services and related technologies to onshore oil and natural gas exploration and production ("E&P") companies in North America. We offer customers hydraulic fracturing services, together with complementary services including wireline services, proppant delivery solutions, data analytics, related goods (including our sand mine operations), and technologies that will facilitate lower emission completions, thereby helping our customers reduce their emissions profile.

Our primary locations of operation include the Permian Basin, the Eagle Ford Shale, the Denver-Julesburg Basin (the "DJ Basin"), the Williston Basin, the San Juan Basin, the Powder River Basin, the Haynesville Shale, the South Central Oklahoma Oil Province and Sooner Trend Anadarko Canadian Kingfisher (collectively, the "SCOOP/STACK"), the Marcellus Shale, the Utica Shale, and the Western Canadian Sedimentary Basin, which are among the most active basins in North America. The breadth of our operational footprint provides us an opportunity to leverage our fixed costs and to efficiently reposition our equipment in response to customer requirements. The map below represents our current areas of operation.



The process of hydraulic fracturing involves pumping a pressurized stream of fracturing fluid (typically a mixture of water, chemicals and proppant) into a well casing or tubing to cause the underground formation to fracture or crack. These fractures release trapped hydrocarbon particles and provide a conductive channel for the oil or natural gas to flow freely to the wellbore for collection. The propping agent, or proppant, typically sand, becomes lodged in the cracks created by the hydraulic fracturing process, "propping" them open to facilitate the flow of hydrocarbons from the reservoir to the well. The fracturing fluid is engineered to lose viscosity, or “break,” and is subsequently flowed back from the formation, leaving the proppant suspended in the formation fractures. Once our customer has flushed the fracturing fluids from the well using a controlled flow-back process, the customer manages fluid and water recycling or disposal.

Our hydraulic fracturing fleets consist of mobile hydraulic fracturing units and other auxiliary heavy equipment to perform fracturing services. Our hydraulic fracturing units consist primarily of high-pressure hydraulic pumps, engines, transmissions, radiators and other supporting equipment that are typically mounted on trailers. We refer to the group of units and other equipment, such as blenders, data vans, sand storage, tractors, manifolds and high pressure fracturing iron, which are necessary to perform a typical hydraulic fracturing job, as a “fleet,” and the personnel assigned to each fleet as a “crew.” The size of each fleet and crew can vary depending on the requirements of each job design.

We also have wireline operations as a result of the acquisition of Schlumberger’s OneStim business in December 2020, whereby we obtained certain assets and liabilities of the OneStim business including OneStim’s hydraulic fracturing pressure pumping services business in onshore United States and Canada (the “OneStim Acquisition”). Our wireline units consist of a truck equipped with a spool of wireline that is lowered into wells to convey specialized tools or equipment, such as perforating guns and charges, that are necessary to connect the wellbore with the target formation. This operation is performed between each hydraulic fracturing stage. Our wireline service is primarily offered alongside our hydraulic fracturing services, which allows us to maximize efficiency for our customers through optimized coordination of the wireline and hydraulic fracturing services. In addition, we also offer our wireline service on a stand-alone basis.

As a result of the PropX Acquisition, which was completed in October 2021 (described in this Annual Report under “—Recent Developments—PropX Acquisition”), we are now a leading provider of last-mile proppant delivery solutions, including proppant handling equipment and logistics software across North America. PropX offers innovative environmentally friendly technology with optimized dry and wet sand containers and wellsite proppant handling equipment that drive logistics efficiency and reduce noise and emissions. We believe that PropX wet sand handling technology is a key enabler of the next step of cost and emissions reductions in the proppant industry. PropX also offers customers the latest real-time logistics software, PropConnect™, for sale or as hosted software as a service.

Our operations are organized into a single business segment, which consists of hydraulic fracturing services, including wireline, proppant delivery and goods, including our Permian Basin sand mines, and we have one reportable geographical segment, North America. We have grown from one active hydraulic fracturing fleet as of December 2011 to over 30 active fleets as of December 31, 2021. We are focused on providing “next-generation” frac fleets and technologies to assist our customers with completing their wells in an ESG-friendly manner.

Our founders and management are pioneers in the development of data-driven hydraulic fracturing technologies for application in shale plays. Prior to founding the Company, the majority of our management team founded and built Pinnacle Technologies, Inc. (“Pinnacle Technologies”) into a leading fracturing technology company. In 1992, Pinnacle Technologies developed the first commercial hydraulic fracture mapping technologies, analytical tools that played a major role in launching the shale revolution. Our extensive experience with fracture technologies and customized fracture design has enabled us to develop new technologies and processes that provide our customers with real-time solutions that significantly enhance their completions. These technologies include hydraulic fracture propagation models, reservoir engineering tools, large, proprietary shale production databases and multi-variable statistical analysis techniques. Taken together, these technologies have enabled us to be a leader in hydraulic fracture design innovation and application. Our management team has an average of over 20 years of oilfield services experience, and the majority of our management team worked together before founding our company.

We believe technical innovation and strong relationships with our customer and supplier bases distinguish us from our competitors and are the foundations of our business. We expect that E&P companies will continue to focus on technological innovation as completion complexity and fracture intensity of horizontal wells increases, particularly as customers are increasingly focused on reducing emissions from their completions operations. We remain proactive in developing innovative solutions to industry challenges, including developing: (i) our databases of U.S. unconventional wells to which we apply our proprietary multi-variable statistical analysis technologies to provide differential insight into fracture design optimization; (ii) our Liberty Quiet Fleet® design which significantly reduces noise levels compared to conventional hydraulic fracturing fleets; (iii) hydraulic fracturing fluid systems tailored to the specific reservoir properties in the basins in which we operate and (iv) our dual fuel dynamic gas blending fleets that allow our engines to run diesel or a combination of diesel and natural gas, to optimize fuel use, reduce emissions and lower costs. In addition, our integrated supply chain includes proppant, chemicals, equipment, logistics and integrated software which we believe promotes wellsite efficiency and leads to more pumping hours and higher productivity throughout the year to better service our customers. In order to achieve our technological objectives, we carefully manage our liquidity and debt position to promote operational flexibility and invest in the business throughout the full commodity cycle.

Recent Developments

PropX Acquisition

On October 26, 2021, the Company acquired Proppant Express Investments, LLC in exchange for $11.9 million in cash and 3,405,526 shares of Class A Common Stock and 2,441,010 shares of Class B common stock, par value $0.01 per share ("Class B Common Stock" and, together with Class A Common Stock, the "Common Stock"), and 2,441,010 units of Liberty LLC ("Liberty LLC Units"), for total consideration of $103.0 million, based on the Class A Common Stock closing price of $15.58 on October 26, 2021, subject to customary post-closing adjustments (the "PropX Acquisition"). The Liberty LLC Units are redeemable for an equivalent number of shares of Class A Common Stock at any time, at the election of the shareholder. See Note 3—Acquisitions to the consolidated financial statements included in "Item 8. Financial Statements and Supplementary Data."

Joinder to Liberty LLC Agreement

In connection with the PropX Acquisition, each of the sellers and certain of their investors that received Liberty LLC units, entered into a joinder to the Second Amended and Restated Limited Liability Company Agreement of Liberty LLC (the "Liberty LLC Agreement"). Under the Liberty LLC Agreement, holders, subject to certain limitations, have the right, pursuant to a redemption right, to cause Liberty LLC to acquire all or a portion of their Liberty LLC Units for, at Liberty LLC's election, (i) shares of our Class A Common Stock at a redemption ratio of one share of Class A Common Stock for each Liberty LLC Unit redeemed, subject to conversion rate adjustments for stock splits, stock dividends and reclassification or (ii) an equivalent amount of cash. Alternatively, upon the exercise of the redemption right, we (instead of Liberty LLC) have a call right to acquire each tendered Liberty LLC Unit directly from the holder for, at its election, (x) one share of Class A Common Stock or (y) an equivalent amount of cash. In addition, upon a change of control, we have the right to require each holder of Liberty LLC Units (other than us) to exercise its redemption right with respect to some or all of such unitholder's Liberty LLC Units. As the holders redeem their Liberty LLC Units, our membership interest in Liberty LLC will be correspondingly increased, the number of shares of Class A Common Stock outstanding will be increased, and the number of shares of Class B Common Stock outstanding will be reduced.

ABL Facility

On October 22, 2021, we entered into an amendment with respect to our ABL Facility. Under the terms of the amendment, the maximum borrowing amount was increased to $350.0 million, subject to certain borrowing base limitations based on a percentage of eligible accounts receivable and inventory (with the ability to request an increase in the size of the ABL Facility by $75 million). Additionally, limits under certain covenants related to allowable indebtedness and other activities were expanded. The ABL Facility maturity was extended to the earlier of (i) October 22, 2026 and (ii) to the extent the debt under the Term Loan Facility remains outstanding 90 days prior to the final maturity of the Term Loan Facility. All other financial provisions under the original agreement are still applicable to the ABL Facility aside from the aforementioned changes to the borrowing base.

Term Loan Facility

On October 22, 2021, we entered into a Fifth Amendment to Credit Agreement, Second Amendment to Guaranty and Security Agreement and Termination of Right of First Offer Letter (the "Term Loan Credit Agreement Amendment"). The Term Loan Credit Agreement Amendment further amends the credit agreement and guaranty and security agreement and terminates the right of first offer letter originally entered into by the parties on September 19, 2017 (the "Right of First Offer Letter"), which governs our Term Loan Facility. Along with other revisions, the Term Loan Credit Agreement Amendment (i) increased certain indebtedness baskets; (ii) provided additional flexibility for a potential future internal structuring; (iii) extended the maturity date through September 19, 2024; and (iv) terminated a right of first offer in favor of the Term Loan Facility lenders.

ESG Focused

While we recognize the various environmental and social impacts of hydrocarbon energy, we believe that access to life-enhancing modern energy presents the most pressing global energy challenge. We passionately work to better the process of bringing hydrocarbons to the surface in a clean, safe and efficient fashion and view ESG principles as foundational to our business. We focus on developing and adding technologies to our operations that assist our customers in implementing their ESG goals. The list below sets forth specific examples of our efforts towards ESG principles:

- In 2013, we introduced Tier 2 dual-fuel technology to our fleets which allows our frac pumps to use natural gas in place of some diesel fuel to lower particulate emissions.

- In 2014, we began the use of containerized sand delivery at frac locations, which reduces dust, noise and truck traffic.
- In 2016, we introduced Quiet Fleet® technology, which significantly reduces noise levels associated with frac operations.
- In 2018, we began a partnership with an equipment supplier to introduce Tier 4 dynamic gas blending, or DGB, engines to our frac fleet that can substitute up to 80% of the diesel typically used by a frac pump with natural gas and significantly lower emission levels in frac operations. Tier 4 DGB engines were added to our fleet in 2020.
- In 2021, we announced the successful test of digiFrac™, our innovative, purpose-built electric frac pump that has approximately a 25% lower CO_2e emission profile than the Tier IV DGB. We have entered into two multi-year arrangements with customers for digiFrac fleets and expect to deliver the first fleet into commercial service in 2022.
- In October 2021, we closed the acquisition of PropX. PropX offers innovative, environmentally friendly technology with optimized dry and wet sand containers and wellsite proppant handling equipment that drive logistics efficiency and reduce noise and emissions.

We are continuously committed to engagement in our communities. We provide K-12 scholarships to low-income children through ACE (Alliance for Choice in Education) and we have launched a Liberty Scholars program at Montana Technological University to enable lower income students to obtain a college engineering education. In 2021, over 100 students received Liberty scholarships. We have numerous other efforts targeting schools, veterans, poverty abatement, low-income housing, criminal justice reform and job opportunities for those who had a disadvantaged start in life. In 2021, we launched Love, Liberty, our matching program that is aimed to encourage our employees to get involved in their communities.

Cyclical Nature of Industry

We operate in a highly cyclical industry. The key factor driving demand for our services is the level of drilling activity by E&P companies, which in turn depends largely on the current and anticipated economics of new well completions. Global supply and demand for oil and the domestic supply and demand for natural gas are critical in assessing industry outlook. Demand for oil and natural gas is cyclical and subject to large, rapid fluctuations, such as those experienced in 2020. E&P companies tend to increase capital expenditures in response to increases in oil and natural gas prices, which generally results in greater revenues and profits for oilfield service companies such as ours. Increased capital expenditures also ultimately lead to greater production, which historically has resulted in increased supplies of hydrocarbons and reduced prices which in turn tend to drive a future reduction in E&P companies capital expenditures and reduce demand for oilfield services. For these reasons, the results of our operations may fluctuate from quarter to quarter and from year to year, and these fluctuations may distort comparisons of results across periods.

Seasonality

Our results of operations have historically reflected seasonal tendencies relating to holiday seasons, inclement weather and the conclusion of our customers' annual drilling and completion capital expenditure budgets. Our most notable declines typically occur in the fourth quarter of the year for the reasons described above. Additionally, some of the areas in which we have operations, including Canada, the DJ Basin, Powder River Basin and Williston Basin, are adversely affected by seasonal weather conditions, primarily in the winter and spring. During periods of heavy snow, ice, rain, or frost, and related road restrictions, we may be unable to move our equipment between locations, thereby reducing our ability to provide services and generate revenues. The exploration activities of our customers may also be affected during such periods of adverse weather conditions. Additionally, extended drought conditions in our operating regions could impact our ability or our customers' ability to source sufficient water or increase the cost for such water.

Intellectual Property

Over the last several years and in connection with the acquisitions of OneStim and PropX, we have significantly invested in our research and technology capabilities. Our efforts to date have been focused on developing innovative, fit-for-purpose solutions designed to enhance our core service offerings, increase completion efficiencies, provide cost savings to our operations and add value for our customers. A cornerstone of our technological advantage is a series of proprietary databases of U.S. unconventional wells that include production data, completion designs and reservoir characteristics. We utilize these databases to perform multi-variable statistical analysis that generates differential insight into fracture design optimization to enhance our customers' production economics. Our emphasis on data analytics is also deployed during job execution through the use of real-time feedback on variables that maximizes customer returns by improving cost-effective hydraulic fracturing operations.

Today, we hold over 500 patents and patent licenses relating to our engineering and technology solutions. We seek patent and trademark protections for our technology when we deem it prudent, and we aggressively pursue protection of these rights when warranted. We believe our patents, trademarks, and other protections for our proprietary technologies are adequate for the conduct of our business and that no single patent or trademark is critical to our business. In addition, we rely, to a great extent, on the technical expertise and know-how of our personnel to maintain our competitive position, and we take commercially reasonable measures to protect trade secrets and other confidential and/or proprietary information relating to the technologies we develop.

Human Capital Management

As of December 31, 2021, we had 3,601 employees and no unionized labor. We believe we have good relations with our employees and that one of our key competitive advantages is our people. Our highly trained, experienced and motivated employees are critical to delivering our hydraulic fracturing services. Taking care of our employees is one of our top priorities, and we continually invest in hiring, training and retaining the employees we believe to be the best in our field. We consistently assess the current business environment and labor market to refine our compensation and benefits programs in order to attract and retain top talent in our industry. We temporarily implemented a company-wide employee furlough plan in connection with COVID-19 due to the uncertain level of frac demand we experienced during the second and third quarters of 2020, but as of September 30, 2020, all employees were returned from furlough. During 2021, we experienced increased turnover in field employee positions; however that trend improved in the later part of the year and into 2022. We strive to promote from within our existing employee base to manage new hydraulic fracturing fleets and organically grow our operating expertise. This organic growth is essential in achieving the expertise and level of customer service we strive to provide each of our customers. As a result, we plan to continue to invest in our employees through both personal and professional training to attract and retain the best individuals in our areas of operation. Overall, we focus on individual contributions and team success to foster a culture built around operational excellence and superior safety.

Health and Safety

Our people are our most important asset and ensuring their safety and the safety of those around them is the most important thing we do. Making certain that the Liberty team is well trained to handle the complexities of daily field operations, and that their training and competency remains current with the latest technology and standards is a key component. In order to facilitate this training, we have developed the Liberty Frac Academy, a thorough program where employees are trained on various aspects of the Company, from safety in equipment operation to leadership skills. The Liberty Frac Academy not only ensures dissemination of high-quality training material, but also provides a forum for sharing best practices and lessons learned across the Company. As a result, we are among the safest service providers in the industry with a constant focus on Health, Safety and Environmental performance and service quality, as evidenced by an average incident rate that was 10% less than the industry average from 2019 to 2021. Our employee-centered focus and reputation for safety has enabled us to obtain projects from industry leaders with some of the most demanding safety and operational requirements. We have implemented and continue to implement safety measures in all of our facilities to address the COVID-19 pandemic.

Programs and Benefits

One way we have demonstrated a history of investing in our workforce is by offering competitive salaries and wages. To foster a strong sense of ownership, restricted stock units are provided to eligible employees under our long term incentive plan. Furthermore, we offer innovative benefits to all eligible employees, including, among others, comprehensive health insurance coverage, parental leave to all new parents, for birth or adoption, financial support for child adoption, leave to care for partners with serious health conditions, 401(k) savings plan and educational tuition assistance for both bachelor’s degree and master’s degree programs. We are also passionate about community investment and, in 2019, we joined the Ban the Box initiative which provides work opportunities for formerly incarcerated individuals.

Governmental Regulation and Climate Change

As a company with operations in both the United States and Canada, we are subject to the laws of both jurisdictions in which we operate and the rules and regulations of various governing bodies, which may differ among those jurisdictions. Compliance with these laws, rules and regulations has not had, and is not expected to have, a material effect on our capital expenditures, results of operations and competitive position as compared to prior periods. We are also subject to numerous environmental and regulatory requirements related to our operations. For further information related to such regulation, see the risks described under the heading “Risk Factors” in this Annual Report.

Our operations are subject to numerous stringent and complex laws and regulations at the federal, state, and local levels governing the discharge of materials into the environment, environmental protection, and health and safety aspects of our operations. Failure to comply with these laws and regulations or to obtain or comply with permits may result in the assessment of administrative, civil, and criminal penalties, imposition of remedial or corrective action requirements, and the imposition of injunctions or other orders to prohibit certain activities, restrict certain operations, or force future compliance with environmental requirements.

There is inherent risk of incurring significant environmental costs and liabilities in the performance of our operations due to our handling of petroleum hydrocarbons, other hazardous substances, and wastes, as a result of air emissions and wastewater discharges related to our operations, and because of historical operations and waste disposal practices. Spills or other releases of regulated substances, including such spills and releases that occur in the future, could expose us to material losses, expenditures, and liabilities under applicable environmental laws and regulations. Under certain of such laws and regulations, we could be held strictly liable for the removal or remediation of previously released materials or property contamination, regardless of whether we were responsible for the release or contamination and even if our operations met previous standards in the industry at the time they were conducted. The following is a summary of some of the existing laws, rules, and regulations to which we are subject.

U.S. Laws and Regulations

Hazardous Substances and Waste Handling

The Resource Conservation and Recovery Act ("RCRA") and comparable state statutes regulate the generation, transportation, treatment, storage, disposal, and cleanup of hazardous and non-hazardous wastes. Under guidance issued by the U.S. Environmental Protection Agency (the "EPA"), the individual states administer some or all of the provisions of RCRA, sometimes in conjunction with their own, more stringent requirements. RCRA currently exempts many E&P wastes from classification as hazardous waste. Specifically, RCRA excludes from the definition of hazardous waste produced waters and other wastes intrinsically associated with the exploration, development, or production of crude oil and natural gas. However, these E&P wastes may still be regulated under state solid waste laws and regulations, and it is possible that certain oil and natural gas E&P wastes now classified as non-hazardous could be classified as hazardous waste in the future. Stricter regulation of wastes generated during our or our customers' operations could result in increased costs for our operations or the operations of our customers, which could in turn reduce demand for our services and adversely affect our business. We cannot guarantee that the EPA will not revisit the exemption of E&P waste or that waste will not become more heavily regulated at the federal or state level.

Comprehensive Environmental Response, Compensation, and Liability Act

The Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA"), also known as the Superfund law, imposes joint and several liability, without regard to fault or legality of conduct, on classes of persons who are considered to be responsible for the release of a hazardous substance into the environment. These persons include the current and former owner or operator of the site where the release occurred and anyone who transported or disposed or arranged for the transport or disposal of a hazardous substance released at the site. Persons who are or were responsible for releases of hazardous substances under CERCLA and any state analogs may be subject to joint and several strict liability for the costs of cleaning up the hazardous substances that have been released into the environment and for damages to natural resources and for the costs of certain health studies. We currently own, lease, or operate numerous properties that have been used for manufacturing and other operations for many years. These properties and the substances disposed or released on them may be subject to CERCLA and analogous state laws. Under such laws, we could be required to remove previously disposed substances and wastes, remediate contaminated property, or perform remedial operations to prevent future contamination. 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 the hazardous substances released into the environment.

Worker Health and Safety

We are subject to a number of federal and state laws and regulations, including the OSHA, establishing requirements to protect the health and safety of workers. The OSHA hazard communication standard, the EPA community right-to-know regulations under Title III of the federal Superfund Amendment and Reauthorization Act, and comparable state statutes require maintenance of information about hazardous materials used or produced in operations and provision of this information to employees, state and local government authorities, and citizens. Specifically, OSHA has enacted a regulation regarding crystalline silica exposures, which included requirements that hydraulic fracturing operations implement dust controls to limit exposures to the substance. Additionally, the Federal Motor Carrier Safety Administration (the "FMCSA") regulates and provides safety oversight of commercial motor vehicles, the EPA establishes requirements to protect human health and the environment, the federal Bureau of Alcohol, Tobacco, Firearms and Explosives establishes requirements for the safe use and storage of explosives, and the federal Nuclear Regulatory Commission establishes requirements for the protection against ionizing radiation. Substantial fines and penalties can be imposed, and orders or injunctions limiting or prohibiting certain operations may be issued, in connection with any failure to comply with these laws and regulations.

Water Discharges

The federal Water Pollution Control Act (the "Clean Water Act") and analogous state laws impose restrictions and strict controls with respect to the discharge of pollutants, including spills and leaks of oil and other substances, into waters of the U.S. The discharge of pollutants into regulated waters, including jurisdictional wetlands, is prohibited, except in accordance with the terms of a permit issued by the EPA or an analogous state agency. To the extent the agencies expanding the range of properties subject to the Clean Water Act's jurisdiction, certain energy companies could face increased costs and delays with respect to obtaining permits for dredge and fill activities in wetland areas, which in turn could reduce demand for our services. Furthermore, the process for obtaining permits has the potential to delay our operations and those of our customers. Spill prevention, control, and countermeasure requirements of federal laws require appropriate containment berms and similar structures to help prevent the contamination of navigable waters by a petroleum hydrocarbon tank spill, rupture, or leak. In addition, the Clean Water Act and analogous state laws require individual permits or coverage under general permits for discharges of wastewater and storm water runoff from certain types of facilities. The Clean Water Act and analogous state laws provide for administrative, civil, and criminal penalties for unauthorized discharges and, together with the Oil Pollution Act of 1990, impose rigorous requirements for spill prevention and response planning, as well as substantial potential liability for the costs of removal, remediation, and damages in connection with any unauthorized discharges.

Air Emissions

The federal Clean Air Act (the "CAA") and comparable state laws regulate emissions of various air pollutants through air emissions permitting programs and the imposition of other requirements. In addition, the EPA has developed, and continues to develop, stringent regulations governing emissions of toxic air pollutants at specified sources. These regulations change frequently. These laws and regulations may require us to obtain pre-approval for the construction or modification of certain projects or facilities expected to produce or significantly increase air emissions, obtain and strictly comply with stringent air permit requirements, or utilize specific equipment or technologies to control emissions of certain pollutants. In recent years, the CAA has been used to impose additional stringent requirements upon oil and gas production operations. While these rules may not be directly applicable to our business, they are applicable to the business of our customers. Promulgation of stricter permitting requirements could delay or impair our or our customers' ability to obtain air emission permits, to develop new wells and to continue to operate existing wells, and result in fewer wells being drilled or redeveloped, causing a decrease in demand for our services. Federal and state regulatory agencies can impose administrative, civil, and criminal penalties, as well as injunctive relief, for non-compliance with air permits or other requirements of the CAA and associated state laws and regulations.

Climate Change

The EPA has determined that emissions of greenhouse gases, including carbon dioxide and methane, present a danger to public health and the environment because emissions of such gases are, according to the EPA, contributing to warming of the Earth's atmosphere and other climatic changes. The EPA has established greenhouse gas emissions reporting requirements for sources in the oil and gas sector and has also promulgated rules requiring certain large stationary sources of greenhouse gases to obtain preconstruction permits under the CAA and follow "best available control technology" requirements. Although we are not likely to become subject to greenhouse gas emissions permitting and best available control technology requirements because none of our facilities are presently major sources of greenhouse gas emissions, such requirements could become applicable to our customers. In addition, the EPA has used the CAA to impose additional greenhouse gas emissions control requirements upon our customers. These additional requirements on greenhouse gas emissions from our customers could have an adverse effect on their costs of operations or financial performance, thereby adversely affecting our business, financial condition, and results of operations. Also, the U.S. Congress has from time to time considered adopting legislation to reduce emissions of greenhouse gases, and many states have already established regional greenhouse gas "cap-and-trade" programs. The adoption of any legislation or regulation that restricts emissions of greenhouse gases from the equipment and operations of our customers or with respect to the oil and natural gas they produce could adversely affect demand for our products and services.

Hydraulic Fracturing

Our business is clearly dependent on hydraulic fracturing and horizontal drilling activities. As further described herein, hydraulic fracturing is an important and common practice that is used to stimulate production of hydrocarbons, particularly natural gas, from tight formations, including shale. The process, which involves the injection of water, sand, and chemicals 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. Specifically, there is considerable uncertainty surrounding regulation of the emissions of methane, which may be released during hydraulic fracturing, chemicals used in the hydraulic fracturing process, the discharge of wastewater from hydraulic fracturing operations and concerns about the triggering of seismic activity by the injection of produced waters into underground wells. Certain proposed regulation could make it significantly more difficult and/or costly to drill and operate oil and gas wells. If adopted, such regulation could result in a decline in the completion of new oil and gas wells or the recompletion of existing wells, which could negatively impact the drilling programs of our customers and, consequently, delay, limit or reduce the demand for our services. Given the long-term trend towards increasing regulation, future regulation in the industry remains a possibility.

Some states, counties, and municipalities have enacted or are considering moratoria on hydraulic fracturing. For example, New York, Vermont, Maryland, and Washington have banned, or are in the process of banning, the use of high-volume hydraulic fracturing. Alternatively, some municipalities 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. Further, some states, counties, and municipalities are closely examining water use issues, such as permit and disposal options for processed water, which could have a material adverse impact on our financial condition, prospects, and results of operations if such additional permitting requirements are imposed upon our industry. If new laws or regulations that significantly restrict hydraulic fracturing are adopted, such laws could reduce demand for our business by making it more difficult or costly for certain customers to perform fracturing to stimulate production from tight formations.

National Environmental Policy Act

Businesses and operations of our customers that are carried out on federal lands may be subject to the National Environmental Policy Act (“NEPA”), which requires federal agencies, including the U.S. Department of the Interior, to evaluate major agency actions having the potential to significantly impact the human environment. In the course of such evaluations, an agency will evaluate the potential direct, indirect, and cumulative impacts of a proposed project and, if necessary, will prepare a detailed Environmental Impact Statement that must be made available for public review and comment. To the extent that our customers’ current activities, as well as proposed plans, on federal lands require governmental permits that are subject to the requirements of NEPA, this process has the potential to delay or impose additional conditions upon the development of oil and natural gas projects which in turn could reduce demand for our services.

Endangered Species Act and Migratory Bird Treaty Act

The federal Endangered Species Act (“ESA”) was established to protect endangered and threatened species. Pursuant to that act, if a species is listed as threatened or endangered, restrictions may be imposed on activities adversely affecting that species or its habitat. The U.S. Fish and Wildlife Service (the “FWS”) must also designate the species’ critical habitat and suitable habitat as part of the effort to ensure survival of the species. A critical habitat or suitable habitat designation could result in further material restrictions to land use and may materially delay or prohibit land access for oil and natural gas development. Similar protections are offered to migratory birds under the Migratory Bird Treaty Act (the “MBTA”), which makes it illegal to, among other things, hunt, capture, kill, possess, sell, or purchase migratory birds, nests, or eggs without a permit. This prohibition covers most bird species in the U.S. Future implementation of the rules implementing the ESA and the MBTA are uncertain. If our customers were to have areas within their business and operations designated as critical or suitable habitat for a protected species, it could decrease demand for our services and have a material adverse effect on our business.

Canadian Laws and Regulations

Companies such as us offering oilfield services that include hydraulic fracturing, engineering, and wireline services in the Province of Alberta in Canada are regulated by both the provincial government of Alberta (“Province”) and the federal government of Canada (“Canada”). This includes, but is not limited to, regulation related to environmental protection legislation, climate change legislation, fracking legislation, and legislation related to wildlife. In addition to being regulated by the Province and Canada, oilfield services companies may also be subject to other international, national, and subnational laws, regulations, and policies.

Provincial Legislation

Oilfield services companies are primarily regulated by provincial governments in Canada. For example, in Alberta, provincial legislation potentially applicable to our Canadian operations includes the Environmental Protection and Enhancement Act, RSA 2000, e E-12. This Act promotes the protection, enhancement and wise use of the environment, and deals with matters such as air emissions, water discharges, and the handling of hazardous substances and waste control (for example, under the Waste Control Regulation, Alta Reg 192/1996).

Other potentially applicable provincial legislation in Alberta includes legislation directed at the transportation of dangerous goods, including oil (the Dangerous Goods Transportation and Handling Act, RSA 2000, c D-4 and associated regulations), legislation intended to provide for the responsible management of oil wells and associated sites (the Oil and Gas

Conservation Act, RSA 2000, c O-6), legislation establishing regulatory bodies overseeing oil and gas and electricity in Alberta (the Responsible Energy Development Act, SA 2012, c R-17.3 and the Alberta Utilities Commission Act, SA 2007, c A-37.2), legislation governing the removal of gas or propane from Alberta (the Gas Resources Preservation Act, RSA 2000, c G-4), legislation to effect conservation and prevent waste of the oil sands resource in Alberta (the Oil Sands Conservation Act, RSA 2000, c O-7) and legislation governing worker safety (the Occupational Health and Safety Act, SA 2017, c O-2.1).

The Alberta Energy Regulator has a number directives that are applicable to oilfield services companies, such as Directive 050 which addresses salinity ranges for soils that can receive drilling wastes, and Directive 058, which sets out regulatory requirements for the handling, treatment, and disposal of upstream oilfield waste. Other provinces in Canada have their own statutory regime applicable to oilfield service companies.

Federal Legislation

The Federal government in Canada shares certain jurisdiction with the provinces over certain environmental matters. Federal legislation potentially applicable to our Canadian operations includes legislation focused on regulating greenhouse gases (the Greenhouse Gas Pollution Pricing Act, SC 2018, c 12, s 186), legislation aimed at protecting wildlife (the Species at Risk Act, SC 2002, c 29), legislation governing approvals for projects (the Impact Assessment Act, SC 2019, c 28, s 1), and legislation governing the transportation of potentially dangerous substances (the Transportation of Dangerous Goods Act, 1992, SC 1992, c 34).

Properties

Properties

Our corporate headquarters are located at 950 17th Street, Suite 2400, Denver, Colorado 80202. We lease our general office space at our corporate headquarters. The lease expires in December 2027. We currently own or lease the following additional principal properties:

District Facility Location	Size	Leased or Owned
Midland, TX	160,000 sq. ft on 147 acres	Owned
Odessa, TX	77,500 sq. ft on 47 acres	Owned
Cibolo, TX	90,000 sq. ft on 34 acres	Owned
Kermit, TX	5,000 acres	Owned
Monahans, TX	3,200 acres	Owned
Magnolia, TX	63,350 sq. ft.	Leased (through May 31, 2031)
Shreveport, LA	225,000 sq ft. on 50 acres	Owned
Cheyenne, WY	115,000 sq. ft on 60 acres	Owned
Gillette, WY	32,757 sq. ft on 15 acres	Leased (through December 31, 2034)
Henderson, CO	50,000 sq. ft on 13 acres	Leased (through December 31, 2034)
Henderson, CO	96,582 sq. ft on 12 acres	Owned
Williston, ND	30,000 sq. ft on 15 acres	Owned
El Reno, OK	80,000 sq. ft on 33 acres	Owned
Red Deer, AB	170,000 sq. ft on 42 acres	Owned
Grand Prairie, AB	135,000 sq. ft on 40 acres	Owned
Huallen, AB	80 acres	Owned

We also lease several smaller facilities, which leases generally have terms of one to six years. We believe that our existing facilities are adequate for our operations and their locations allow us to efficiently serve our customers. We do not believe that any single facility is material to our operations and, if necessary, we could readily obtain a replacement facility.

Marketing and Customers

We have developed long-term partnerships with our customers through a continuous dialogue focused on their production economics. Further, we have a proven track record of executing our customers' plans and delivering on time and in line with expected costs. Our customer base includes a broad range of integrated and independent E&P companies, including some of the largest E&P companies in our areas of operation such as Occidental Petroleum Corp, ConocoPhillips Company and ExxonMobil. We believe our customer relationships enabled us to maintain higher utilization than many of our competitors during the downturn resulting from the COVID-19 pandemic. Our technological innovations, customer-tailored approach and track record of consistently providing high-quality, safe and reliable service has allowed us to develop long-term customer partnerships, which we believe makes us the service provider of choice for many of our customers.

Our sales and marketing activities typically are performed through our local sales representatives in each geographic region, and are supported by our corporate headquarters. For the years ended December 31, 2021, 2020 and 2019, our top five customers collectively accounted for approximately 27%, 48%, and 35% of our revenues, respectively. For the years ended December 31, 2021 and 2019, no customer accounted for more than 10% of our revenues. For the year ended December 31, 2020, PDC Energy Inc., WPX Energy, Conoco-Phillips Company, and Parsley Energy Operations, LLC each accounted for more than 10% of our revenues.

Suppliers and Raw Materials

We have a dedicated supply chain team that manages sourcing and logistics to ensure flexibility and continuity of supply in a cost effective manner across our areas of operation. We have built long-term relationships with multiple industry leading suppliers of proppant, chemicals and hydraulic fracturing equipment and have started to internally design and assemble key pump and maintenance parts. In addition, we have built a strong relationship with the assemblers of our custom-designed hydraulic fracturing fleets and believe we will continue to have timely access to new, high capability fleets as we continue to grow. In 2018, we vertically integrated a supplier of certain major components through the acquisition of ST9 Gas and Oil LLC. In October 2021, we vertically integrated a supplier of our containerized sand and last mile proppant logistics solutions with the acquisition of PropX.

We purchase a wide variety of raw materials, parts and components that are manufactured and supplied for our operations. We are not dependent on any single source of supply for those parts, supplies or materials. To date, we have generally been able to obtain the equipment, parts and supplies necessary to support our operations, although we have experienced delivery delays and shortages on some items. 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, we may not always be able to do so. In addition, certain materials for which we do not currently have long-term supply agreements could experience shortages and significant price increases in the future. As a result, we may be unable to mitigate any future supply shortages and our results of operations, prospects and financial condition could be adversely affected. The OneStim Acquisition included two state-of-the-art sand mines in the Permian Basin, which helps alleviate the risk of proppant supply shortages.

Competition

The markets in which we operate are highly competitive. We provide services in various geographic regions across the United States and Canada, and our competitors include many large and small oilfield service providers, including some of the largest integrated service companies. Our hydraulic fracturing services compete with large, integrated companies such as Halliburton Company as well as other companies including Calfrac Well Services Ltd., FTS International, Inc., NexTier Oilfield Solutions Inc., Universal Pressure Pumping, Inc., ProPetro Services, Inc., RPC, Inc., STEP Energy Services and U.S. Well Services, Inc. In addition, our industry is highly fragmented and we compete regionally with a significant number of smaller service providers.

We believe that the principal competitive factors in the markets we serve are technical expertise, equipment capacity, work force competency, efficiency, safety record, reputation, experience and price. Additionally, projects are often awarded on a bid basis, which tends to create a highly competitive environment. We seek to differentiate ourselves from our competitors by delivering the highest-quality services and equipment possible, coupled with superior execution and operating efficiency in a safe working environment.

Available Information

We file or furnish annual, quarterly and current reports, proxy statements and other documents with the SEC under the Exchange Act. The SEC also maintains an internet website at www.sec.gov that contains reports, proxy and information statements and other information regarding issuers, including us, that file electronically with the SEC.

We also make available free of charge through our website, www.libertyfrac.com, electronic copies of certain documents that we file with the SEC, including our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC.

Item 1A. Risk Factors

Described below are certain risks that we believe apply to our business and the industry in which we operate. You should carefully consider each of the risks described below in conjunction with other information including the financial statements and related notes provided in this Annual Report and in our other public disclosures. The risks described below highlight potential events, trends or other circumstances that could adversely affect our business, financial condition, results of operations, cash flows, liquidity or access to sources of financing, and consequently, the market value of our Class A Common Stock. These risks could cause our future results to differ materially from historical results and from guidance we may provide regarding our expectations of future financial performance. The risks described below are those that we have identified as material and is not an exhaustive list of all the risks we face. There may be other risks and uncertainties not currently known to us or that we currently deem to be immaterial which may also materially and adversely affect our business operations in the future. Please refer to the explanation of the qualifications and limitation on forward-looking statements set forth on page ii hereof.

Risks Related to the COVID-19 Pandemic

The COVID-19 pandemic significantly reduced demand for our services, and had, and may in the future have, a material adverse effect on our operations, business and financial results.

We face risks related to public health crises, including the ongoing COVID-19 pandemic. Many of the COVID-19 precautions taken by governments and businesses, including travel bans, prohibitions on group events and gatherings, shutdowns of certain businesses, curfews and shelter-in-place orders that were enacted in 2020 have been lifted or reduced. However, during 2020 these actions resulted in a significant and swift reduction in international and U.S. economic activity. The collapse in the demand for oil during 2020 caused by this unprecedented global health and economic crisis, coupled with an oil oversupply, had a material adverse impact on the demand for our services and on our financial condition, results of operations and cash flows. Additionally, the COVID-19 pandemic could worsen despite the increased availability of vaccines in certain jurisdictions, including as a result of the emergence of more infectious strains of the virus, vaccine hesitancy or increased business and social activities, which may cause governmental authorities to reconsider restrictions on business and social activities.

We are closely monitoring the continuing effects of the pandemic on our customers, operations, and employees. During 2021, oil demand and the demand for our services recovered from the lows experienced during the onset of the pandemic. The extent to which our operating and financial results will be affected by COVID-19 in the future will depend on various factors and consequences, such as the ultimate duration and scope of the pandemic, any additional actions by businesses and governments in response to the pandemic, and the speed and effectiveness of responses to combat the virus. COVID-19, and the volatile regional and global economic conditions stemming from the pandemic, could also aggravate the other risk factors that we identify herein. COVID-19 may also materially adversely affect our operating and financial results in a manner that is not currently known to us or that we do not currently consider presenting significant risks to us.

We cannot predict the ultimate duration or scope of the COVID-19 pandemic. Accordingly, if the pandemic worsens or if actions taken by governments and businesses in response to the pandemic in 2020 are re-enacted, the demand for our services may fall again, which would have a material adverse impact on our financial condition, results of operations and cash flows.

Potential future vaccine mandates for employers could have a material adverse impact on our business and results of operations.

On September 9, 2021, President Biden announced plans for the federal Occupational Safety and Health Administration ("OSHA") to issue an Emergency Temporary Standard ("ETS") mandating that all employers with more than 100 employees ensure their workers are either fully vaccinated against COVID-19 or produce, on a weekly basis, a negative COVID-19 test (the "Vaccine Mandate"). OSHA issued the ETS on November 4, 2021, requiring covered employers to comply with the Vaccine Mandate beginning with January 4, 2022 or face substantial penalties for non-compliance. The U.S. Supreme Court issued a stay on the Vaccine Mandate on January 13, 2022, and OSHA thereafter withdrew the ETS. It is possible that future vaccine mandates may be announced by the federal, state or local jurisdictions in which we operate. Although it is not possible to predict with certainty the impact of these measures on our business and workforce, these requirements may result in attrition, including attrition of skilled labor, and difficulty securing future labor needs, which could have a material adverse effect on our business, financial condition and results of operations.

Risks Related to the OneStim Acquisition

The Company's results may suffer if it does not effectively manage its expanded operations following the OneStim Acquisition.

Since the OneStim Acquisition, the size of the Company’s business has increased significantly. In addition, we now own and operate two sand mines. While we have retained qualified personnel to operate the mines, we have not undertaken mining operations in the past. The Company’s future success will depend, in part, on the Company’s ability to manage this expanded business, which poses numerous risks and uncertainties.

The Schlumberger Parties have significant influence over us.

As of February 18, 2022, Schlumberger owned approximately 30.5% of the outstanding shares of Common Stock. As long as Schlumberger owns or controls a significant percentage of the Company’s outstanding voting power, they will have the ability to significantly influence corporate actions requiring stockholder approval, including the election and removal of directors, any amendment to the Company’s certificate of incorporation or bylaws, or the approval of any merger or other significant corporate transaction, including a sale of substantially all of the Company’s assets. Schlumberger’s influence over our management could have the effect of delaying or preventing a change in control or otherwise discouraging a potential acquirer from attempting to obtain control of us, which could cause the market price of the shares of Class A Common Stock to decline or prevent stockholders from realizing a premium over the market price for the shares of Class A Common Stock.

Pursuant to the Amended and Restated Stockholders Agreement, dated as of December 13, 2020, Schlumberger has designated two directors to the Company’s board of directors. Schlumberger’s right to designate directors to our Board is subject to the Schlumberger’s ownership percentage of the total outstanding shares of Common Stock. If Schlumberger and its affiliates collectively beneficially own: (a) 20% or greater of the outstanding shares of Common Stock, they will have the right to appoint two directors or (b) at least 10% but less than 20% of the outstanding shares of Common Stock, they will have the right to appoint one director.

Schlumberger’s interests may not align with the Company’s interests or the interests of the Company’s other stockholders.

Following the OneStim Acquisition, we expanded our operations to Canada and may be subject to increased business and economic risks.

The Company has historically owned and operated its assets exclusively within the United States. In connection with the OneStim Acquisition, we acquired certain Canadian assets and liabilities, which marked our entry into a new geographical territory where we had limited experience in owning and operating assets and providing our services. As a result, we are subject to a variety of risks inherent in doing business internationally, including: risks related to the legal and regulatory environment in foreign jurisdictions; fluctuations in currency exchange rates; complying with multiple tax jurisdictions; difficulties in staffing and managing international operations and the increased travel, infrastructure and compliance costs associated with international locations and employees; regulations that might add difficulties in repatriating cash earned outside the United States and otherwise preventing us from freely moving cash; complying with statutory equity requirements; and complying with the U.S. Foreign Corrupt Practices Act and the *Corruption of Foreign Public Officials Act* (Canada) and other similar laws in Canada. If we fail to manage our operations in Canada successfully, our business may suffer.

Risks Related to the Oil and Natural Gas Industry

Federal, state, local and other applicable legislative and regulatory initiatives relating to hydraulic fracturing may serve to limit future oil and natural gas E&P activities and could have a material adverse effect on our results of operations and business.

Various federal, state, local and other applicable legislative and regulatory initiatives have been, or could be undertaken which could result in additional requirements or restrictions being imposed on hydraulic fracturing operations. Currently, hydraulic fracturing is generally exempt from federal regulation under the Safe Drinking Water Act Underground Injection Control (the "SDWA UIC") program and is typically regulated by state oil and gas commissions or similar agencies but increased scrutiny and regulation, by federal agencies does occur. For example, in late 2016, the EPA released a final report on the potential impacts of hydraulic fracturing on drinking water resources, concluding that "water cycle" activities associated with hydraulic fracturing may impact drinking water resources. Additionally, the EPA has asserted regulatory authority pursuant to the SDWA UIC program over hydraulic fracturing activities involving the use of diesel fuel in the fracturing fluid and issued guidance regarding the permitting of such activities. Furthermore, the U.S. Bureau of Land Management has previously published rules that established stringent standards relating to hydraulic fracturing on federal and Native American lands. Similarly, the EPA has adopted rules on the capture of methane and other emissions released during hydraulic fracturing. These rules have been the subject of ongoing legal challenges. In January 2021, President Biden issued an executive order that called for issuance of proposed rules by no later than September 2021 that would restore rules for methane standards applicable to new, modified, and reconstructed sources and establish new methane and volatile organic compound standards applicable to existing oil and gas operations, including the production, transmission, processing and storage segments. On November 2021, the EPA proposed such a rule. Such a rule could make it significantly more difficult and/or costly to drill and operate oil and gas wells. As a result, such rule, if adopted, could result in a decline in the completion of new oil and gas wells or the recompletion of existing wells, which could negatively impact the drilling programs of our customers and, consequently, delay, limit or reduce the demand for our services. In addition to federal regulatory actions, legislation has been introduced, but not enacted, in Congress to provide for further federal regulation of hydraulic fracturing and to require disclosure of the chemicals used in the hydraulic fracturing process.

Moreover, many states and local governments have adopted regulations that impose more stringent permitting, disclosure, disposal and well-construction requirements on hydraulic fracturing operations, including states where we or our customers operate, such as Texas, Colorado and North Dakota. States could also elect to place prohibitions on hydraulic fracturing, as several states have already done. In addition, some states have adopted broader sets of requirements related to oil and gas development more generally that could impact hydraulic fracturing activities. For example, in 2019 the Colorado legislature adopted SB 19-181, which gave greater regulatory authority to local jurisdictions and reoriented the mandate of the Colorado Oil and Gas Conservation Commission to place more emphasis on the protection of human health and the environment. In response, a reconstituted Colorado Oil and Gas Conservation Commission modified its rules to address the requirements of the legislation, adopting increased setback requirements, provisions for assessing alternative sites for well pads to minimize environmental impacts, and consideration to cumulative impacts, among other provisions. Environmental groups, local citizens groups and others continue to seek to use a variety of means to force action on additional restrictions on hydraulic fracturing and oil and gas development generally.

Additionally, in July 2021, a non-governmental organization issued a report that raised concerns that chemicals used in hydraulic fracturing could be within the class of chemicals known as per- and polyfluoroalkylated substances ("PFAS") or precursors to such substances. PFAS is the subject of intense federal and state regulatory scrutiny. Should PFAS be in hydraulic fracturing chemicals, this could open up a new front for the regulation of hydraulic fracturing.

Some states in which we operate require the disclosure of some or all of the chemicals used in our hydraulic fracturing operations. Certain aspects of one or more of these chemicals may be considered proprietary by us or our chemical suppliers. Disclosure of our proprietary chemical information to third parties or to the public, even if inadvertent, could diminish the value of our trade secrets or those of the chemicals suppliers and could result in competitive harm to us, which could have an adverse impact on our business, financial condition, prospects and results of operations.

In recent years, there have been allegations that hydraulic fracturing may result in seismic activities. Although the extent of any correlation between hydraulic fracturing and seismic activity has been and remains the subject of studies and debate, some parties believe that there is a causal relationship. As a result, federal and state legislatures and agencies may seek to further regulate, restrict or prohibit hydraulic fracturing. Such actions could result in a decline in the completion of new oil and gas wells, which could negatively impact the drilling programs of our customers and, consequently, delay, limit or reduce the demand for our services.

Increased regulation and attention given to the hydraulic fracturing process could lead to greater opposition to, and litigation concerning, oil and natural gas production activities using hydraulic fracturing techniques. Additional legislation or regulation could also lead to operational delays for our customers or increased operating costs in the production of oil and natural gas, including from the developing shale plays, or could make it more difficult for (or could result in a prohibition for) us and our customers to perform hydraulic fracturing. The adoption of any additional laws or regulations regarding hydraulic fracturing or limitation in hydraulic fracturing could potentially cause a decrease in the completion of new oil and natural gas wells and an associated decrease in demand for our services and increased compliance costs and time. Such events could have a material adverse effect on our liquidity, consolidated results of operations, and consolidated financial condition.

Additionally, in January 2021, the U.S. Department of the Interior issued an order that effectively suspends new oil and gas leases and drilling permits on non-Indian federal lands and waters for a period of 60 days, but the suspension does not limit existing operations under valid leases. President Biden followed with an executive order that ordered the Secretary of the Interior to pause the issuance of new oil and gas leases on federal public lands and offshore waters pending completion of a comprehensive review of federal oil and gas permitting and leasing practices that take into consideration potential climate and other impacts associated with oil and gas activities. This order further directs agencies to identify fossil fuel subsidies provided by such agencies and take measures to ensure that federal funding is not directly subsidizing fossil fuels, with an objective of eliminating fossil fuel subsidies from federal budget requests beginning in 2022. This order is currently being challenged in court by industry groups.

Additional legislation, executive actions, regulations or other regulatory initiatives to limit, delay or prohibit hydraulic fracturing or other aspects of oil and gas development may be pursued. In the event that these or other new federal restrictions, delays or prohibitions relating to the hydraulic fracturing process are adopted in areas where we or our customers conduct business, we or our customers may incur additional costs or permitting requirements to comply with such federal requirements that may be significant and, in the case of our customers, also could result in added restrictions or delays in the pursuit of exploration, development, or production activities, which would in turn reduce the demand for our services and have a material adverse effect on our results of operations.

Our business depends on domestic capital spending by the oil and natural gas industry, and reductions in capital spending could have a material adverse effect on our liquidity, results of operations and financial condition.

Our business is directly affected by our customers' capital spending to explore for, develop and produce oil and natural gas in the United States and Canada. In addition, certain of our customers could become unable to pay their vendors and service providers, including us, as a result of a decline in commodity prices. Reduced discovery rates of new oil and natural gas reserves in our areas of operation as a result of decreased capital spending may also have a negative long-term impact on our business, even in an environment of stronger oil and natural gas prices. Any of these conditions or events could adversely affect our operating results. If current activity levels decrease or our customers further reduce their capital spending, it could have a material adverse effect on our liquidity, results of operations and financial condition.

Industry conditions are influenced by numerous factors over which we have no control, including:

- expected economic returns to E&P companies of new well completions;
- domestic and foreign economic conditions and supply of and demand for oil and natural gas;
- the level of prices, and expectations about future prices, of oil and natural gas;
- the level of global oil and natural gas exploration and production;
- the level of domestic and global oil and natural gas inventories;
- the supply of and demand for hydraulic fracturing services and equipment in the United States and Canada;
- federal, tribal, state and local laws, regulations and taxes, including the policies of governments regarding hydraulic fracturing, oil and natural gas exploration, development and production activities and the transportation of oil and gas by pipeline, as well as non-U.S. governmental regulations and taxes;
- governmental regulations, including the policies of governments regarding the exploration for and production and development of their oil and natural gas reserves;
- political and economic conditions in oil and natural gas producing countries;
- actions by the members of the Organization of Petroleum Exporting Countries and other oil exporting nations with respect to oil production levels and potential changes in such levels;
- global weather conditions and natural disasters;
- worldwide political, military and economic conditions;
- the cost of producing and delivering oil and natural gas;
- lead times associated with acquiring equipment and products and availability of qualified personnel;
- the discovery rates of new oil and natural gas reserves;
- the production decline rate of existing oil and gas wells;
- stockholder activism or activities by non-governmental organizations to limit certain sources of funding for the energy sector or to restrict the exploration, development, production and transportation of oil and natural gas;
- the availability of water resources, suitable proppant and chemical additives in sufficient quantities for use in hydraulic fracturing fluids;

- advances in exploration, development and production technologies or in technologies affecting energy consumption;
- the availability, proximity and capacity of oil and natural gas pipelines and other transportation facilities;
- merger and divestiture activity among oil and natural gas producers;
- the price and availability of alternative fuels and energy sources; and
- uncertainty in capital and commodities markets and the ability of oil and natural gas companies to raise equity capital and debt financing.

The volatility of oil and natural gas prices may adversely affect the demand for our hydraulic fracturing services and negatively impact our results of operations.

The demand for our hydraulic fracturing services is primarily determined by current and anticipated oil and natural gas prices and the related levels of capital spending and drilling activity in the areas in which we have operations. Volatility or weakness in oil prices or natural gas prices (or the perception that oil prices or natural gas prices will decrease) affects the spending patterns of our customers and may result in the drilling of fewer new wells. This, in turn, could lead to lower demand for our services and may cause lower utilization of our assets. We have experienced, and may in the future experience significant fluctuations in operating results as a result of the reactions of our customers to changes in oil and natural gas prices.

Prices for oil and natural gas historically have been extremely volatile and are expected to continue to be volatile. During the year 2021, the posted WTI price traded at an average of $68.13 per barrel ("Bbl"), as compared to the 2020 average of $39.16 per Bbl and the 2019 average of $56.99 per Bbl. The combined impact of the COVID-19 pandemic and the breakdown of OPEC+ production cut negotiations in Spring 2020 caused oil prices to drop to historical lows in April 2020. During the fourth quarter of 2021, WTI oil prices averaged $77.33 compared to $70.58 in the third quarter of 2021 and $42.52 in the fourth quarter of 2020. If the prices of oil and natural gas remain or become more volatile, our operations, financial condition, cash flows and level of expenditures may be materially and adversely affected.

Delays or restrictions in obtaining permits by us for our operations or by our customers for their operations could impair our business.

In most states, our operations and the operations of our oil and natural gas producing customers require permits from one or more governmental agencies in order to perform drilling and completion activities, secure water rights, or other regulated activities. Such permits are typically issued by state agencies, but federal and local governmental permits may also be required. The requirements for such permits vary depending on the location where such regulated activities will be conducted. As with all governmental permitting processes, there is a degree of uncertainty as to whether a permit will be granted, the time it will take for a permit to be issued, and the conditions that may be imposed in connection with the granting of the permit. In addition, some of our customers' drilling and completion activities may take place on federal land or Native American lands, requiring leases and other approvals from the federal government or Native American tribes to conduct such drilling and completion activities or other regulated activities. Under certain circumstances, federal agencies may cancel proposed leases for federal lands and refuse to grant or delay required approvals. Therefore, our customers' operations in certain areas may be interrupted or suspended for varying lengths of time, causing a loss of revenue to us and adversely affecting our results of operations in support of those customers. In January 2021, the U.S. Department of the Interior issued an order that effectively suspends new oil and gas leases and drilling permits on non-Indian federal lands and waters for a period of 60 days, but the suspension does not limit existing operations under valid leases. President Biden followed with an executive order that ordered the Secretary of the Interior to pause the issuance of new oil and gas leases on federal public lands and offshore waters pending completion of a comprehensive review of federal oil and gas permitting and leasing practices that take into consideration potential climate and other impacts associated with oil and gas activities. This order further directs agencies to identify fossil fuel subsidies provided by such agencies and take measures to ensure that federal funding is not directly subsidizing fossil fuels, with an objective of eliminating fossil fuel subsidies from federal budget requests beginning in 2022. This order is currently being challenged by industry groups.

Oil and natural gas companies' operations using hydraulic fracturing are substantially dependent on the availability of water. Restrictions on the ability to obtain water for E&P activities and the disposal of flowback and produced water may impact their operations and have a corresponding adverse effect on our business, results of operations and financial condition.

Water is an essential component of shale oil and natural gas production during both the drilling and hydraulic fracturing processes. Our oil and natural gas producing customers' access to water to be used in these processes may be adversely affected due to reasons such as periods of extended drought, privatization, third party competition for water in localized areas or the implementation of local or state governmental programs to monitor or restrict the beneficial use of water subject to their jurisdiction for hydraulic fracturing to assure adequate local water supplies. The occurrence of these or similar developments may result in limitations being placed on allocations of water due to needs by third party businesses with more senior contractual or permitting rights to the water. Our customers' inability to locate or contractually acquire and sustain the receipt of sufficient amounts of water could adversely impact their E&P operations and have a corresponding adverse effect on our business, results of operations and financial condition.

Moreover, the imposition of new environmental regulations and other regulatory initiatives could include increased restrictions on our producing customers' ability to dispose of flowback and produced water generated in hydraulic fracturing or other fluids resulting from E&P activities. Applicable laws impose restrictions and strict controls regarding the discharge of pollutants into waters of the United States and require that permits or other approvals be obtained to discharge pollutants to such waters. Additionally, in 2016 EPA engaged a pretreatment standard that prohibits the discharge of wastewater pollutants from onshore unconventional oil and gas extraction facilities to publicly owned treatment works. Further, regulations implemented under both federal and state laws prohibit the discharge of produced water and sand, drilling fluids, drill cuttings and certain other substances related to the natural gas and oil industry into coastal waters. These laws provide for civil, criminal and administrative penalties for any unauthorized discharges of pollutants and unauthorized discharges of reportable quantities of oil and hazardous substances. Compliance with current and future environmental regulations and permit requirements governing the withdrawal, storage and use of surface water or groundwater necessary for hydraulic fracturing of wells and any inability to secure transportation and access to disposal wells with sufficient capacity to accept all of our flowback and produced water on economic terms may increase our customers' operating costs and could result in restrictions, delays, or cancellations of our customers' operations, the extent of which cannot be predicted.

Our operations are subject to risks associated with climate change and potential regulatory programs meant to address climate change; these programs may impact or limit our business plans, result in significant expenditures or reduce demand for our services and reduce our revenues.

Climate change continues to be the focus of political and societal attention. Numerous proposals have been made and are likely to be forthcoming on the international, national, regional, state and local levels to reduce GHG emissions. These efforts have included or may include cap-and-trade programs, carbon taxes, GHG reporting obligations and other regulatory programs that limit or require control of GHG's from certain sources. Upon taking office, President Biden issued several Executive Orders relating climate change, envisioning a "government-wide approach" to climate policy. At the 26th Conference of the Parties of the United Nations Framework Convention on Climate Change held in October and November 2021, President Biden announced a commitment to significantly reduce GHG's and transition the U.S. economy to net-zero carbon by 2050. Programs addressing climate change may limit the ability to produce crude oil and natural gas, require stricter limits on the release of methane or other GHGs, increase reporting and/or other compliance obligations associated with GHG emissions, limit the ability to explore in new areas, limit the construction of pipelines and related equipment or may make it more expensive to produce, any of which may decrease the demand for our services and our revenues. Related, President Biden has called on OPEC+ to produce more oil, which if heeded could result in lower oil and gas prices and lower domestic production. As of February 2, 2022, OPEC+ authorized a 400,000-barrel-per-day increase for March 2022.

Incentives to conserve energy or use alternative energy sources, which can be part of climate change programs, may increase the competitiveness of alternative energy sources (such as wind, solar, geothermal, tidal and biofuels) or increase the focus on reducing the use of combustion engines in transportation (such as governmental mandates that ban the sale of new gasoline-powered automobiles). These actions could, in turn, reduce demand for hydrocarbons and therefore for our services, which would lead to a reduction in our revenues.

An increased societal and governmental focus on ESG and climate change issues may adversely impact our business, impact our access to investors and financing, and decrease demand for our services.

An increased expectation that companies address environmental (including climate change), social and governance ("ESG") matters may have a myriad of impacts on our business. Some investors and lenders are factoring these issues into investment and financing decisions. They may rely upon companies that assign ratings to a company's ESG performance. Unfavorable ESG ratings, as well as recent activism around fossil fuels, may dissuade investors or lenders from us and toward other industries, which could negatively impact our stock price or our access to capital. Additionally, some potential sources of investment or financing have announced an intention to avoid or limit investment in companies that engage in hydraulic fracturing. For example, in 2020, Deutsche Bank announced that it would no longer finance oil and gas projects that use hydraulic fracturing in countries with scarce water supplies, and BlackRock affirmed its commitment to divest from investments in fossil fuels due to concerns over climate change. In 2021, BlackRock announced a continuing commitment to the goal of net zero GHG emissions by 2050 or sooner, and noted that key actions for 2021 included asking companies to disclose a business plan aligned with the goal of achieving net zero global GHG emissions by 2050 and using "investment stewardship" to ensure companies its clients invest in are mitigating climate risk and considering opportunities presented by the net zero transition. While a substantial number of major banks and financing sources remain active in investments related to hydraulic fracturing, it is possible that the investment avoidance or limitation theme could expand in the future and restrict access to capital for companies like us.

Moreover, while we have and may continue to create and publish voluntary disclosures regarding ESG matters from time to time, many of the statements in those voluntary disclosures are based on hypothetical expectations and assumptions that may or may not be representative of current or actual risks or events or forecasts of expected risks or events, including the costs associated therewith. Such expectations and assumptions are necessarily uncertain and may be prone to error or subject to misinterpretation given the long timelines involved and the lack of an established single approach to identifying, measuring and reporting on many ESG matters.

In addition, ESG and climate change issues may cause consumer preference to shift toward other alternative sources of energy, lowering demand for oil and natural gas and consequently lowering demand for our services. In some areas these concerns have caused governments to adopt or consider adopting regulations to transition to a lower-carbon economy. These measures may include adoption of cap-and-trade programs, carbon taxes, increased efficiency standards, prohibitions on the manufacture of certain types of equipment (such as new automobiles with internal combustion engines), and requirements for the use of alternate energy sources such as wind or solar. These types of programs may reduce the demand for oil and natural gas and consequently the demand for our services.

Approaches to climate change and a transition to a lower-carbon economy, including government regulation, company policies, and consumer behavior, are continuously evolving. At this time, we cannot predict how such approaches may develop or otherwise reasonably or reliably estimate their impact on our financial condition, results of operations and ability to compete. However, any long-term material adverse effect on the oil and gas industry may adversely affect our financial condition, results of operations and cash flows.

Our operations are subject to significant risks, some of which are beyond our control. These risks may be self-insured, or may not be fully covered under our insurance policies.

Our operations are subject to significant hazards often found in the oil and natural gas industry, such as, but not limited to, accidents, including accidents related to trucking operations provided in connection with our services, blowouts, explosions, craterings, fires, natural gas leaks, oil and produced water spills and releases of hydraulic fracturing fluids or other well fluids into the environment. These conditions can cause:

- disruption in operations;
- substantial repair or remediation costs;
- personal injury or loss of human life;
- significant damage to or destruction of property, and equipment;
- environmental pollution, including groundwater contamination;
- unusual or unexpected geological formations or pressures and industrial accidents;
- impairment or suspension of operations; and
- substantial revenue loss.

In addition, our operations are subject to, and exposed to, employee/employer liabilities and risks such as wrongful termination, discrimination, labor organizing, retaliation claims and general human resource related matters.

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 liquidity, consolidated results of operations and financial condition. Claims for loss of oil and natural gas production and damage to formations can occur in the well services industry. Litigation arising from a catastrophic occurrence at a location where our equipment and services are being used or trucking services provided in connection therewith may result in our being named as a defendant in lawsuits asserting large claims.

We do not have insurance against all foreseeable risks, either because insurance is not available or because of the high premium costs. 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, or insurance premiums or other costs could rise significantly in the future so as to make such insurance prohibitively expensive.

We could experience continued or increased severity of trucking related issues or trucking accidents, which could materially affect our results of operations.

Trucking services can be adversely impacted by traffic congestion, shortage of drivers and weather delays which could hinder our service levels. During 2021 and into 2022 there has been a shortage of available trucking services in the United States due to the industry not having enough qualified drivers, which has impacted our field operations at times. In addition, our field employees are generally required to have a commercial driver’s license (“CDL”) so they can drive trucks and move our frac pumps and other equipment from location to location. Obtaining employees with CDLs can be challenging during times when the trucking industry has driver shortages, as competition for qualified employees is often more intense. If we are unable to obtain trucking services on a timely basis or the services of a sufficient number of field employees with CDLs, it could have a material adverse impact on our financial condition, results of operations and cash flows.

In addition, potential liability and unfavorable publicity associated with accidents in the trucking industry can be severe and occurrences are unpredictable. The number and severity of litigation claims may be worsened by distracted driving by both truck drivers and other motorists. Our transportation operations often involve traveling on unpaved roads located in rural areas, increasing the risk of accidents. If we are involved in an accident involving hazardous substances, if there are releases of hazardous substances we transport, if soil or groundwater contamination is found at our facilities or results from our operations, or if we are found to be in violation of applicable environmental laws or regulations, we could owe cleanup costs and incur related liabilities, including substantial fines or penalties or civil and criminal liability. A material increase in the frequency or severity of accidents or workers' compensation claims or the unfavorable development of existing claims could materially adversely affect our results of operations. In the event that accidents occur, we may be unable to obtain desired contractual indemnities, and our insurance may be inadequate in certain cases which could result in substantial losses. Any such lawsuits in the future may result in the payment of substantial settlements or damages and increases to our insurance costs.

We may be subject to claims for personal injury and property damage, which could materially adversely affect our financial condition, prospects and results of operations.

Our services are subject to inherent risks that can cause personal injury or loss of life, damage to or destruction of property, equipment or the environment or the suspension of our operations. Litigation arising from operations where our services are provided, may cause us to be named as a defendant in lawsuits asserting potentially large claims including claims for exemplary damages. We maintain what we believe is customary and reasonable insurance to protect our business against these potential losses, but such insurance may not be adequate to cover our liabilities, and we are not fully insured against all risks.

In addition, our customers usually assume responsibility for, including control and removal of, all other pollution or contamination which may occur during operations, including that which may result from seepage or any other uncontrolled flow of drilling and completion fluids. We may have liability in such cases if we are grossly negligent or commit willful acts. Our customers generally agree to indemnify us against claims arising from their employees' personal injury or death to the extent that, in the case of our hydraulic fracturing operations, their employees are injured by such operations, unless resulting from our gross negligence or willful misconduct. Our customers also generally agree to indemnify us for loss or destruction of customer-owned property or equipment. In turn, we agree to indemnify our customers for loss or destruction of property or equipment we own and for liabilities arising from personal injury to or death of any of our employees, unless resulting from gross negligence or willful misconduct of the customer. However, we might not succeed in enforcing such contractual liability allocation or might incur an unforeseen liability falling outside the scope of such allocation. As a result, we may incur substantial losses which could materially and adversely affect our financial condition and results of operation.

We are subject to environmental and occupational health and safety laws and regulations that may expose us to significant costs and liabilities.

Our operations and the operations of our customers are subject to numerous federal, tribal, regional, state and local laws and regulations relating to protection of the environment including natural resources, health and safety aspects of our operations and waste management, including the transportation and disposal of waste and other materials. These laws and regulations may impose numerous obligations on our operations and the operations of our customers, including the acquisition of permits or other approvals to conduct regulated activities, the imposition of restrictions on the types, quantities and concentrations of various substances that may be released into the environment or injected in non-productive formations below ground in connection with oil and natural gas drilling and production activities, the incurrence of capital expenditures to mitigate or prevent releases of materials from our equipment, facilities or from customer locations where we are providing services, the imposition of substantial liabilities for pollution resulting from our operations, and the application of specific health and safety criteria addressing worker protection. Any failure on our part or the part of our customers to comply with these laws and regulations could result in assessment of sanctions including administrative, civil and criminal penalties; imposition of investigatory, remedial or corrective action obligations or the incurrence of capital expenditures; the occurrence of restrictions, delays or cancellations in the permitting, performance or development of projects or operations; and the issuance of orders enjoining performance of some or all of our operations in a particular area. In addition to civil and other penalties associated with enforcement activities regarding compliance with occupational health and safety laws, our operations may be subject to abatement obligations that could require significant modifications to existing operations to achieve compliance.

Our business activities present risks of incurring significant environmental costs and liabilities, including costs and liabilities resulting from our handling of oilfield and other wastes, because of air emissions and wastewater discharges related to our operations, and due to historical oilfield industry operations and waste disposal practices. Moreover, accidental releases or spills may occur in the course of our operations or at facilities where our wastes are taken for reclamation or disposal, and we cannot assure you that we will not incur significant costs and liabilities as a result of such releases or spills, including any third-party claims for injuries to persons or damages to properties or natural resources. Some environmental laws and regulations may impose strict liability, which means that in some situations 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, prior operators or other third parties. Remedial and abatement costs and other damages arising as a result of environmental and occupational health and safety laws and costs associated with changes in these laws and regulations could be significant and have a material adverse effect on our liquidity, consolidated results of operations and financial condition.

Laws and regulations protecting the environment generally have become more stringent in recent years and are expected to continue to do so, which could lead to material increases in costs for future environmental compliance and remediation. In particular, the ESA restricts activities that may result in a "take" of endangered or threatened species and provides for substantial penalties in cases where listed species are taken by being harmed. The dunes sagebrush lizard is one example of a species that, if listed as endangered or threatened under the ESA, could impact our operations and the operations of our customers. The dunes sagebrush lizard is found in the active and semi-stable shinnery oak dunes of southeastern New Mexico and adjacent portions of Texas, including areas where our customers operate and our frac sand facilities are located. The FWS is currently conducting a review to determine whether listing the dunes sagebrush lizard as endangered or threatened under the ESA is warranted. In July 2020, the FWS published a 90-day finding that a 2018 petition seeking that the dunes sagebrush lizard be listed as endangered or threatened presented substantial evidence indicating that listing may be warranted. In November 2021, an environmental group filed a notice of intent to sue the U.S. Department of the Interior and the FWS for unlawfully delaying protection of the dunes sagebrush lizard and five other species. According to the petition, if a determination is not made by January 2022, the environmental group will file suit to enforce the ESA. If the dunes sagebrush lizard is listed as an endangered or threatened species, our operations and the operations of our customers in any area that is designated as the dunes sagebrush lizard's habitat may be limited, delayed or, in some circumstances, prohibited, and we and our customers could be required to comply with expensive mitigation measures intended to protect the dunes sagebrush lizard and its habitat. Furthermore, new laws and regulations, amendment of existing laws and regulations, reinterpretation of legal requirements or increased governmental enforcement with respect to environmental matters could restrict, delay or curtail exploratory or developmental drilling for oil and natural gas by our customers and could limit our well servicing opportunities.

Oilfield anti-indemnity provisions enacted by many states may restrict or prohibit a party's indemnification of us.

We typically enter into agreements with our customers governing the provision of our services, which usually include certain indemnification provisions for losses resulting from operations. Such agreements may require each party to indemnify the other against certain claims regardless of the negligence or other fault of the indemnified party; however, many states place limitations on contractual indemnity agreements, particularly agreements that indemnify a party against the consequences of its own negligence. Furthermore, certain states, including Texas, New Mexico and Wyoming, have enacted statutes generally referred to as "oilfield anti-indemnity acts" expressly prohibiting certain indemnity agreements contained in or related to oilfield services agreements. Such anti-indemnity acts may restrict or void a party's indemnification of us, which could have a material adverse effect on our business, financial condition, prospects and results of operations.

Technology advancements in well service technologies, including those involving hydraulic fracturing, could have a material adverse effect on our business, financial condition and results of operations.

The hydraulic fracturing industry is characterized by rapid and significant technological advancements and introductions of new products and services using new technologies. As competitors and others use or develop new technologies or technologies comparable to ours in the future, we may lose market share or be placed at a competitive disadvantage. Further, we may face competitive pressure to implement or acquire certain new technologies at a substantial cost. Some of our competitors may have greater financial, technical and personnel resources than we do, which may allow them to gain technological advantages or implement new technologies before we can. Additionally, we may be unable to implement new technologies or services at all, on a timely basis or at an acceptable cost. New technology could also make it easier for our customers to vertically integrate their operations, thereby reducing or eliminating the need for our services. Limits on our ability to effectively use or implement new technologies may have a material adverse effect on our business, financial condition and results of operations.

Risks Related to the TRAs

The Company is required to make payments under the TRAs for certain tax benefits that it may claim, and the amounts of such payments could be significant.

In connection with the Company's initial public offering (the "IPO"), on January 17, 2018, the Company entered into two Tax Receivable Agreements (the "TRAs") with R/C Energy IV Direction Partnership, L.P. and the then-existing owners of Liberty Oilfield Services Holdings LLC ("Liberty Holdings") that continued to own Liberty LLC Units (each such person and any permitted transferee, a "TRA Holder"). The TRAs generally provide for the payment by the Company to each TRA Holder of 85% of the net cash savings, if any, in U.S. federal, state, and local income tax and franchise tax (computed using simplifying assumptions to address the impact of state and local taxes) that the Company actually realizes (or is deemed to realize in certain circumstances) as a result of certain increases in tax basis, net operating losses available to the Company as a result of the corporate reorganization performed in connection with the IPO (the "Corporate Reorganization"), and certain benefits attributable to imputed interest. The Company will retain the benefit of the remaining 15% of these cash savings.

The Company is a holding company and has no material assets other than its equity interest in Liberty LLC. Because the Company has no independent means of generating revenue, its ability to make payments under the TRAs is dependent on the ability of Liberty LLC to make distributions to the Company in an amount sufficient to cover its obligations under the TRAs. To the extent that the Company is unable to make payments under the TRAs for any reason, such payments will be deferred and will accrue interest until paid.

The term of each of the TRAs continues until all tax benefits that are subject to such TRAs have been utilized or expired, unless the Company experiences a change of control (as defined in the TRAs, which includes certain mergers, asset sales and other forms of business combinations) or the TRAs are terminated early (at the Company's election or as a result of its breach), and the Company makes the termination payments specified in such TRAs. In addition, payments the Company makes under the TRAs will be increased by any interest earned from the due date (without extensions) of the corresponding tax return. Payments under the TRAs commenced in 2020 and so long as the tax savings are realized and the TRAs are not terminated, payments are anticipated to continue for 15 years after the date of the last redemption of the Liberty LLC Units. Accordingly, if the applicable U.S. federal corporate tax rate is increased, then the amount of TRA payments paid in the future may also increase.

In certain cases, if the Company experiences a change of control (as defined under the TRAs, which includes certain mergers, asset sales and other forms of business combinations) or the TRAs terminate early (at the Company's election or as a result of its breach), the Company would be required to make an immediate lump-sum payment, and such payment may be significantly in advance of, and may materially exceed, the actual realization, if any, of the future tax benefits to which the payment relates. As a result, the Company's obligations under the TRAs could have a substantial negative impact on its liquidity and could have the effect of delaying, deferring or preventing certain mergers, asset sales, or other forms of business combinations or changes of control. There can be no assurance that we will be able to finance our obligations under the TRAs. Furthermore, as a result of this payment obligation, holders of our Class A Common Stock could receive substantially less consideration in connection with a change in control transaction than they would receive in the absence of such obligation. Since our payment obligations under the TRAs will not be conditioned upon the TRA Holders' having continued interest in the Company or liberty LLC, the TRA Holders' interests may conflict with those of the holders of our Class A Common Stock.

Payments under the TRAs are based on the tax reporting positions that we will determine. The TRA Holders will not reimburse us for any payments previously made under the TRAs if any tax benefits that have given rise to payments under the TRAs are subsequently disallowed, except that excess payments made to any TRA Holder will be netted against payments that would otherwise be made to such TRA Holder, if any, after our determination of such excess. As a result, in such circumstances the Company could make payments that are greater than its actual cash tax savings, if any, and may not be able to recoup those payments, which could adversely affect the Company's liquidity. Furthermore, the payments under the TRAs will not be conditioned upon a holder of rights under each of the TRAs having a continued ownership interest in the Company or Liberty LLC. For further details of the TRAs, see Note 12—Income Taxes to the consolidated financial statements included in "Item 8. Financial Statements and Supplementary Data."

General Risks Related to our Business

We may be adversely affected by uncertainty in the global financial markets and the deterioration of the financial condition of our customers.

Our future results may be impacted by the uncertainty caused by an economic downturn, volatility or deterioration in the debt and equity capital markets, inflation, deflation or other adverse economic conditions that may negatively affect us or parties with whom we do business resulting in a reduction in our customers' spending and their non-payment or inability to perform obligations owed to us, such as the failure of customers to honor their commitments or the failure of major suppliers to complete orders. Additionally, during times when the oil or natural gas markets weaken, our customers are more likely to experience financial difficulties, including being unable to access debt or equity financing, which could result in a reduction in our customers' spending for our services. In addition, in the course of our business we hold accounts receivable from our customers. In the event of the financial distress or bankruptcy of a customer, we could lose all or a portion of such outstanding accounts receivable associated with that customer. Further, if a customer was to enter into bankruptcy, it could also result in the cancellation of all or a portion of our service contracts with such customer at significant expense or loss of expected revenues to us.

Reliance upon a few large customers may adversely affect our revenue and operating results.

Our top five customers represented approximately 27%, 48%, and 35%, of our consolidated revenue for the years ended December 31, 2021, 2020, and 2019, respectively. It is possible that we will derive a significant portion of our revenue from a concentrated group of customers in the future. If a major customer fails to pay us, revenue would be impacted and our operating results and financial condition could be materially harmed. Additionally, if we were to lose any material customer or our customers were to consolidate or merge with other operators, we may not be able to redeploy our equipment at similar utilization or pricing levels or within a short period of time and such loss could have a material adverse effect on our business until the equipment is redeployed at similar utilization or pricing levels.

We are subject to cyber security risks. A cyber incident could occur and result in information theft, data corruption, operational disruption and/or financial loss.

The oil and natural gas industry has become increasingly dependent on digital technologies to conduct certain processing activities. For example, we depend on digital technologies to perform many of our services and to process and record financial and operating data. At the same time, cyber incidents, including deliberate attacks, have increased. The U.S. government has issued public warnings that indicate that energy assets might be specific targets of cyber security threats. In early 2020, we experienced a denial of service cyberattack that targeted a portion of our non-financial data. We immediately shutdown critical systems, diagnosed the root cause of the attack and then methodically returned systems online. This cyberattack disrupted certain non-financial aspects of our internal system for a period of less than one day, while limited and non-critical portions of our systems were kept offline for up to one week in order to properly evaluate the breach. We determined that this cyberattack did not materially affect any of our operations. We engaged in extensive data evaluation for potential damage and concluded that minimal to no data loss had occurred as a result of this cyberattack. Our technologies, systems and networks, and those of our vendors, suppliers and other business partners, may become the target of cyberattacks or information security breaches in the future that could result in the unauthorized release, gathering, monitoring, misuse, loss or destruction of proprietary and other information, or other disruption of business operations. In addition, certain cyber incidents, such as surveillance, may remain undetected for an extended period. Our systems and insurance coverage for protecting against cyber security risks may not be sufficient. As cyber incidents continue to evolve, we will likely 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. Our insurance coverage for cyberattacks may not be sufficient to cover all the losses we may experience as a result of such cyberattacks.

Our assets require significant amounts of capital for maintenance, upgrades and refurbishment and may require significant capital expenditures for new equipment.

Our hydraulic fracturing fleets and other completion service-related equipment require significant capital investment in maintenance, upgrades and refurbishment to maintain their competitiveness. The costs of components and labor have increased in the past and may increase in the future with increases in demand, which will require us to incur additional costs for any fleets we may acquire in the future. Our fleets and other equipment typically do not generate revenue while they are undergoing maintenance, upgrades or refurbishment. Any maintenance, upgrade or refurbishment project for our assets could increase our indebtedness or reduce cash available for other opportunities. Furthermore, such projects may require proportionally greater capital investments as a percentage of total asset value, which may make such projects difficult to finance on acceptable terms. To the extent we are unable to fund such projects, we may have less equipment available for service or our equipment may not be attractive to potential or current customers. 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 hydraulic fracturing 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, liquidity position, financial condition, prospects and results of operations and may increase our costs.

We rely on certain third parties for materials, and delays in deliveries of such materials, increases in the cost of such materials or our contractual obligations to pay for materials that we ultimately do not require could harm our business, results of operations and financial condition.

We have established relationships with certain suppliers of our materials (such as, but not limited to, proppant and chemical additives) and other parts, supplies and items needed for our operations. Delays or shortages in materials can result from a variety of reasons, including those caused by weather and natural disasters. Presently, the United States is undergoing a supply chain disruption due to backlogged ports and trucking shortages, and our business is not immune from these effects. Even once the root cause of the supply chain disruption or any future shortage or delay has passed, it can take time for our supply chain to recover and run in a regular fashion. Should the nationwide supply chain disruption continue, or should any of our current suppliers be unable to provide the necessary materials or otherwise fail to deliver the materials in a timely manner and in the quantities required, any resulting delays in the provision of services could have a material adverse effect on our business, results of operations and financial condition. Additionally, increasing costs of such materials may negatively impact demand for our services or the profitability of our business operations. In the past, our industry faced sporadic proppant shortages associated with hydraulic fracturing operations requiring work stoppages, which are believed to have adversely impacted the operating results of several competitors. We may not be able to mitigate any future shortages of materials, including proppant, or the impact of supply chain disruptions. Furthermore, to the extent our contracts require us to purchase more materials, including proppant, than we ultimately require, we may be forced to pay for the excess amount under “take or pay” contract provisions.

We currently utilize two preferred assemblers and a limited number of suppliers for major equipment to both build new fleets and upgrade any fleets we acquire to our preferred specifications, and our reliance on these vendors exposes us to risks including price and timing of delivery.

We currently utilize two preferred assemblers and a limited number of suppliers for major equipment to both build our new fleets and upgrade any fleets we may acquire to our custom design. If demand for hydraulic fracturing fleets or the components necessary to build such fleets increases or these vendors face financial distress or bankruptcy, these vendors may not be able to provide the new or upgraded fleets on schedule or at the current price. If this were to occur, we could be required to seek another assembler or other suppliers for major equipment to build or upgrade our fleets, which may adversely affect our revenues or increase our costs.

Interruptions of service on the rail lines by which we receive proppant could adversely affect our results of operations.

We receive a portion of the proppant used in our hydraulic fracturing services by rail. Rail operations are subject to various risks that may result in a delay or lack of service, including lack of available capacity, mechanical problems, extreme weather conditions, work stoppages, labor strikes, terrorist attacks and operating hazards. Additionally, if we increase the amount of proppant we require for delivery of our services, we may face difficulty in securing rail transportation for such additional amount of proppant. Any delay or failure in the rail services on which we rely could have a material adverse effect on our financial condition and results of operations.

Changes in transportation regulations may increase our costs and negatively impact our results of operations.

We are subject to various transportation regulations including as a motor carrier by the Department of Transportation and by various federal, state, provincial and tribal agencies, whose regulations include certain permit requirements of highway and safety authorities. These regulatory authorities exercise broad powers over our equipment transportation operations, generally governing such matters as the authorization to engage in motor carrier operations, safety, equipment testing, driver requirements and specifications and insurance requirements. The trucking industry is subject to possible regulatory and legislative changes that may impact our operations, such as changes in fuel emissions limits, hours of service regulations that govern the amount of time a driver may drive or work in any specific period and requiring onboard electronic logging devices or limits on vehicle weight and size. As the federal government continues to develop and propose regulations relating to fuel quality, engine efficiency and greenhouse gasses emissions, we may experience an increase in costs related to truck purchases and maintenance, impairment of equipment productivity, a decrease in the residual value of vehicles, unpredictable fluctuations in fuel prices and an increase in operating expenses. Additionally, we rely on third parties to provide trucking services, including hauling proppant to our customer work sites, and these third parties may fail to comply with various transportation regulations, resulting in our inability to use such third party providers. Increased truck traffic may contribute to deteriorating road conditions in some areas where our operations are performed. Our operations, including routing and weight restrictions, could be affected by road construction, road repairs, detours and state and local regulations and ordinances restricting access to certain roads. Proposals to increase federal, state, provincial or local taxes, including taxes on motor fuels, are also made from time to time, and any such increase would increase our operating costs. Also, state and local regulation of permitted routes and times on specific roadways could adversely affect our operations. 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.

Our current and future indebtedness could adversely affect our financial condition.

As of February 18, 2022, we had $106.5 million outstanding under our Term Loan Facility and $133.0 million outstanding under our ABL Facility (defined herein), as well as a letter of credit in the amount of $1.5 million, with a borrowing base of $273.1 million. Please see “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Debt Agreements.”

Moreover, subject to the limits contained in our ABL Facility and Term Loan Facility (collectively, the “Credit Facilities”), we may incur substantial additional debt from time to time. Any borrowings we may incur in the future would have several important consequences for our future operations, including that:

- covenants contained in the documents governing such indebtedness may require us to meet or maintain certain financial tests, which may affect our flexibility in planning for, and reacting to, changes in our industry, such as being able to take advantage of acquisition opportunities when they arise;
- our ability to obtain additional financing for working capital, capital expenditures, acquisitions, general corporate and other purposes may be limited;
- our ability to use operating cash flow in other areas of our business may be limited because we must dedicate a substantial portion of these funds to make principal and interest payments on our indebtedness;

- we may be more vulnerable to interest rate increases to the extent that we incur variable rate indebtedness;
- we may be competitively disadvantaged to our competitors that are less leveraged or have greater access to capital resources; and
- we may be more vulnerable to adverse economic and industry conditions.

If we incur indebtedness in the future, we may have significant principal payments due at specified future dates under the documents governing such indebtedness. Our ability to meet such principal obligations will be dependent upon future performance, which in turn will be subject to general economic conditions, industry cycles and financial, business and other factors affecting our operations, many of which are beyond our control. Our business may not continue to generate sufficient cash flow from operations to repay any incurred indebtedness. If we are unable to generate sufficient cash flow from operations, we may be required to sell assets, to refinance all or a portion of such indebtedness or to obtain additional financing.

Unsatisfactory safety performance may negatively affect our customer relationships and, to the extent we fail to retain existing customers or attract new customers, adversely impact our revenues.

Our ability to retain existing customers and attract new business is dependent on many factors, including our ability to demonstrate that we can reliably and safely operate our business in a manner that is consistent with applicable laws, rules and permits, which legal requirements are subject to change. Existing and potential customers consider the safety record of their third-party service providers to be of high importance in their decision to engage such providers. If one or more accidents were to occur at one of our operating sites, the affected customer may seek to terminate or cancel its use of our equipment or services and may be less likely to continue to use our services, which could cause us to lose substantial revenues. Furthermore, our ability to attract new customers may be impaired if they elect not to engage us because they view our safety record as unacceptable. In addition, it is possible that we will experience multiple or particularly severe accidents in the future, causing our safety record to deteriorate. This may be more likely as we continue to grow, if we experience high employee turnover or labor shortage, or hire inexperienced personnel to bolster our staffing needs.

If we are unable to fully protect our intellectual property rights, we may suffer a loss in our competitive advantage or market share.

We do not have patents or patent applications relating to many of our key processes and technology. If we are not able to maintain the confidentiality of our trade secrets, or if our competitors are able to replicate our technology or services, our competitive advantage would be diminished. We also cannot ensure that any patents we may obtain in the future would provide us with any significant commercial benefit or would allow us to prevent our competitors from employing comparable technologies or processes.

We may be adversely affected by disputes regarding intellectual property rights of third parties.

Third parties from time to time may initiate litigation against us by asserting that the conduct of our business infringes, misappropriates or otherwise violates intellectual property rights. We may not prevail in any such legal proceedings related to such claims, and our products and services may be found to infringe, impair, misappropriate, dilute or otherwise violate the intellectual property rights of others. If we are sued for infringement and lose, we could be required to pay substantial damages and/or be enjoined from using or selling the infringing products or technology. Any legal proceeding concerning intellectual property could be protracted and costly regardless of the merits of any claim and is inherently unpredictable and could have a material adverse effect on our financial condition, regardless of its outcome.

If we were to discover that our technologies or products infringe valid intellectual property rights of third parties, we may need to obtain licenses from these parties or substantially re-engineer our products in order to avoid infringement. We may not be able to obtain the necessary licenses on acceptable terms, or at all, or be able to re-engineer our products successfully. If our inability to obtain required licenses for our technologies or products prevents us from selling our products, that could adversely impact our financial condition and results of operations.

Additionally, we currently license certain third party intellectual property in connection with our business, and the loss of any such license could adversely impact our financial condition and results of operations.

Seasonal weather conditions, natural disasters, public health crises, and other catastrophic events outside of our control could severely disrupt normal operations and harm our business.

Our operations are located in different regions of the United States and Canada. Some of these areas, including the DJ Basin, Powder River Basin, Williston Basin and our Canadian operations, are adversely affected by seasonal weather conditions, primarily in the winter and spring. However, as evidenced by the severe winter weather experienced in the southern United States and Canada during February 2021, weather-related hazards can exist in almost all the areas where we operate. During periods of heavy snow, ice or rain, we may be unable to move our equipment between locations or obtain adequate supplies of raw material or fuel, thereby reducing our ability to provide services and generate revenues. The exploration activities of our customers may also be affected during such periods of adverse weather conditions. Additionally, extended drought conditions in our operating regions could impact our ability or our customers' ability to source sufficient water or increase the cost for such water. As a result, a natural disaster or inclement weather conditions could severely disrupt the normal operation of our business and adversely impact our financial condition and results of operations. Furthermore, if the area in which we operate or the market demand for oil and natural gas is affected by a public health crises, such as the coronavirus, or other similar catastrophic event outside of our control, our business and results of operations could suffer.

The sand mining operations are subject to a number of risks relating to the proppant industry.

In connection with the OneStim Acquisition, we acquired two state-of-the-art sand mines in the Permian Basin. Sand mining operations are subject to risks normally encountered in the proppant industry. These risks include, among others: unanticipated ground, grade or water conditions; inability to acquire or maintain, or public or nongovernmental organization opposition to, necessary permits for mining, access or water rights; our ability to timely obtain necessary authorizations, approvals and permits from regulatory agencies (including environmental agencies, such as the FWS, where our operations in West Texas may be slowed, limited or halted due to conservation efforts targeted at the habitat of the dunes sagebrush lizard); pit wall or pond failures, and sluffing events; costs associated with environmental compliance or as a result of unauthorized releases into the environment; restrictions imposed on our operations related to the protection of natural resources, including plant and animal species; and reduction in the amount of water available for processing. Any of these risks could result in delays, limitations or cancellations in mining or processing activities, losses or possible legal liability.

Silica-related legislation, health issues and litigation could have a material adverse effect on our business, reputation or results of operations.

We are subject to laws and regulations relating to human exposure to crystalline silica. Historically, our environmental compliance costs with respect to existing crystalline silica requirements have not had a material adverse effect on our results of operations; however, federal regulatory authorities and analogous state agencies may continue to propose changes in their regulations regarding workplace exposure to crystalline silica, such as permissible exposure limits, required controls and personal protective equipment. We may not be able to comply with any new laws and regulations that are adopted, and any new laws and regulations could have a material adverse effect on our operating results by requiring us to modify or cease our operations.

In addition, the inhalation of respirable crystalline silica is associated with the lung disease silicosis. There is evidence of an association between crystalline silica exposure or silicosis and lung cancer and a possible association with other diseases, including immune system disorders such as scleroderma. The actual or perceived health risks of handling hydraulic fracture sand could materially and adversely affect hydraulic fracturing service providers, including us, through reduced use of hydraulic fracture sand, the threat of product liability or employee lawsuits, increased scrutiny by federal, state and local regulatory authorities of us and our customers or reduced financing sources available to the industry. Furthermore, we may incur additional costs with respect to purchasing specialized equipment designed to reduce exposure to crystalline silica in connection with our operations or invest capital in new equipment.

We are subject to the Federal Mine Safety and Health Act of 1977, which imposes stringent health and safety standards on numerous aspects of its operations.

Our operations are subject to the Federal Mine Safety and Health Act of 1977, as amended by the Mine Improvement and New Emergency Response Act of 2006, which imposes stringent health and safety standards on numerous aspects of mineral extraction and processing operations, including the training of personnel, operating procedures, operating equipment, and other matters. Our failure to comply with such standards, or changes in such standards or the re-interpretation or more stringent enforcement thereof, could have a material adverse effect on our business and financial condition or otherwise impose significant restrictions on its ability to conduct mineral extraction and processing operations.

The occurrence of explosive incidents could disrupt our operations and could adversely affect our business, financial condition and results of operations.

The wireline service we provide to oil and natural gas E&P customers involves the storage and handling of explosive materials. Despite the use of specialized facilities to store explosive materials and intensive employee training programs, the handling of explosive materials could result in incidents that temporarily shut down or otherwise disrupt our or E&P customers' operations or could cause restrictions, delays or cancellations in the delivery of services. It is possible that an explosion could result in death or significant injuries to employees and other persons. Material property damage to us, E&P customers and third parties could also occur. Any explosive incident could expose us to adverse publicity or liability for damages or cause production restrictions, delays or cancellations, any of which developments could have a material adverse effect on our ability to compete, business, financial condition and results of operations.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Information regarding our properties is contained in “Item 1. Business” and is incorporated by reference herein.

Item 3. Legal Proceedings

The information with respect to this Item 3. Legal Proceedings is set forth in Note 15—Commitments and Contingencies included in “Item 8. Financial Statements and Supplementary Data.”

Item 4. Mine Safety Disclosures

Information concerning mine safety violations or other regulatory matters required by section 1503(a) of the Dodd-Frank Wall Street Reform and Consumer Protection Act and Item 104 of Regulation S-K is included in Exhibit 95 to this Form 10-K.

PART II

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

Market Information

On January 17, 2018, we consummated an initial public offering of our Class A Common Stock at a price of $17.00 per share. Our Class A Common Stock is traded on the NYSE under the symbol "LBRT." Prior to that time, there was no public market for our Class A Common Stock. There is no public market for our Class B Common Stock.

Holders of our Common Stock

As of February 18, 2022, there were 29 stockholders of record of our Class A Common Stock and 22 stockholders of record of our Class B Common Stock. The number of record holders is based upon the actual number of holders registered on the books of the Company at such date and does not include holders of shares in "street names" or persons, partnerships, associations, corporations or other entities identified in security position listings maintained by depositories.

Dividend Policy

Although the Company has previously paid quarterly cash dividends to stockholders of Class A Common Stock, in 2020, the Company suspended future quarterly dividends until business conditions warrant reinstatement. As a result, the Company did not pay any dividends in the year ended December 31, 2021. The declaration of dividends is subject to approval by the Board and to the Board's continuing determination that such declaration of dividends is in the best interests of the Company and its stockholders. Future dividends may be adjusted at the Board's discretion based on market conditions and capital availability. We are not required to pay dividends, and our stockholders will not be guaranteed, or have contractual or other rights to receive, dividends.

Recent Sales of Unregistered Equity Securities

We had no sales of unregistered equity securities during the period covered by this Annual Report that were not previously reported in a Current Report on Form 8-K (or on Form 10-Q in lieu of Form 8-K).

Purchase of Equity Securities By the Issuer and Affiliated Purchasers

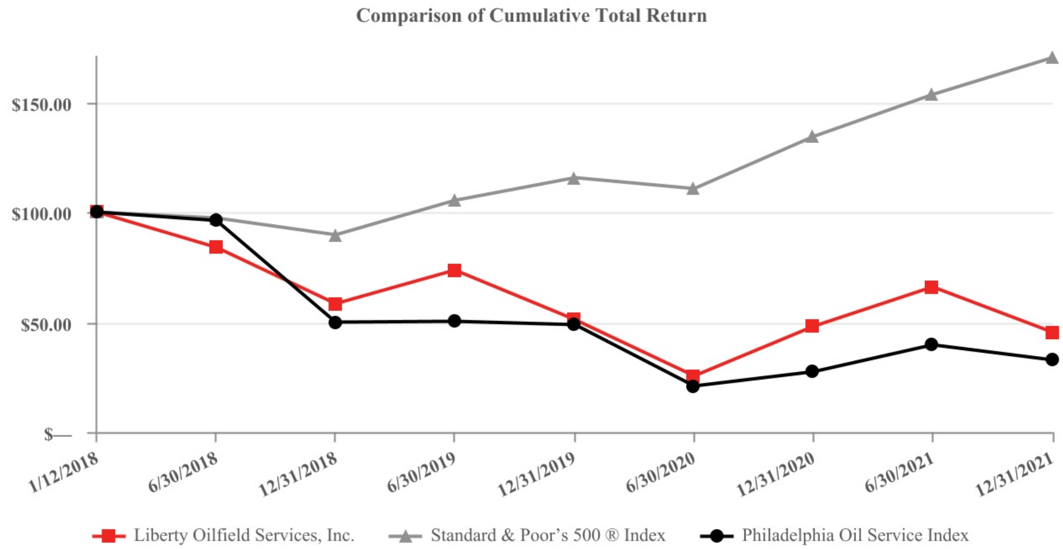
On September 10, 2018 the Board authorized a share repurchase plan to repurchase up to $100.0 million of the Company's Class A Common Stock through September 30, 2019. On January 22, 2019, the Board authorized an additional $100.0 million under the share repurchase plan through January 31, 2021. During the year ended December 31, 2021, the Company did not purchase any shares of Class A Common Stock.

As of December 31, 2021, no amounts remained authorized for future repurchases of Class A Common Stock under the share repurchase program.

Stock Performance Graph

The following graph and table compares the cumulative total return on our Class A Common Stock with the cumulative total return on the Standard & Poor's 500 ® Index and the Philadelphia Oil Service Index, since January 12, 2018, the first day on which shares of our Common Stock issued in our IPO commenced trading on the NYSE and each semi-annual period thereafter through December 31, 2021. The graph assumes that $100 was invested in our Class A Common Stock in each index on January 12, 2018 and that any dividends were reinvested on the last day of the month in which they were paid. The cumulative total return set forth is not necessarily indicative of future performance.

The following graph and related information shall not be deemed "soliciting material" or to be "filed" with the SEC, nor shall such information be incorporated by reference into any future filing under the Securities Act of 1933 or the Securities Exchange Act of 1934, except to the extent that we specifically incorporate it by reference into such filing.



	For Year Ended 2018			For the Year Ended 2019		For the Year Ended 2020		For the Year Ended 2021	
	January 12,	June 30,	December 31,	June 30,	December 31,	June 30,	December 31,	June 30,	December 31,
Liberty Oilfield Services, Inc.	$ 100.00	$ 83.87	$ 58.38	$ 73.40	$ 50.91	$ 25.55	$ 48.08	$ 66.03	$ 45.23
Standard & Poor's 500 ® Index	100.00	97.00	89.45	104.97	115.28	110.62	134.02	153.34	170.07
Philadelphia Oil Service Index	100.00	95.91	49.91	50.37	48.48	20.67	27.45	39.47	32.65

Item 6. [Reserved]

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 audited consolidated financial statements and related notes appearing elsewhere in this Annual Report. The following discussion contains "forward-looking statements" that reflect our future plans, estimates, beliefs and expected performance. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of a variety of risks and uncertainties, including those described in this Annual Report under "Cautionary Note Regarding Forward-Looking Statements" and "Item 1A. Risk Factors." Except as required by law, we assume no obligation to update any of these forward-looking statements. This section of this Annual Report generally discusses 2021 and 2020 items and year-to-year comparisons between 2021 and 2020. For discussion of year ended December 31, 2019, as well as the year ended 2020 compared to the year ended December 31, 2019, refer to Part II, Item 7— "Management's Discussion and Analysis of Financial Condition and Results of Operations" of our 2020 Annual Report.

Overview

We are an independent provider of hydraulic fracturing services and wireline services and related goods to onshore oil and natural gas E&P companies in North America. We have grown from one active hydraulic fracturing fleet in December 2011 to over 30 active fleets as of December 31, 2021. We provide our services primarily in the Permian Basin, the Eagle Ford Shale, the DJ Basin, the Williston Basin, the San Juan Basin and the Powder River Basin. Following the completion of the OneStim Acquisition (as defined below) we now also provide services in the Haynesville Shale, the SCOOP/STACK, the Marcellus Shale, Utica Shale, and the Western Canadian Sedimentary Basin. Additionally, we operate two sand mines in the Permian Basin.

On December 31, 2020, the Company acquired certain assets and liabilities of Schlumberger's OneStim business, which provides hydraulic fracturing pressure pumping services in onshore United States and Canada, including its pressure pumping, pumpdown perforating and Permian frac sand business, in exchange for consideration resulting in a total of 66,326,134 shares of the Class A Common Stock being issued in connection with the OneStim Acquisition. As of February 18, 2022, Schlumberger owned 30.5% of the issued and outstanding shares of our Common Stock. The combined company delivers best-in-class completion services for the sustainable development of unconventional resource plays in the United States and Canada onshore markets.

On October 26, 2021, the Company acquired PropX in exchange for $11.9 million in cash and 3,405,526 shares of Class A Common Stock and 2,441,010 shares of Class B Common Stock, and 2,441,010 Liberty LLC Units, for total consideration of $103.0 million, based on the Class A Common Stock closing price of $15.58 on October 26, 2021, subject to customary post closing adjustments. The Liberty LLC Units are redeemable for an equivalent number of shares of Class A Common Stock at any time, at the election of the shareholder. Founded in 2016, PropX is a leading provider of last-mile proppant delivery solutions including proppant handling equipment and logistics software across North America. PropX offers innovative environmentally friendly technology with optimized dry and wet sand containers and wellsite proppant handling equipment that drive logistics efficiency and reduce noise and emissions. We believe that PropX wet sand handling technology is a key enabler of the next step of cost and emissions reductions in the proppant industry. PropX also offers customers the latest real-time logistics software, PropConnect, for sale or as hosted software as a service.

We believe technical innovation and strong relationships with our customer and supplier bases distinguish us from our competitors and are the foundations of our business. We expect that E&P companies will continue to focus on technological innovation as completion complexity and fracture intensity of horizontal wells increases, particularly as customers are increasingly focused on reducing emissions from their completions operations. We remain proactive in developing innovative solutions to industry challenges, including developing: (i) our databases of U.S. unconventional wells to which we apply our proprietary multi-variable statistical analysis technologies to provide differential insight into fracture design optimization; (ii) our Liberty Quiet Fleet® design which significantly reduces noise levels compared to conventional hydraulic fracturing fleets; (iii) hydraulic fracturing fluid systems tailored to the specific reservoir properties in the basins in which we operate; (iv) our dual fuel dynamic gas blending fleets that allow our engines to run diesel or a combination of diesel and natural gas, to optimize fuel use, reduce emissions and lower costs; and (v) the successful test of digiFrac™, our innovative, purpose-built electric frac pump that has approximately 25% lower CO2e emission profile than the Tier IV DGB. In addition, our integrated supply chain includes proppant, chemicals, equipment, logistics and integrated software which we believe promotes wellsite efficiency and leads to more pumping hours and higher productivity throughout the year to better service our customers. In order to achieve our technological objectives, we carefully manage our liquidity and debt position to promote operational flexibility and invest in the business throughout the full commodity cycle.

Recent Trends and Outlook

During the year 2021, the posted WTI price traded at an average of $68.13 per barrel ("Bbl"), as compared to the 2020 average of $39.16 per Bbl and the 2019 average of $56.99 Bbl. The recovery of energy demand is also reflected in the incremental improvement to rig count, as the average domestic onshore rig count for the United States and Canada was 704 rigs reported in the fourth quarter of 2021, up from the average in the fourth quarter of 2020 of 384, according to a report from Baker Hughes, a GE Company.

E&P operators are responding to oil and gas price signals. The public operators are maintaining discipline and we expect will show only modest production growth this year, while the private operators are likely reacting more robustly to strong commodity prices.

The transformative work our team accomplished in 2021 positions us well as we believe our industry is beginning an upcycle driven by rapidly tightening markets for oil & gas. Years of reduced global investment in upstream oil and gas production is now colliding with record global demand for natural gas and natural gas liquids today, and potential record global demand for oil later this year. Oil and gas are central to the global economy which is well along the way of recovering from the global COVID-19 pandemic.

Within the frac market, two years of supply attrition and cannibalization plus constraints from labor shortages, and a secular shift towards next generation frac fleet technologies has led to tightness in the supply of fleets. Liberty has focused on finding the right long-term customer partnerships for the future and has been very disciplined in holding our active frac fleet count steady until financial returns justify significant additional fleet deployments.

During 2021, we worked on the integration of the OneStim Acquisition into Liberty, which was exacerbated by COVID-impacted supply chain and difficult labor challenges. Integration-related costs are still with us today, impacting our financial results. However, we made improvements in these costs during January 2022, and believe these costs will lessen during 2022. We expect sequential revenue growth in the first quarter of 2022, along with improvement in our margins as integration costs start to fade away. We will also benefit from increased pricing in the first quarter of 2022, driven by a pass-through of inflationary costs and higher net service pricing. We expect modest rises in pricing during subsequent quarters in 2022, along with the opportunity for margin growth associated with lowering our cost of operations and increasing efficiencies.

Increase in Drilling Efficiency and Service Intensity of Completions

Over the past decade, E&P companies have focused on exploiting the vast resource potential available across many of North America's unconventional resource plays through the application of horizontal drilling and completion technologies, including the use of multi-stage hydraulic fracturing, in order to increase recovery of oil and natural gas. As E&P companies have improved drilling and completion techniques to maximize return and efficiency, we believe that their "break-even oil prices" continue to decline. These improvements in well economics have kept U.S. Shale oil and gas production competitive even as oil and gas prices have declined. Liberty has been a significant partner with our customers in driving these continued improvements.

Improved drilling economics from horizontal drilling and greater rig efficiencies. Unconventional resources are increasingly being targeted through the use of horizontal drilling. According to Baker Hughes, as reported on February 11, 2022, horizontal rigs accounted for approximately 94% of all rigs drilling in the United States and Canada, up from 77% as of December 26, 2014. Over the past several years, North American E&P companies have benefited from improved drilling economics driven by technologies that reduce the number of days, and the cost, of drilling wells. North American drilling rigs have incorporated newer technologies, which allow them to drill rock more effectively and quickly, meaning each rig can drill more wells in a given period. These include improved drilling technologies and the incorporation of geosteering techniques which allow better placement of the wellbore. Drilling rigs have also incorporated new technology which allows fully-assembled rigs to automatically "walk" from one location to the next without disassembling and reassembling the rig, greatly reducing the time it takes to move from one drilling location to the next. Today the majority of E&P drilling is on multi-well pad development, allowing efficient drilling of multiple horizontal wellbores from the same pad or location. The aggregate effect of these improved techniques and technologies have reduced the average days required to drill a well, which according to Lium Research, has dropped from 28 days in 2014 to 17 days in 2021.

Increased complexity and service intensity of horizontal well completions. In addition to improved rig efficiencies discussed above, E&P companies are also improving the subsurface techniques and technologies used to exploit unconventional resources. These improvements have targeted increasing the exposure of each wellbore to the reservoir by drilling longer horizontal lateral sections of the wellbore. To complete the well, hydraulic fracturing is applied in stages along the wellbore to break-up the resource so that oil and gas can be produced. As wellbores have increased in length, the number of frac stages and/or the number of perforation clusters (frac initiation points) has also increased. Further, E&P companies have improved production from each stage by applying increasing amounts of proppant in each stage, which better connects the well to the resource. The aggregate effect of increased number of stages and the increasing amount of proppant in each stage has greatly increased the total amount of proppant used in each well, according to Liberty's FracTrends database, from six million pounds per well in 2014 to over 18.6 million pounds per well in 2021. Further efficiency gains are being sought via the "simul-frac" technique. Utilizing a larger frac fleet (1.25x to 2x the normal horsepower), operators are fracturing stages in two separate wells on a pad simultaneously as a single operation. When compared to typical zipper-frac operations, this new method allows for more lateral feet to be completed in a day. This emerging trend will allow operators to complete a pad of wells quicker, thereby shortening the time from spud to first production.

These industry trends continue to keep our customers as important suppliers to the global oil and natural gas markets, which directly benefit hydraulic fracturing companies like us that have the expertise and innovative technology to effectively service today's more efficient oilfield drilling activity and the increasing complexity and intensity of well completions. Given the expected returns that E&P companies have reported for new well development activities due to improved rig efficiencies and increasing well completion complexity and intensity, we expect these industry trends to continue.

How We Generate Revenue

We currently generate revenue through the provision of hydraulic fracturing and wireline services and goods, including sand from our Permian Basin sand mines. These services and goods are provided under a variety of contract structures, primarily master service agreements ("MSAs") as supplemented by statements of work, pricing agreements and specific quotes. A portion of our statements of work, under MSAs, include provisions that establish pricing arrangements for a period of up to approximately one year in length. However, the majority of those agreements provide for pricing adjustments based on market conditions. The majority of our services are priced based on prevailing market conditions and changing input costs at the time the services are provided, giving consideration to the specific requirements of the customer.

Our hydraulic fracturing and wireline services are performed in sections, which we refer to as fracturing stages. The estimated number of fracturing stages to be completed for a particular horizontal well is determined by the customer's well completion design. We recognize revenue for each fracturing stage completed, although our revenue per completed fracturing stage varies depending on the actual volumes and types of proppants, chemicals and fluid utilized for each fracturing stage. The number of fracturing stages that we are able to complete in a period is directly related to the number and utilization of our deployed fleets and size of stages.

Costs of Conducting Our Business

The principal expenses involved in conducting our business are direct cost of personnel, services and materials used in the provision of services, general and administrative expenses, and depreciation and amortization. A large portion of the costs we incur in our business are variable based on the number of hydraulic fracturing jobs and the requirements of services provided to our customers. We manage the level of our fixed costs, except depreciation and amortization, based on several factors, including industry conditions and expected demand for our services.

How We Evaluate Our Operations

We use a variety of qualitative, operational and financial metrics to assess our performance. First and foremost of these is a qualitative assessment of customer satisfaction because ensuring we are a valuable partner to our customers is the key to achieving our quantitative business metrics. Among other measures, management considers each of the following:

- Revenue;
- Operating Income;
- EBITDA;
- Adjusted EBITDA;
- Net Income Before Taxes; and
- Earnings per Share.

Revenue

We analyze our revenue by comparing actual monthly revenue to our internal projections for a given period and to prior periods to assess our performance. We also assess our revenue in relation to the number of fleets we have deployed (revenue per average active fleet) from period to period.

Operating Income

We analyze our operating income, which we define as revenues less direct operating expenses, depreciation and amortization and general and administrative expenses, to measure our financial performance. We believe operating income is a meaningful metric because it provides insight on profitability and true operating performance based on the historical cost basis of our assets. We also compare operating income to our internal projections for a given period and to prior periods.

EBITDA and Adjusted EBITDA

We view EBITDA and Adjusted EBITDA as important indicators of performance. We define EBITDA as net income (loss) before interest, income taxes, depreciation and amortization. We define Adjusted EBITDA as EBITDA adjusted to eliminate the effects of items such as non-cash stock based compensation expense, new fleet or new basin start-up costs, fleet lay-down costs, costs of asset acquisition, gain or loss on the disposal of assets, asset impairment charges, bad debt reserves, and non-recurring expenses that management does not consider in assessing ongoing operating performance. See “Comparison of Non-GAAP Financial Measures” for more information and a reconciliation of EBITDA and Adjusted EBITDA to net income (loss), the most directly comparable financial measure calculated and presented in accordance with GAAP.

Results of Operations

Year Ended December 31, 2021, Compared to Year Ended December 31, 2020

	Years Ended December 31,		
Description	2021	2020	Change
	(in thousands)		
Revenue	$ 2,470,782	$ 965,787	$ 1,504,995
Cost of services, excluding depreciation and amortization shown separately	2,249,926	857,981	1,391,945
General and administrative	123,406	84,098	39,308
Transaction, severance and other costs	15,138	21,061	(5,923)
Depreciation, depletion and amortization	262,757	180,084	82,673
Loss (gain) on disposal of assets	779	(411)	1,190
Operating loss	(181,224)	(177,026)	(4,198)
Other (income) expense, net	(3,436)	14,505	(17,941)
Net loss before taxes	(177,788)	(191,531)	13,743
Income tax expense (benefit)	9,216	(30,857)	40,073
Net loss	(187,004)	(160,674)	(26,330)
Less: Net loss attributable to non-controlling interests	(7,760)	(45,091)	37,331
Net loss attributable to Liberty Oilfield Services Inc. stockholders	$ (179,244)	$ (115,583)	$ (63,661)

Revenue

Our revenue increased $1.5 billion, or 156%, to $2.5 billion for the year ended December 31, 2021 compared to $1.0 billion for the year ended December 31, 2020. The increase is attributable to higher fleet utilization and service prices, as well as additional fleets and service lines obtained through the OneStim Acquisition, which drove higher revenue, commensurate with the energy demand recovery.

Cost of Services

Cost of services (excluding depreciation and amortization) increased $1.4 billion, or 162%, to $2.2 billion for the year ended December 31, 2021 compared to $0.9 billion for the year ended December 31, 2020. The higher expense was primarily related to the increase in activity, as discussed above, as well as increases in material, personnel, and repairs and maintenance costs related to global supply chain challenges, inflationary pressures and material prices. The Company also reinstated bonus programs and the 401(k) match program, both of which we temporarily suspended during 2020.

General and Administrative Expenses

General and administrative expenses increased $39.3 million, or 47%, to $123.4 million for the year ended December 31, 2021 compared to $84.1 million for the year ended December 31, 2020 primarily related to an increase in personnel benefits due to additional headcount commensurate with the acquisitions of OneStim and PropX. The furlough and flexible cost structure implemented in 2020 also ended prior to 2021. Additionally, during 2021, the Company reinstated bonus programs and the 401(k) match program, both of which we temporarily suspended during 2020.

Transaction, Severance and Other Costs

Transaction costs were $15.1 million for the year ended December 31, 2021 compared to $8.5 million for the year ended December 31, 2020. Such costs incurred primarily relate to investment banking, legal, accounting, other professional services provided and integration costs in connection with the acquisitions of OneStim and PropX.

Severance and other costs were $0 during the year ended December 31, 2021 compared to $12.6 million for the year ended December 31, 2020 which were related to one time severance costs and insurance and other benefits for furloughed employees. The Company did not lay-off or furlough any employees during 2021.

Depreciation, Depletion and Amortization

Depreciation, depletion and amortization expense increased $82.7 million, or 45.9%, to $262.8 million for the year ended December 31, 2021 compared to $180.1 million for the year ended December 31, 2020. The increase in 2021 was due to the addition of active fleets and other property from the acquisitions of OneStim and PropX.

Loss (gain) on Disposal of Assets

The Company recorded a loss on disposal of assets of $0.8 million for the year ended December 31, 2021 compared to a gain of $0.4 million for the year ended December 31, 2020. In an effort to consolidate operations in certain basins after the OneStim Acquisition, the Company sold three real estate properties during the fourth quarter of 2021, which collectively resulted in a small loss on sale, along with regular sales of equipment that was no longer being used. During 2020, the Company reduced the number of light duty pick-ups used in fleets based on lower levels of activity; and the Company realized gains upon sale commensurate with lease terminations.

Operating Loss

Operating loss increased $4.2 million, or 2.4%, to $181.2 million for the year ended December 31, 2021 compared to operating loss of $177.0 million for the year ended December 31, 2020. The increased operating loss is primarily due to the cost of services rising at a slightly higher rate than revenue increases through the rebound in activity levels in 2021.

Other (Income) Expense, net

The Company recorded other income, net of $3.4 million for the year ended December 31, 2021 compared to other expense, net of $14.5 million during the year ended December 31, 2020. Other (income) expense, net is comprised of gain on remeasurement of liability under the TRAs and interest expense, net. During the second quarter of 2021, the Company entered into a three-year cumulative pre-tax book loss primarily due to COVID-19 related losses and recognized a valuation allowance on a portion of its deferred tax assets in accordance with ASC 740. As a result of the recognition of a valuation allowance, the Company also remeasured the liability under the TRAs resulting in a gain of $19.0 million during the year ended December 31, 2021. Interest expense, net was consistent between periods, increasing $1.1 million as a result of increased borrowings under the credit facility and lower interest income during the year ended December 31, 2021 compared to the year ended December 31, 2020.

Net Loss Before Taxes

Net loss before taxes decreased $13.7 million, or 7.2%, to $177.8 million for the year ended December 31, 2021 compared $191.5 million for the year ended December 31, 2020. The decrease in loss is primarily due to the gain recognized upon remeasurement of the TRAs during the year ended December 31, 2021 as compared to the year ended December 31, 2020 partially offset by the increase in operating loss discussed above.

Income Tax Expense (Benefit)

Tax expense of $9.2 million was recognized for the year ended December 31, 2021, an effective rate of (5.2)%, compared to an income tax benefit of $30.9 million, at an effective rate of 16.1%, recognized for the year ended December 31, 2020. The income tax expense is primarily attributable to the full valuation allowance recorded on the net deferred tax assets as of June 30, 2021, and Canada income and provincial taxes.

Comparison of Non-GAAP Financial Measures

We view EBITDA and Adjusted EBITDA as important indicators of performance. We define EBITDA as net income (loss) (the most directly comparable GAAP financial measure) before interest, income taxes, depreciation, depletion and amortization. We define Adjusted EBITDA as EBITDA adjusted to eliminate the effects of items such as non-cash stock based compensation expense, new fleet or new basin start-up costs, fleet lay-down costs, costs of asset acquisitions, gain or loss on the disposal of assets, bad debt reserves and non-recurring expenses that management does not consider in assessing ongoing performance.

Our board of directors, management, investors, and lenders use EBITDA and Adjusted EBITDA to assess our financial performance because it allows them to compare our operating performance on a consistent basis across periods by removing the effects of our capital structure (such as varying levels of interest expense), asset base (such as depreciation, depletion and amortization) and other items that impact the comparability of financial results from period to period. We present EBITDA and Adjusted EBITDA because we believe they provide useful information regarding the factors and trends affecting our business in addition to measures calculated under GAAP.

Note Regarding Non-GAAP Financial Measures

EBITDA and Adjusted EBITDA are not financial measures presented in accordance with GAAP. We believe that the presentation of these non-GAAP financial measures will provide useful information to investors in assessing our financial performance and results of operations. Net income is the GAAP measure most directly comparable to EBITDA and Adjusted EBITDA. Our non-GAAP financial measures should not be considered as alternatives to the most directly comparable GAAP financial measure. Each of these non-GAAP financial measures has important limitations as an analytical tool due to exclusion of some but not all items that affect the most directly comparable GAAP financial measures. You should not consider EBITDA or Adjusted EBITDA in isolation or as substitutes for an analysis of our results as reported under GAAP. Because EBITDA and Adjusted EBITDA may be defined differently by other companies in our industry, our definitions of these non-GAAP financial measures may not be comparable to similarly titled measures of other companies, thereby diminishing their utility.

The following tables present a reconciliation of EBITDA and Adjusted EBITDA to our net income, which is the most directly comparable GAAP measure for the periods presented:

Year Ended December 31, 2021 Compared to Year Ended December 31, 2020: EBITDA and Adjusted EBITDA

	Years Ended December 31,		
Description	**2021**	**2020**	**Change**
	(in thousands)		
Net loss	$ (187,004)	$ (160,674)	$ (26,330)
Depreciation and amortization	262,757	180,084	82,673
Interest expense, net	15,603	14,505	1,098
Income tax expense (benefit)	9,216	(30,857)	40,073
EBITDA	$ 100,572	$ 3,058	$ 97,514
Stock based compensation expense	19,946	17,139	2,807
Fleet start-up and lay-down costs	2,751	12,175	(9,424)
Transaction, severance and other costs	15,138	21,061	(5,923)
Loss (gain) on disposal of assets	779	(411)	1,190
Provision for credit losses	745	4,877	(4,132)
Gain on remeasurement of liability under tax receivable agreement	(19,039)	—	(19,039)
Adjusted EBITDA	$ 120,892	$ 57,899	$ 62,993

EBITDA was $100.6 million for the year ended December 31, 2021 compared to $3.1 million for the year ended December 31, 2020. Adjusted EBITDA was $120.9 million for the year ended December 31, 2021 compared to $57.9 million for the year ended December 31, 2020. The increases in EBITDA and Adjusted EBITDA primarily resulted from improved market conditions and increased activity levels as described above under the captions *Revenue*, *Cost of Services,* and *General and Administrative Expenses for the Year Ended December 31, 2021, Compared to Year Ended December 31, 2020.*

Liquidity and Capital Resources

Overview

Historically, our primary sources of liquidity to date have been cash flows from operations, proceeds from our IPO, and borrowings under our Credit Facilities. We expect to fund operations and organic growth with cash flows from operations and available borrowings under our Credit Facilities. We monitor the availability of capital resources such as equity and debt financings that could be leverage for current or future financial obligations including those related to acquisitions, capital expenditures, working capital and other liquidity requirements. We may incur additional indebtedness or issue equity in order to meet our capital expenditure activities and liquidity requirements, as well as to fund growth opportunities that we pursue, including via acquisition, such as with the acquisitions of OneStim and PropX. Our primary uses of capital have been capital expenditures to support organic growth and funding ongoing operations, including maintenance and fleet upgrades.

Cash and cash equivalents decreased by $49.0 million to $20.0 million as of December 31, 2021 compared to $69.0 million as of December 31, 2020, while working capital excluding cash and current liabilities under debt and lease arrangements decreased $104.5 million.

We have $350.0 million committed under the ABL Facility (net of any outstanding letters of credit), subject to certain borrowing base limitations based on a percentage of eligible accounts receivable and inventory (with the ability to request an increase in the size of the ABL Facility by $75 million) available to finance working capital needs. As of December 31, 2021, the borrowing base was calculated to be $269.0 million, and the Company had $18.0 million outstanding in addition to a letter of credit in the amount of $1.5 million, with $249.5 million of remaining availability.

Additionally, we have $106.5 million borrowings remaining on the Term Loan Facility, which was originally $175.0 million.

On October 22, 2021, the Company entered into an amendment to the ABL Facility (the "Revolving Credit Agreement Amendment"). The Revolving Credit Agreement Amendment further amends the credit agreement and guaranty and security agreement originally entered into by the parties on September 19, 2017, which governs the Company's ABL Facility. Along with other revisions, the Revolving Credit Agreement Amendment (i) expanded the definition of borrowing base to include certain eligible US investment grade accounts, Canadian accounts solely after a specified event, and both chemical and spare parts inventory; (ii) increased the maximum revolver amount from $250.0 million to $350.0 million (with the ability to request an increase in the size of the ABL Facility by $75 million); (iii) increased certain indebtedness baskets; (iv) provided additional flexibility for a potential future internal structuring; (v) added new lenders to the facility; and (vi) extended the maturity date to the earlier of (a) October 22, 2026 and (b) to the extent the debt under the Term Loan Facility remains outstanding 90 days prior to the final maturity of the Term Loan Facility. The ABL Facility was initially scheduled to mature on the earlier to occur of (i) September 19, 2022 and (ii) to the extent the debt under the Term Loan Facility remains outstanding, 90 days prior to the final maturity of the Term Loan Facility.

On October 22, 2021, the Company entered into a Fifth Amendment to Credit Agreement, Second Amendment to Guaranty and Security Agreement and Termination of Right of First Offer Letter. The Term Loan Credit Agreement Amendment further amends the credit agreement and guaranty and security agreement and terminates the Right of First Offer Letter originally entered into by the parties on September 19, 2017, which governs the Company's Term Loan Facility. Along with other revisions, the Term Loan Credit Agreement Amendment (i) increased certain indebtedness baskets; (ii) provided additional flexibility for a potential future internal structuring; (iii) extended the maturity date through September 19, 2024; and (iv) terminated a right of first offer in favor of the Term Loan Facility lenders. The Term Loan Facility was initially scheduled to mature on September 19, 2022.

The Credit Facilities contain covenants that restrict our ability to take certain actions. At December 31, 2021, we were in compliance with all debt covenants.

See Note 8—Debt to the consolidated financial statements included in "Item 8. Financial Statements and Supplementary Data" for further details.

Cash Flows

The following table summarizes our cash flows for the periods indicated:

Description	Years Ended December 31, 2021	2020	Change
	(in thousands)		
Net cash provided by operating activities	$ 135,467	$ 85,425	$ 50,042
Net cash used in investing activities	(186,494)	(100,269)	(86,225)
Net cash provided by (used in) financing activities	2,056	(28,868)	30,924

Analysis of Cash Flow Changes Between the Years Ended December 31, 2021 and December 31, 2020

Operating Activities. Net cash provided by operating activities was $135.5 million for the year ended December 31, 2021, compared to net cash provided by operating activities of $85.4 million for the year ended December 31, 2020. The $50.0 million increase in cash from operating activities was primarily attributable to a $1.5 billion increase in revenues, offset by a $1.4 billion increase in cash operating expenses and a $46.9 million increase in cash from changes in working capital for the year ended December 31, 2021, compared to a $63.3 million increase in cash from changes in working capital for the year ended December 31, 2020.

Investing Activities. Net cash used in investing activities was $186.5 million for the year ended December 31, 2021, compared to $100.3 million for the year ended December 31, 2020. The $86.2 million increase in cash used in investment activities related to a decrease in spend in 2020 starting in the second quarter and remaining throughout the year due to the COVID-19 pandemic. Investing increased during 2021 when the markets recovered to pre-pandemic levels and $11.9 million was used in the fourth quarter for the PropX Acquisition.

Financing Activities. Net cash provided by financing activities was $2.1 million for the year ended December 31, 2021, compared to net cash used in financing activities of $28.9 million for the year ended December 31, 2020. The $30.9 million change in financing activities was primarily due to net borrowings of $18.0 million on the ABL Facility during the year ended December 31, 2021, compared to no borrowings on the ABL Facility for the year ended December 31, 2020. Additionally, there was a $5.8 million decrease in dividends and per unit distributions to non-controlling interest unitholders as a result of the suspension of the dividend in April 2020. Other distributions and advance payments to non-controlling interest unitholders was a net receipt of $1.4 million during the year ended December 31, 2021, compared to net payment of $6.8 million during the year ended December 31, 2020 due to a decrease in payments made under the TRAs. These decreases were offset by a $2.6 million increase in payments made for tax withholding on restricted stock unit vesting as a larger number of units vested at a higher stock price in 2021 compared to 2020.

Cash Requirements

Our material cash commitments consists primarily of obligations under long-term debt, TRAs, finance and operating leases for property and equipment, and purchase obligations as part of normal operations. Certain amounts included in our contractual obligations as of December 31, 2021 are based on our estimates and assumptions about these obligations, including pricing, volumes and duration. We have no material off balance sheet arrangements as of December 31, 2021, except for purchase commitments under supply agreements disclosed below.

See Note 8—Debt to the consolidated financial statements included in “Item 8. Financial Statements and Supplementary Data” for information regarding scheduled maturities of our long-term debt. See Note 6—Leases to the consolidated financial statements included in “Item 8. Financial Statements and Supplementary Data” for information regarding scheduled maturities of finance and operating leases.

As of December 31, 2021, we had expected cash payments for estimated interest on our long-term debt and finance lease obligations of $10.6 million payable within the next twelve months and $17.4 million payable thereafter.

As of December 31, 2021, we had purchase obligations of $24.6 million payable within the next twelve months and $1.4 million payable thereafter. See Note 15—Commitments & Contingencies to the consolidated financial statements included in “Item 8. Financial Statements and Supplementary Data” for information regarding scheduled contractual obligations.

We currently do not expect to make any payments under the TRAs within the next twelve months, future amounts payable under the TRAs are dependent upon future events. See Note 12—Income Taxes to the consolidated financial statements included in “Item 8. Financial Statements and Supplementary Data” for information regarding the TRAs.

Other Factors Affecting Liquidity

Customer receivables: In line with industry practice, we typically bill our customers for services provided in arrears dependent upon contractual terms. In weak economic environments, we may experience delays in collection from our customers. Due to the impact of the COVID-19 pandemic on the industry, we have experienced delays in customer payments and agreed to extended payment terms, however, we have not experienced any material non-payment events.

Tax Receivable Agreements

In connection with the IPO, on January 17, 2018, the Company entered into two TRAs with the TRA Holders. The TRAs generally provide for the payment by the Company of 85% of the net cash savings, if any, in U.S. federal, state, and local income tax and franchise tax (computed using simplifying assumptions to address the impact of state and local taxes) that the Company actually realizes (or is deemed to realize in certain circumstances) in periods after the IPO as a result, as applicable to each of the TRA Holders, of (i) certain increases in tax basis that occur as a result of the Company's acquisition (or deemed acquisition for U.S. federal income tax purposes) of all or a portion of such TRA Holders' Liberty LLC Units in connection with the IPO or pursuant to the exercise of the right of each Liberty Unit Holder (the "Redemption Right"), subject to certain limitations, to cause Liberty LLC to acquire all or a portion of its Liberty LLC Units for, at Liberty LLC's election, (A) shares of our Class A Common Stock at the specific redemption ratio or (B) an equivalent amount of cash, or, upon the exercise of the Redemption Right, the right of the Company (instead of Liberty LLC) to, for administrative convenience, acquire each tendered Liberty LLC Unit directly from the redeeming Liberty Unit Holder (the "Call Right") for, at its election, (1) one share of Class A Common Stock or (2) an equivalent amount of cash, (ii) any net operating losses available to the Company as a result of the Corporate Reorganization, and (iii) imputed interest deemed to be paid by the Company as a result of, and additional tax basis arising from, any payments the Company makes under the TRAs.

With respect to obligations the Company expects to incur under the TRAs (except in cases where the Company elects to terminate the TRAs early, the TRAs are terminated early due to certain mergers, asset sales, or other changes of control or the Company has available cash but fails to make payments when due), generally the Company may elect to defer payments due under the TRAs if the Company does not have available cash to satisfy its payment obligations under the TRAs or if its contractual obligations limit its ability to make such payments. Any such deferred payments under the TRAs generally will accrue interest. In certain cases, payments under the TRAs may be accelerated and/or significantly exceed the actual benefits, if any, the Company realizes in respect of the tax attributes subject to the TRAs. The Company accounts for amounts payable under the TRAs in accordance with Accounting Standard Codification ("ASC") Topic 450, *Contingencies* ("ASC Topic 450").

If the Company experiences a change of control (as defined under the TRAs) or the TRAs otherwise terminate early, the Company's obligations under the TRAs could have a substantial negative impact on its liquidity and could have the effect of delaying, deferring or preventing certain mergers, asset sales, or other forms of business combinations or changes of control. There can be no assurance that we will be able to finance our obligations under the TRAs.

Income Taxes

The Company is a corporation and is subject to U.S. federal, state and local income tax on its share of Liberty LLC's taxable income. The Company is also subject to Canada federal and provincial income taxes on its foreign operations.

The combined effective tax rate applicable to the Company for the year ended December 31, 2021 and 2020 was (5.2)% and 16.1%, respectively. The Company's effective tax rate is significantly less than the federal statutory income tax rate of 21.0% due to the Company recording a valuation allowance on its U.S. net deferred tax assets as of December 31, 2021, due to entering into a three year cumulative pre-tax book loss position, primarily as a result of COVID-19 related losses in 2021. The Company's effective tax rate is also less than the statutory rate because of foreign operations for 2021, and the non-controlling interest's share of Liberty LLC's pass-through results for federal, state and local income tax reporting, upon which no taxes are payable by the Company for the years ended December 31, 2021 and 2020. The Company recognized income tax expense of $9.2 million and an income tax benefit of $30.9 million for the years ended December 31, 2021 and 2020, respectively.

Per the Coronavirus Aid, Relief and Economic Security ("CARES") Act enacted on March 27, 2020, net operating losses ("NOL") incurred in 2018, 2019, and 2020 may be carried back to each of the five preceding taxable years to generate a refund of previously paid income taxes. The Company has previously applied for and expects to receive a NOL carryback refund to recover $5.5 million of cash taxes paid by the Company in 2018. This amount has been reflected as a receivable in the prepaids and other current assets line item in the accompanying audited consolidated balance sheets.

Refer to Note 12— Income Taxes to the consolidated financial statements for additional information related to income tax expense.

Critical Accounting Policies and Estimates

The preparation of financial statements requires the use of judgments and estimates. Our critical accounting policies are described below to provide a better understanding of how we develop our assumptions and judgments about future events and related estimates and how they can impact our financial statements. A critical accounting estimate is one that requires our most difficult, subjective or complex estimates and assessments and is fundamental to our results of operations.

We base our estimates on historical experience and on various other assumptions we believe to be reasonable according to the current facts and circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. We believe the following are the critical accounting policies used in the preparation of our consolidated financial statements, as well as the significant estimates and judgments affecting the application of these policies. This discussion and analysis should be read in conjunction with our consolidated financial statements and related notes included in "Item 8. Financial Statements and Supplementary Data."

Business Combinations: Business combinations are accounted for using the acquisition method of accounting in accordance with the *ASC Topic 805 - Business Combinations,* as amended by Accounting Standards Update ("ASU") 2017-01, *Business Combinations (Topic 805), Clarifying the Definition of a Business.* The purchase price is allocated to the assets acquired and liabilities assumed based on their estimated fair values. Fair value of the acquired assets and liabilities is measured in accordance with the guidance of *ASC 850 - Fair Value Measurements,* using discounted cash flows and other applicable valuation techniques. Any acquisitions related costs incurred by the Company are expensed as incurred. Any excess purchase price over the fair value of the net identifiable assets acquired is recorded as goodwill if the definition of a business is met. Operating results of an acquired business are included in our results of operations from the date of acquisition.

Revenue Recognition: Revenue from hydraulic fracturing services is recognized as specific services are provided in accordance with contractual arrangements. If our assessment of performance under a particular contract changes, our revenue and / or costs under that contract may change. In connection with *ASC Topic 842 - Leases* ("Topic 842"), the Company determined that certain of its service revenue contracts contain a lease component. The Company elected to adopt a practical expedient available to lessors, which allows the Company to combine the lease and service component for certain of the Company's service contracts when the service component is the predominant component and continues to account for the combined component under *ASC Topic 606 - Revenue from Contracts with Customers*.

Accounts Receivable: On January 1, 2020, the Company adopted ASU 2016-13, *Financial Instruments-Credit Losses (Topic 326)*: *Measurement of Credit Losses on Financial Instruments* ("ASU 2016-13"), which changes the impairment model for most financial assets and certain other instruments. Specifically, this new guidance requires using a forward looking, expected loss model for trade and other receivables, held-to-maturity debt securities, loans, and other instruments. Under ASU 2016-13, a company recognizes as an allowance, the estimate of lifetime expected credit losses, which is expected to result in more timely recognition of such losses.

The Company applies historic loss factors to its receivable portfolio segments that were not expected to be further impacted by current economic developments, and an additional economic conditions factor to portfolio segments anticipated to experience greater losses in the current economic environment. The Company continuously evaluates customers based on risk characteristics, such as historical losses and current economic conditions. Due to the cyclical nature of the oil and gas industry, the Company often evaluates its customers' estimated losses on a case-by-case basis. It is reasonably possible that our estimates of the allowance for doubtful accounts will change and that losses ultimately incurred could differ materially from the amounts estimated in determining the allowance.

Inventory: Inventory consists of raw materials used in the hydraulic fracturing process, such as proppants, chemicals and field service equipment maintenance parts, and is stated at the lower of cost or net realizable value, determined using the weighted average cost method. Net realizable value is determined based on our estimates of selling prices in the ordinary course of business, less reasonably predictable cost of completion, disposal, and transportation, each of which require us to apply judgment.

Property and Equipment: We calculate depreciation and amortization on our assets based on the estimated useful lives and estimated salvage values that we believe are reasonable. The estimated useful lives and salvage values are subject to key assumptions such as maintenance, utilization and job variation. These estimates may change due to a number of factors such as changes in operating conditions or advances in technology.

We incur maintenance costs on our major equipment. The determination of whether an expenditure should be capitalized or expensed requires management judgment in the application of how the costs benefit future periods, relative to our capitalization policy. Costs that either establish or increase the efficiency, productivity, functionality or life of a fixed asset are capitalized and depreciated over the remaining useful life of the asset.

Impairment of long-lived and other intangible assets: Long-lived assets, such as property and equipment, right-of-use lease assets and intangible assets, are evaluated for impairment whenever events or changes in circumstances indicate that their carrying value may not be recoverable. Recoverability is assessed using undiscounted future net cash flows of assets grouped at the lowest level for which there are identifiable cash flows independent of the cash flows of other groups of assets. When alternative courses of action to recover the carrying amount of the asset group are under consideration, estimates of future undiscounted cash flows take into account possible outcomes and probabilities of their occurrence, which require us to apply judgment. If the carrying amount of the asset is not recoverable based on its estimated undiscounted cash flows expected to result from the use and eventual disposition, an impairment loss is recognized in an amount by which its carrying amount exceeds its estimated fair value. The inputs used to determine such fair value are primarily based upon internally developed cash flow models. Our cash flow models are based on a number of estimates regarding future operations that may be subject to significant variability, are sensitive to changes in market conditions, and are reasonably likely to change in the future.

During the year ended December 31, 2020, as a result of negative market indicators including the COVID-19 pandemic, the increased supply of low-priced oil, and customer cancellations, the Company concluded these triggering events could indicate possible impairment of property and equipment. The Company performed a quantitative and qualitative impairment analysis and determined that no impairment had occurred as of March 31, 2020. As of December 31, 2020, the Company concluded that no additional triggering events occurred and the conclusion reached at March 31, 2020 is still appropriate. Such analysis required management to make estimates and assumptions based on historical data and consideration of future market conditions. Given the uncertainty inherent in any projection, heightened by the possibility of unforeseen additional effects of COVID-19, actual results may differ from the estimates and assumptions used, or conditions may change, which could result in impairment charges in the future.

No impairment was recognized during the years ended December 31, 2021, 2020 and 2019.

Leases: The Company adopted Accounting Standards Update ("ASU") No. 2016-02, *Leases ASC Topic 842* effective January 1, 2019. We elected the modified retrospective transition method under ASC Topic 842 and as such information prior to January 1, 2019 has not been restated and continues to be reported under the accounting standards in effect for the period (*ASC Topic 840-Leases*). We carried forward the historical lease classifications and assessment of initial direct costs, account for lease and non-lease components as a single component, and exclude leases with an initial term of less than 12 months in the lease assets and liabilities. For leases entered into after January 1, 2019, the Company determines if an arrangement is a lease at inception and evaluates identified leases for operating or finance lease treatment. Operating or finance lease right-of-use assets and liabilities are recognized at the commencement date based on the present value of lease payments over the lease term. We use our incremental borrowing rate based on the information available at the commencement date in determining the present value of lease payments. Lease terms may include options to renew; however, we typically cannot determine our intent to renew a lease with reasonable certainty at inception.

Tax Receivable Agreements: In connection with the IPO, on January 17, 2018, the Company entered into two TRAs with the TRA Holders. The TRAs generally provide for the payment by the Company of 85% of the net cash savings, if any, in U.S. federal, state, and local income tax and franchise tax that the Company actually realizes in periods after the IPO as a result of certain tax attributes applicable to each TRA Holder. The Company accounts for amounts payable under the TRAs in accordance with ASC Topic 450, *Contingencies*.

Share Repurchases: The Company accounts for the purchase price of repurchased Class A Common Stock in excess of par value ($0.01 per share of Class A Common Stock) as a reduction of additional paid-in capital, and will continue to do so until additional paid-in capital is reduced to zero. Thereafter, any excess purchase price will be recorded as a reduction to retained earnings.

Foreign Currency Translation: Effective January 1, 2021, the Company commenced operations in Canada and therefore added a critical accounting policy for foreign currency translation. See Note 2—Significant Accounting Policies in the accompanying audited consolidated financial statements included herein and incorporated by reference into this offering memorandum.

Recent Accounting Pronouncements

See Note 2—Significant Accounting Policies—*Recently Issued Accounting Standards* to the consolidated financial statements included in "Item 8. Financial Statements and Supplementary Data" for a discussion of recent accounting pronouncements.

Item 7A. Quantitative and Qualitative Disclosure about Market Risk

Industry Risk

The demand, pricing and terms for hydraulic fracturing services and related goods provided by us are largely dependent upon the level of drilling activity in the U.S. oil and natural gas industry, as well as the available supply of hydraulic fracturing equipment. These activity levels are influenced by numerous factors over which we have no control, including, but not limited to: the supply of and demand for oil and natural gas; the level of prices, and expectations about future prices of oil and natural gas; the cost of exploring for, developing, producing and delivering oil and natural gas; the expected rates of declining current production; the discovery rates of new oil and natural gas reserves; supply of actively marketed and staffed fracturing fleets; available rail and other transportation capacity; weather conditions; domestic and worldwide economic conditions; political instability in oil-producing countries; environmental regulations; technical advances affecting energy consumption; the price and availability of alternative fuels; the ability of E&P companies to raise equity capital and debt financing; and merger and divestiture activity among E&P companies.

The level of U.S. oil and natural gas drilling is volatile. Expected trends in oil and natural gas production activities may not materialize and demand for our services may not reflect the level of activity in the industry. Any prolonged and substantial reduction in oil and natural gas prices would likely affect oil and natural gas production levels and therefore affect demand for our services. A material decline in oil and natural gas prices or U.S. activity levels could have a material adverse effect on our business, financial condition, results of operations and cash flows.

Interest Rate Risk

At December 31, 2021, we had $124.5 million of debt outstanding, with a weighted average interest rate of 8.6%. Interest is calculated under the terms of our Credit Facilities based on our selection, from time to time, of one of the index rates available to us plus an applicable margin that varies based on certain factors. See “Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations—Debt Agreements.” Assuming no change in the amount outstanding, the impact on interest expense of a 1% increase or decrease in the weighted average interest rate would be approximately $1.2 million per year. We do not currently have or intend to enter into any derivative arrangements to protect against fluctuations in interest rates applicable to our outstanding indebtedness.

Commodity Price Risk

Our material and fuel purchases expose us to commodity price risk. Material costs primarily include inventory consumed while performing hydraulic fracturing services. Fuel costs consist of diesel fuel used by trucks and other motorized equipment used for hydraulic fracturing services. At times, we have been able to pass along price increases for material costs and fuel costs to customers and conversely have been required to pass along price decreases for material costs to our customers, depending on market conditions. Further, we have purchase commitments with certain vendors to supply proppant inventory used in our operations at a fixed purchase price, including certain commitments which include minimum purchase obligations. Refer to Note 15—Commitments and Contingencies included in “Item 8. Financial Statements and Supplementary Data” for further discussion regarding purchase commitments.

Item 8. Financial Statements and Supplementary Data

Our financial statements and supplementary data are included in this Annual Report beginning on page F-1 and incorporated by reference herein.

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'

In accordance with the Securities Exchange Act of 1934 Rules 13a-15 and 15d-15, we carried out an evaluation, under the supervision and with the participation of management, including our principal executive officer and principal financial officer, of the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act) as of the end of the period covered by this report. Based on that evaluation, our principal executive officer and principal financial officer concluded that our disclosure controls and procedures were effective as of December 31, 2021 to provide reasonable assurance that information required to be disclosed in our reports filed or submitted under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Our disclosure controls and procedures include controls and procedures designed to ensure that information required to be disclosed in reports filed or submitted under the Exchange Act is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate, to allow timely decisions regarding required disclosures.

As noted in Management's Report on Internal Control Over Financial Reporting, management's evaluation of, and conclusion on, the effectiveness of internal control over financial reporting did not include the internal controls of the entities acquired in the PropX Acquisition, as defined herein, on October 26, 2021. Under guidelines established by the SEC, companies are permitted to exclude acquisitions from their assessment of internal control over financial reporting during the first year of an acquisition while integrating the acquired company. The Company is in the process of integrating PropX's and our internal controls over financial reporting. As a result of these integration activities, certain controls will be evaluated and may be changed. Except as noted above, there were no changes to our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during our last fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

See page F-1 for Management's Report on Internal Control Over Financial Reporting and page F-4 for Report of Independent Registered Public Accounting Firm on its assessment of our internal control over financial reporting.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this item concerning our executive officers, directors and corporate governance is incorporated herein by reference to our definitive proxy statement for our 2022 annual meeting of stockholders, which will be filed with the SEC no later than 120 days after December 31, 2021, under the captions “Proposal 1 — Election of Directors,” “The Board and its Committees,” “Executive Officers” and “Delinquent Section 16(a) Reports.”

Item 11. Executive Compensation

The information required by this item concerning executive compensation is incorporated herein by reference to our definitive proxy statement for our 2022 annual meeting of stockholders, which will be filed with the SEC no later than 120 days after December 31, 2021, under the captions “The Board and its Committees,” “Compensation Discussion & Analysis,” “Compensation Committee Report,” “Executive Compensation Tables,” “Director Compensation” and “CEO Pay Ratio.”

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

The information required by this item concerning the security ownership of certain beneficial owners and management and related stockholder matters are incorporated herein by reference to our definitive proxy statement for our 2022 annual meeting of stockholders, which will be filed with the SEC no later than 120 days after December 31, 2021, under the captions “Security Ownership of Certain Beneficial Owners and Management” and “Equity Compensation Plan Information.”

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

The information required by this item concerning certain relationships and related person transactions and director independence is incorporated herein by reference to our definitive proxy statement for our 2022 annual meeting of stockholders, which will be filed with the SEC no later than 120 days after December 31, 2021, under the captions “Certain Relationships and Related Party Transactions” and “the Board and its Committees.”

Item 14. Principal Accountant Fees and Services

The information required by this item concerning principal accounting fees and services is incorporated herein by reference to our definitive proxy statement for our 2022 annual meeting of stockholders, which will be filed with the SEC no later than 120 days after December 31, 2021, under the caption “Proposal 3 — Ratification of Appointment of the Company’s Independent Registered Public Accounting Firm.”

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) Financial Statements and Financial Statement Schedules

Refer to Index to Financial Statements on page 49.

All schedules are omitted as information required is inapplicable or the information is presented in the consolidated financial statements and the related notes.

(b) Exhibits

The documents listed in the Index to Exhibits are filed, furnished or incorporated by reference as part of this Annual Report, and such Index to Exhibits are incorporated herein by reference.

Item 16. Form 10-K Summary

None.

INDEX TO EXHIBITS

Exhibit Number	Description
1.1	Underwriting Agreement, dated June 7, 2021, by and among Liberty Oilfield Services Inc., R/C Energy IV Direct Partnership, L.P., R/C IV Liberty Holdings, L.P. and Morgan Stanley & Co. LLC (14)
2.1	Master Reorganization Agreement, dated as of January 11, 2018, by and among Liberty Oilfield Services Inc., Liberty Oilfield Services Holdings LLC, Liberty Oilfield Services New HoldCo LLC, and the other parties named therein (2)
2.2	Master Transaction Agreement, dated as of August 31, 2020, by and among Schlumberger Technology Corporation, Schlumberger Canada Limited, Liberty Oilfield Services Holdings LLC, Liberty Canada Operations Inc. and Liberty Oilfield Services Inc. (11)
3.1	Amended and Restated Certificate of Incorporation of Liberty Oilfield Services Inc. (2)
3.2	Amended and Restated Bylaws of Liberty Oilfield Services Inc. (3)
4.1	Amended and Restated Stockholders Agreement, dated as of December 31, 2020, by and among Liberty Oilfield Services Inc., Riverstone and the Schlumberger Parties (12)
4.2	Description of the Registrant's Securities Registered pursuant to Section 12 of the Securities Exchange Act of 1934. (8)
10.1	Second Amended and Restated Limited Liability Company Operating Agreement of Liberty Oilfield Services New HoldCo LLC (2)
10.2	Form of Joinder Agreement to Second Amended and Restated Limited Liability Company Operating Agreement of Liberty Oilfield Services New HoldCo LLC (15)
10.3	Registration Rights Agreement, dated October 26, 2021, by and among Liberty Oilfield Services Inc. and the other parties named therein (15)
10.4	Tax Receivable Agreement, dated January 17, 2018, by and among Liberty Oilfield Services Inc., R/C Energy IV Direct Partnership, L.P., and R/C Energy IV Direct Partnership, L.P., as agent (2)
10.5	Tax Receivable Agreement, dated January 17, 2018, by and among Liberty Oilfield Services Inc., and the other parties named therein (2)
10.6	Amended and Restated Registration Rights Agreement, dated as of December 31, 2020, by and among Liberty Oilfield Services Inc., the Schlumberger Parties, and the Holders (12)
10.7	Liberty Oilfield Services Inc. Long Term Incentive Plan (2)†
10.8	Credit Agreement, dated September 19, 2017, by and among Wells Fargo Bank, National Association, as Administrative Agent, Wells Fargo Bank, National Association, JPMorgan Chase Bank, N.A. and Citibank, N.A., as Joint Lead Arrangers, Wells Fargo Bank, National Association, as Book Runner, JPMorgan Chase Bank, N.A. and Citibank, N.A., as Syndication Agents, the lender parties thereto, Liberty Oilfield Services Holdings LLC, as Parent and Liberty Oilfield Services LLC and LOS Acquisition Co I LLC, each as a Borrower (1)
10.9	Amendment and Parent Joinder to Credit Agreement, dated January 17, 2018, by and among Liberty Oilfield Services Holdings LLC, Liberty Oilfield Services LLC, LOS Acquisition Co I LLC, Liberty Oilfield Services Inc., Liberty Oilfield Services New Holdco LLC, Wells Fargo Bank, National Association, as Administrative Agent, and the lenders signatory thereto (4)
1010	Second Amendment and Parent Joinder to Credit Agreement, dated March 21, 2018, by and among Liberty Oilfield Services LLC, LOS Acquisition Co I LLC, Liberty Oilfield Services Inc., Liberty Oilfield Services New Holdco LLC, R/C IV Non-U.S. LOS Corp, Wells Fargo Bank, National Association, as Administrative Agent, and the lenders signatory thereto (4)
10.11	Third Amendment to Credit Agreement, dated May 29, 2020, by and among Liberty Oilfield Services LLC, Liberty Oilfield Services Inc., Liberty Oilfield Services New Holdco LLC, R/C IV Non-U.S. LOS Corp, and Wells Fargo Bank, National Association as Administrative Agent, and the lenders signatory thereto (9)
10.12	Fourth Amendment to Credit Agreement, dated August 12, 2020, by and among Liberty Oilfield Services LLC, Liberty Oilfield Services Inc., Liberty Oilfield Services New Holdco LLC, R/C IV Non-U.S. LOS Corp, Wells Fargo Bank, National Association, as Administrative Agent, and the lenders signatory thereto (10)

10.13 Consent and Fifth Amendment to Credit Agreement, dated December 29, 2020, by and among Liberty Oilfield Services LLC, Liberty Oilfield Services Inc., Liberty Oilfield Services New Holdco LLC, R/C IV Non-U.S. LOS Corp, LOS Cibolo RE Investments, LLC, LOS Odessa RE Investments, LLC, ST9 Gas and Oil LLC, Wells Fargo Bank, National Association, as Administrative Agent, and the lenders signatory thereto (13)

10.14 Sixth Amendment to Credit Agreement and Second Amendment to Guaranty and Security Agreement, dated October 22, 2021, by and among Liberty Oilfield Services LLC, Liberty Oilfield Services Inc., Liberty Oilfield Services New HoldCo LLC, R/C IV Non-U.S. LOS Corp, LOS Solar Acquisition LLC, Freedom Proppant LLC, LOS Kermit LLC, LOS Cibolo RE Investments, LLC, LOS Odessa RE Investments, LLC, ST9 Gas and Oil LLC, Wells Fargo Bank, National Association, as Administrative Agent, and the lenders signatory thereto (15)

10.15 Joinder Agreement, dated December 31, 2021, by and among LOS Leasing Company LLC and Wells Fargo Bank, National Association, as Administrative Agent *

10.16 Credit Agreement, dated September 19, 2017, by and among Liberty Oilfield Services LLC and LOS Acquisition CO I LLC, each as Borrower, Liberty Oilfield Services Holdings LLC, as Parent Guarantor and U.S. Bank National Association as Agent (1)

10.17 Amendment and Joinder to Credit Agreement, dated January 17, 2018, by and among Liberty Oilfield Services Holdings LLC, Liberty Oilfield Services LLC, LOS Acquisition Co I LLC, Liberty Oilfield Services Inc., Liberty Oilfield Services New Holdco LLC, U.S. Bank National Association, as Administrative Agent, and the lenders signatory thereto (4)

10.18 Second Amendment and Joinder to Credit Agreement, dated March 21, 2018, by and among Liberty Oilfield Services LLC, LOS Acquisition Co I LLC, Liberty Oilfield Services Inc., Liberty Oilfield Services New Holdco LLC, R/C IV Non-U.S. LOS Corp, U.S. Bank National Association, as Administrative Agent, and the lenders signatory thereto (4)

10.19 Third Amendment to Credit Agreement, dated August 12, 2020, by and among Liberty Oilfield Services LLC, Liberty Oilfield Services Inc., Liberty Oilfield Services New Holdco LLC, R/C IV Non-U.S. LOS Corp, U.S. Bank National Association, as Administrative Agent, and the lenders signatory thereto (10)

10.20 Waiver, Consent and Fourth Amendment to Credit Agreement and First Amendment to Guaranty and Security Agreement, dated December 29, 2020, by and among Liberty Oilfield Services LLC, Liberty Oilfield Services Inc., Liberty Oilfield Services New Holdco LLC, R/C IV Non-U.S. LOS Corp, LOS Cibolo RE Investments, LLC, LOS Odessa RE Investments, LLC, ST9 Gas and Oil LLC, U.S. Bank National Association, as Administrative Agent, and the lenders signatory thereto (13)

10.21 Fifth Amendment to Credit Agreement, Second Amendment to Guaranty and Security Agreement and Termination of Right of First Offer Letter, dated October 22, 2021, by and among Liberty Oilfield Services LLC, Liberty Oilfield Services Inc., Liberty Oilfield Services New HoldCo LLC, R/C IV Non-U.S. LOS Corp, LOS Cibolo RE Investments, LLC, LOS Odessa RE Investments, LLC, ST9 Gas and Oil LLC, LOS Solar Acquisition LLC, Freedom Proppant LLC, LOS Kermit LLC, U.S. Bank National Association, as Administrative Agent, and the lenders signatory thereto (15)

10.22 Liberty Oilfield Services 401(k) Savings Plan (13)†

10.23 Form of Restricted Stock Unit Grant Notice and Restricted Stock Unit Award Agreement under the Long Term Incentive Plan (5)†

10.24 Form of Restricted Stock Unit Grant Notice under the Long Term Incentive Plan (13)†

10.25 Form of Performance Restricted Stock Unit Grant Notice and Performance Restricted Stock Unit Agreement under the Liberty Oilfield Services Inc. Long Term Incentive Plan (6)†

10.26 Form of Change in Control Agreement (7)†

10.27 Form of Indemnification Agreement between the Company and each of its Directors and Executive Officers (8)

21.1 List of subsidiaries of Liberty Oilfield Services Inc. *

23.1 Consent of Deloitte & Touche LLP *

31.1 Certification of Chief Executive Officer pursuant to Rule 13a-14(a) as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 *

31.2 Certification of Chief Financial Officer pursuant to 13a-14(a) as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 *

32.1 Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 **

32.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 **
95	Mine Safety Disclosure *
101.INS	XBRL Instance Document *
101.SCH	XBRL Taxonomy Extension Schema Document *
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document *
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document *
101.LAB	XBRL Taxonomy Extension Label Linkbase Document *
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document *
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)*

(1) Incorporated by reference to the exhibits to the registrant's Registration Statement on Form S-1, as amended (SEC File 333-216050).

(2) Incorporated by reference to the exhibits to the registrant's Current Report on Form 8-K, filed on January 18, 2018.

(3) Incorporated by reference to the exhibits to the registrant's Amendment No. 1 to the Current Report on Form 8-K/A, filed on January 22, 2018.

(4) Incorporated by reference to the exhibits to the registrant's Annual Report on Form 10-K, filed on March 23, 2018.

(5) Incorporated by reference to the exhibits to the registrant's Quarterly Report on Form 10-Q, filed on May 10, 2018.

(6) Incorporated by reference to the exhibits to the registrant's Quarterly Report on Form 10-Q, filed on May 3, 2019.

(7) Incorporated by reference to the exhibits to the registrant's Current Report on Form 8-K, filed on August 30, 2019.

(8) Incorporated by reference to the exhibits to the registrant's Annual Report on Form 10-K, filed on February 27, 2020.

(9) Incorporated by reference to the exhibits to the registrant's Current Report on Form 8-K, filed on June 3, 2020.

(10) Incorporated by reference to the exhibits to the registrant's Quarterly Report on Form 10-Q, filed on October 30, 2020.

(11) Incorporated by reference to the exhibits to the registrant's Current Report on Form 8-K, filed on September 1, 2020.

(12) Incorporated by reference to the exhibits to the registrant's Current Report on Form 8-K, filed on January 4, 2021.

(13) Incorporated by reference to the exhibits to the registrant's Annual Report on Form 10-K, filed on February 24, 2021.

(14) Incorporated by reference to the exhibits to the registrant's Current Report on Form 8-K, filed on June 10, 2021.
Incorporated by reference to the exhibits to the registrant's Current Report on Form 8-K, filed on January 4, 2021.

(15) Incorporated by reference to the exhibits to the registrant's Quarterly Report on Form 10-Q, filed on October 28, 2021.

* Filed herewith.

** Furnished herewith.

† Denotes a management contract or 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.

LIBERTY OILFIELD SERVICES INC.

Date:	February 22, 2022	By:	/s/ Christopher A. Wright Christopher A. Wright *Chief Executive Officer*

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/ Christopher A. Wright Christopher A. Wright	Chief Executive Officer and Director (Principal Executive Officer)	February 22, 2022
/s/ Michael Stock Michael Stock	Chief Financial Officer (Principal Financial Officer)	February 22, 2022
/s/ Ryan T. Gosney Ryan T. Gosney	Chief Accounting Officer (Principal Accounting Officer)	February 22, 2022
/s/ Simon Ayat Simon Ayat	Director	February 22, 2022
/s/ Ken Babcock Ken Babcock	Director	February 22, 2022
/s/ Peter A. Dea Peter A. Dea	Director	February 22, 2022
/s/ William F. Kimble William F. Kimble	Director	February 22, 2022
/s/ James R. McDonald James R. McDonald	Director	February 22, 2022
/s/ Gale A. Norton Gale A. Norton	Director	February 22, 2022
/s/ Audrey Robertson Audrey Robertson	Director	February 22, 2022
/s/ Cary D. Steinbeck Cary D. Steinbeck	Director	February 22, 2022

Index to Financial Statements

Liberty Oilfield Services Inc.

MANAGEMENT’S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

The management of Liberty Oilfield Services Inc. is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) of the Securities Exchange Act.

Internal control over financial reporting, no matter how well designed, has inherent limitations. Therefore, a system of internal control over financial reporting can provide only reasonable assurance and may not prevent or detect misstatements. Further, because of changes in conditions, effectiveness of internal controls over financial reporting may vary over time.

Under the supervision of, and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2021 based on the framework and criteria established in *Internal Control-Integrated Framework (2013)*, issued by the Committee of Sponsoring Organizations of the Treadway Commission.

Based on this evaluation, management concluded that, as of December 31, 2021, our internal control over financial reporting was effective. Management’s evaluation of, and conclusion on, the effectiveness of internal control over financial reporting did not include the internal controls of the entity acquired in the PropX Acquisition, as defined herein, on October 26, 2021. The acquired business’ financial statements constitute 9% and 6% of net and total assets as of December 31, 2021.

The effectiveness of Liberty Oilfield Services Inc.’s internal control over financial reporting as of December 31, 2021 has been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report that is included herein.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the shareholders and the Board of Directors of Liberty Oilfield Services Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Liberty Oilfield Services Inc. and subsidiaries (the "Company") as of December 31, 2021 and 2020, the related consolidated statements of operations, changes in equity, and cash flows, for each of the three years in the period ended December 31, 2021, 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, 2021 and 2020, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2021, in conformity with accounting principles generally accepted in the United States of America.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2021, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated February 22, 2022, expressed an unqualified opinion on the Company's internal control over financial reporting.

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 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. 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 regarding 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.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current-period audit of the financial statements that was communicated or required to be communicated to the audit committee and that (1) relates to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Income Taxes — Tax Receivable Agreements — Refer to Note 12 to the financial statements

Critical Audit Matter Description

The amounts payable, as well as the timing of such payments, under the tax receivable agreements ("TRA") are dependent upon significant future events and assumptions, including among others: (i) the amount of the redeeming unit holder's tax basis in its Liberty Oilfield Services New HoldCo LLC class B units at the time of the relevant redemption, (ii) the characterization of the tax basis step-up, (iii) the depreciation and amortization periods that apply to the increase in tax basis (iv), the amount and timing of taxable income the Company generates in future periods until the TRA payable is settled, and (v) the portion of the Company's payments under the TRA that constitute imputed interest or give rise to depreciable or amortizable tax basis.

During the year ended December 31, 2021, exchanges of Liberty Oilfield Services New HoldCo LLC class B units and shares of Class B Common Stock resulted in an increase of $58.5 million in amounts payable pursuant to tax receivable agreements (“TRA payable”), and a net increase of $68.8 million in deferred tax assets, all of which are subject to the valuation allowance and remeasurement of TRA liability. At December 31, 2021, the Company's TRA payable was $37.6 million, all of which is presented as a component of long-term liabilities.

We identified the computation of adjustments to the TRA payable as a critical audit matter because of the multiple owners and complex calculations required to arrive at the correct tax basis upon which to calculate the corresponding TRA payable adjustment. This involved complexity in applying relevant tax law and an increased extent of effort, including the need to involve income tax specialists, when performing audit procedures to evaluate the reasonableness of management’s calculation of tax basis, iterative impact of the computation of adjustments to the TRA payable, and TRA payable as of year-end.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the computation of adjustments to the TRA payable included the following, among others:

- We tested the effectiveness of controls over the computation of adjustments to the TRA payable, including management’s calculation of the step-up in tax basis that serves as the basis for the computation of adjustments to the TRA payable.

- With the assistance of our income tax specialists, we read the individual TRAs and compared the terms in the agreements for consistency with the mathematical model used by management to calculate the adjustments to the TRA payable.

- With the assistance of our income tax specialists, we evaluated management’s computation of adjustments to the TRA payable, and the TRA payable as of year-end that is payable over the contractual period by comparing to our independently recalculated value, taking into account the various class B unit exchanges for Class B Common Stock occurring during the year as well as the adjustments in the TRA payable for each exchange.

/s/ DELOITTE & TOUCHE LLP

Denver, Colorado
February 22, 2022

We have served as the Company’s auditor since 2016.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the shareholders and the Board of Directors of Liberty Oilfield Services Inc.

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Liberty Oilfield Services Inc. and subsidiaries (the "Company") as of December 31, 2021, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2021, based on criteria established in *Internal Control — Integrated Framework (2013)* issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended December 31, 2021, of the Company and our report dated February 22, 2022, expressed an unqualified opinion on those financial statements.

As described in Management's Report on Internal Control Over Financial Reporting, management excluded from its assessment the internal control over financial reporting at Proppant Express Solutions, LLC ("PropX"), which was acquired on October 26, 2021 and whose financial statements constitute 9% and 6% of net and total assets, respectively of the consolidated financial statement amounts as of and for the year ended December 31, 2021. Accordingly, our audit did not include the internal control over financial reporting at PropX.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the 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 audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed 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. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) 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.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. 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.

/s/ DELOITTE & TOUCHE LLP

Denver, Colorado
February 22, 2022

LIBERTY OILFIELD SERVICES INC.
Consolidated Balance Sheets
As of December 31, 2021 and 2020
(Dollars in thousands, except share data)

	2021	2020
Assets		
Current assets:		
Cash and cash equivalents	$ 19,998	$ 68,978
Accounts receivable—trade, net of allowances for credit losses of $884 and $773, respectively	298,531	244,433
Unbilled revenue	108,923	69,516
Inventories	134,593	118,568
Prepaid and other current assets (including receivables from related parties of $0 and $24,708, respectively)	68,332	65,638
Total current assets	630,377	567,133
Property and equipment, net	1,199,287	1,120,950
Finance lease right-of-use assets	18,201	38,733
Operating lease right-of-use assets	109,899	75,878
Other assets	82,289	81,888
Deferred tax asset	607	5,360
Total assets	$ 2,040,660	$ 1,889,942
Liabilities and Equity		
Current liabilities:		
Accounts payable (including payables to related parties of $2,732 and $0, respectively)	$ 288,801	$ 193,338
Accrued liabilities (including amounts due to related parties of $1,142 and $0, respectively)	235,115	118,383
Deferred revenue	4,552	—
Current portion of long-term debt, net of discount of $743 and $1,386, respectively	1,007	364
Current portion of finance lease liabilities	8,743	20,580
Current portion of operating lease liabilities	31,029	23,481
Total current liabilities	569,247	356,146
Long-term debt, net of discount of $1,270 and $1,054, respectively, less current portion	121,445	105,411
Deferred tax liability	563	—
Payable pursuant to tax receivable agreements, including payables to related parties of $0 and $27,173, respectively	37,555	56,594
Noncurrent portion of finance lease liabilities	4,445	11,318
Noncurrent portion of operating lease liabilities	76,966	50,430
Total liabilities	810,221	579,899
Commitments & contingencies (Note 15)		
Stockholders' equity:		
Preferred Stock, $0.01 par value, 10,000 shares authorized and none issued and outstanding	—	—
Common Stock:		
Class A, $0.01 par value, 400,000,000 shares authorized and 183,385,111 issued and outstanding as of December 31, 2021 and 157,952,213 issued and outstanding as of December 31, 2020	1,834	1,579
Class B, $0.01 par value, 400,000,000 shares authorized and 2,632,347 issued and outstanding as of December 31, 2021 and 21,550,282 issued and outstanding as of December 31, 2020	26	216
Additional paid in capital	1,367,642	1,125,554
(Accumulated deficit) retained earnings	(155,954)	23,288
Accumulated other comprehensive (loss)	(306)	—
Total stockholders' equity	1,213,242	1,150,637
Non-controlling interest	17,197	159,406
Total equity	1,230,439	1,310,043
Total liabilities and equity	$ 2,040,660	$ 1,889,942

See Notes to Consolidated Financial Statements.

LIBERTY OILFIELD SERVICES INC.
Consolidated Statements of Operations
For the Years Ended December 31, 2021, 2020, and 2019
(In thousands, except per share data)

	2021	2020	2019
Revenue:			
Revenue	$ 2,447,140	$ 965,787	$ 1,972,073
Revenue—related parties	23,642	—	18,273
Total revenue	2,470,782	965,787	1,990,346
Operating costs and expenses:			
Cost of services (exclusive of depreciation, depletion, and amortization shown separately below)	2,249,926	857,981	1,621,180
General and administrative	123,406	84,098	97,589
Transaction, severance and other costs	15,138	21,061	—
Depreciation, depletion, and amortization	262,757	180,084	165,379
Loss (gain) on disposal of assets	779	(411)	2,601
Total operating costs and expenses	2,652,006	1,142,813	1,886,749
Operating (loss) income	(181,224)	(177,026)	103,597
Other (income) and expense:			
Gain on remeasurement of liability under tax receivable agreement	(19,039)	—	—
Interest income	(2)	(297)	(983)
Interest income—related party	—	(263)	(1,821)
Interest expense	15,605	15,065	17,485
Total other (income) expense, net	(3,436)	14,505	14,681
Net (loss) income before income taxes	(177,788)	(191,531)	88,916
Income tax expense (benefit)	9,216	(30,857)	14,052
Net (loss) income	(187,004)	(160,674)	74,864
Less: Net (loss) income attributable to non-controlling interests	(7,760)	(45,091)	35,861
Net (loss) income attributable to Liberty Oilfield Services Inc. stockholders	$ (179,244)	$ (115,583)	$ 39,003
Net (loss) income attributable to Liberty Oilfield Services Inc. stockholders per common share:			
Basic	$ (1.03)	$ (1.36)	$ 0.54
Diluted	$ (1.03)	$ (1.36)	$ 0.53
Weighted average common shares outstanding:			
Basic	174,019	85,242	72,334
Diluted	174,019	85,242	105,256

See Notes to Consolidated Financial Statements.

LIBERTY OILFIELD SERVICES INC.
Consolidated Statements of Comprehensive (Loss) Income
For the Years Ended December 31, 2021, 2020, and 2019
(In thousands)

	2021	2020	2019
Net (loss) income	$ (187,004)	$ (160,674)	$ 74,864
Other comprehensive loss			
Foreign currency translation	(102)	—	—
Comprehensive (loss) income	$ (187,106)	$ (160,674)	$ 74,864
Comprehensive (loss) income attributable to non-controlling interest	(7,556)	(45,091)	35,861
Comprehensive (loss) income attributable to Liberty Oilfield Services, Inc.	$ (179,550)	$ (115,583)	$ 39,003

See Notes to Consolidated Financial Statements.

LIBERTY OILFIELD SERVICES INC.
Consolidated Statements of Changes in Equity
For the Years Ended December 31, 2021 and 2020
(In thousands, except share and per unit data)

	Shares of Class A Common Stock	Shares of Class B Common Stock	Class A Common Stock, Par Value	Class B Common Stock, Par Value	Additional Paid in Capital	Retained Earnings	Accumulated Other Comprehensive Income	Total Stockholders' equity	Non-controlling Interest	Total Equity
Balance—December 31, 2020	157,952	21,550	$ 1,579	$ 216	$ 1,125,554	$ 23,288	$ —	$ 1,150,637	$ 159,406	$ 1,310,043
Exchange of Class B Common Stock for Class A Common Stock	21,359	(21,359)	214	(214)	153,641	—	—	153,641	(153,641)	—
Offering Costs	—	—	—	—	(1,247)	—	—	(1,247)	(75)	(1,322)
Issuance of Class A and Class B Common Stock for the PropX Acquisition	3,406	2,441	34	24	88,979	—	—	89,037	2,052	91,089
Impact of ownership changes from issuance of Class A and Class B Common Stock	—	—	—	—	(15,325)	—	—	(15,325)	15,325	—
Other distributions and advance payments to non-controlling interest unitholders	—	—	—	—	—	—	—	—	1,372	1,372
Stock based compensation expense	—	—	—	—	19,122	—	—	19,122	824	19,946
Vesting of restricted stock units	668	—	7	—	(3,082)	—	—	(3,075)	(510)	(3,585)
Restricted stock and RSU forfeitures	—	—	—	—	—	2	—	2	—	2
Currency translation adjustment	—	—	—	—	—	—	(306)	(306)	204	(102)
Net loss	—	—	—	—	—	(179,244)	—	(179,244)	(7,760)	(187,004)
Balance—December 31, 2021	183,385	2,632	$ 1,834	$ 26	$ 1,367,642	$ (155,954)	$ (306)	$ 1,213,242	$ 17,197	$ 1,230,439

	Shares of Class A Common Stock	Shares of Class B Common Stock	Class A Common Stock, Par Value	Class B Common Stock, Par Value	Additional Paid in Capital	Retained Earnings	Accumulated Other Comprehensive Income	Total Stockholders' equity	Non-controlling Interest	Total Equity
Balance - December 31, 2019	81,885	30,639	$ 819	$ 307	$ 410,596	$ 143,105	$ —	$ 554,827	$ 226,665	$ 781,492
Exchange of Class B Common Stock for Class A Common Stock	9,089	(9,089)	91	(91)	59,474	—	—	59,474	(59,474)	—
Effect of exchange on deferred tax asset, net of liability under tax receivable agreements	—	—	—	—	2,430	—		2,430	—	2,430
Issuance of Class A Common Stock, net of issuance costs	66,326	—	663	—	599,618	—	—	600,281	81,900	682,181
Impact of changes in ownership from the issuance of Class A Common Stock	—	—	—	—	46,400	—	—	46,400	(46,400)	—
Deferred tax impact of ownership changes from exchanges and repurchases	—	—	—	—	(6,337)	—	—	(6,337)	—	(6,337)
$0.05/share of Class A Common Stock dividend	—	—	—	—	—	(4,244)	—	(4,244)	—	(4,244)
$0.05/unit distributions to non-controlling unitholders	—	—	—	—	—	—	—	—	(1,532)	(1,532)
Other distributions and advance payments to non-controlling interest unitholders	—	—	—	—	(1)	—	—	(1)	569	568
Stock based compensation expense	—	—		—	12,976	—		12,976	4,163	17,139
Vesting of restricted stock units	657	—	7	—	407	—	—	414	(1,402)	(988)
Restricted stock and RSU Forfeitures	(5)	—	(1)	—	(9)	10	—	—	8	8
Net loss	—	—	—	—	—	(115,583)	—	(115,583)	(45,091)	(160,674)
Balance - December 31, 2020	157,952	21,550	$ 1,579	$ 216	$ 1,125,554	$ 23,288	$ —	$ 1,150,637	$ 159,406	$ 1,310,043

See Notes to Consolidated Financial Statements.

LIBERTY OILFIELD SERVICES INC.
Consolidated Statements of Cash Flows
For the Years Ended December 31, 2021, 2020, and 2019
(Dollars in thousands)

	2021	2020	2019
Cash flows from operating activities:			
Net (loss) income	$ (187,004)	$ (160,674)	$ 74,864
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation, depletion, and amortization	262,757	180,084	165,379
Loss (gain) on disposal of assets	779	(411)	2,601
(Gain) loss on tax receivable agreements	(19,039)	543	(122)
Amortization of debt issuance costs	2,037	2,232	2,205
Inventory write-down	—	1,087	1,953
Non-cash lease expense	3,823	3,668	3,192
Stock based compensation expense	19,946	17,139	13,592
Deferred income tax expense (benefit)	5,079	(25,546)	23,408
Provision for credit losses	745	4,877	1,053
Changes in operating assets and liabilities:			
Accounts receivable and unbilled revenue	(90,142)	53,057	(11,512)
Accounts receivable and unbilled revenue—related party	—	9,629	5,510
Inventories	(24,612)	2,137	(30,476)
Other assets	(30,955)	13,780	(6,464)
Prepaid and other current assets—related party	24,708	—	—
Deferred revenue	3,452	—	—
Accounts payable and accrued liabilities	160,584	(15,282)	22,386
Accounts payable and accrued liabilities—related party	3,874	—	(1,000)
Payment of operating lease liability	(565)	(895)	(5,469)
Net cash provided by operating activities	135,467	85,425	261,100
Cash flows from investing activities:			
Purchases of property and equipment and construction in-progress	(198,794)	(103,637)	(195,173)
Investment in sand logistics	(13,106)	—	—
Proceeds from sales of assets	25,406	3,368	826
Net cash used in investing activities	(186,494)	(100,269)	(194,347)
Cash flows from financing activities:			
Repayments of borrowings on term loan	(1,750)	(1,750)	(1,750)
Proceeds from borrowings on line-of-credit	274,000	—	—
Repayments of borrowings on line-of-credit	(256,000)	—	—
Payments on finance lease obligations	(7,363)	(11,663)	(12,143)
Class A Common Stock dividends and dividend equivalents upon RSU vesting	(168)	(4,431)	(14,776)
Per unit distributions to non-controlling interest unitholders	—	(1,532)	(7,747)
Other distributions and advance payments to non-controlling interest unitholders	1,372	(6,800)	(6)
Tax withholding on restricted stock units	(3,585)	(988)	(1,039)
Share repurchases	—	—	(18,398)
Payments of debt issuance costs	(3,120)	(63)	—
Payment of equity issuance costs	(1,330)	(1,641)	(1,516)
Net cash provided by (used in) financing activities	2,056	(28,868)	(57,375)
Net (decrease) increase in cash and cash equivalents	(48,971)	(43,712)	9,378
Translation effect on cash	(9)	—	—
Cash and cash equivalents—beginning of period	68,978	112,690	103,312
Cash and cash equivalents—end of period	$ 19,998	$ 68,978	$ 112,690
Supplemental disclosure of cash flow information:			
Net cash (received) paid for income taxes	$ (9,481)	$ (9,653)	$ 1,042
Cash paid for interest	$ 13,268	$ 11,218	$ 12,642
Non-cash investing and financing activities:			
Capital expenditures included in accounts payable and accrued liabilities	$ 57,475	$ 10,920	$ 32,143
Equity issued in exchange for assets and liabilities	$ 91,089	$ 683,822	$ —

See Notes to Consolidated Financial Statements.

Note 1—Organization and Basis of Presentation

Organization

Liberty Oilfield Services Inc. (the "Company") was incorporated as a Delaware corporation on December 21, 2016, to become a holding corporation for Liberty Oilfield Services New HoldCo LLC ("Liberty LLC") and its subsidiaries upon completion of a corporate reorganization (the "Corporate Reorganization") and planned initial public offering of the Company ("IPO"). The Company has no material assets other than its ownership of units in Liberty LLC ("Liberty LLC Units").

The Company, together with its subsidiaries, is a multi-basin provider of hydraulic fracturing services and goods, with a focus on deploying the latest technologies in the technically demanding oil and gas reservoirs in which it operates, principally in North Dakota, Colorado, Louisiana, Oklahoma, New Mexico, Wyoming, Texas and the provinces of Alberta and British Columbia, Canada.

Basis of Presentation

The accompanying consolidated financial statements were prepared using generally accepted accounting principles in the United States of America ("GAAP") and the instructions to Form 10-K, Regulation S-X and the rules and regulations of the Securities and Exchange Commission.

The accompanying consolidated financial statements and related notes present the consolidated financial position of the Company, the results of operations, cash flows, and equity of the Company as of and for the years ended December 31, 2021, 2020 and 2019.

The consolidated financial statements include the amounts of the Company and all majority owned subsidiaries where the Company has the ability to exercise control. All intercompany amounts have been eliminated in the presentation of the consolidated financial statements of the Company.

The Company's operations are organized into a single reportable segment, which consists of hydraulic fracturing and related goods and services.

Note 2—Significant Accounting Policies

Business Combinations

Business combinations are accounted for using the acquisition method of accounting in accordance with the *Accounting Standard Codification ("ASC") Topic 805 - Business Combinations,* as amended by Accounting Standards Update ("ASU") 2017-01, *Business Combinations (Topic 805), Clarifying the Definition of a Business.* The purchase price is allocated to the assets acquired and liabilities assumed based on their estimated fair values. Fair value of the acquired assets and liabilities is measured in accordance with the guidance of ASC 850, *Fair Value Measurements,* using discounted cash flows and other applicable valuation techniques. Any acquisition related costs incurred by the Company are expensed as incurred. Any excess purchase price over the fair value of the net identifiable assets acquired is recorded as goodwill if the definition of a business is met. Operating results of an acquired business are included in our results of operations from the date of acquisition. Refer to Note 3—Acquisitions.

Use of Estimates

The preparation of consolidated financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

The consolidated financial statements include certain amounts that are based on management's best estimates and judgments. The most significant estimates relate to the fair value of assets acquired and liabilities assumed, collectability of accounts receivable and estimates of allowance for doubtful accounts, the useful lives and salvage values of long-lived assets, future cash flows associated with long-lived assets, net realizable value of inventory, and equity unit valuation. These estimates may be adjusted as more current information becomes available.

Cash and Cash Equivalents

The Company considers all highly liquid instruments purchased with an original maturity of three months or less to be cash equivalents. The Company continually monitors its positions with, and the credit quality of, the financial institutions with which it has banking relationships. As of the balance sheet date, and periodically throughout the year, the Company has maintained balances in various operating accounts in excess of federally insured limits.

Accounts Receivable

On January 1, 2020, the Company adopted ASU 2016-13, *Financial Instruments-Credit Losses (Topic 326)*: *Measurement of Credit Losses on Financial Instruments* ("ASU 2016-13") using the modified-retrospective approach, which allows for a cumulative-effect adjustment to the consolidated balance sheet as of the beginning of the first reporting period in which the guidance is effective. Periods prior to the adoption date that are presented for comparative purposes are not adjusted.

The Company applies historic loss factors to its receivable portfolio segments that were not expected to be further impacted by current economic developments, and additional economic conditions factor to portfolio segments anticipated to experience greater losses in the current economic environment. Additionally, the Company continuously evaluates customers based on risk characteristics, such as historical losses and current economic conditions. Due to the cyclical nature of the oil and gas industry, the Company often evaluates its customers' estimated losses on a case-by-case basis. While there was no impact to the financial statements as a result of adoption of ASU 2016-13, as a result of two customers inability to pay, during the year ended December 31, 2021 the Company recorded a provision for credit losses of $0.7 million. During the year ended December 31, 2020 the Company recorded a provision for credit losses of $4.9 million related to the deteriorating economic conditions for the oil and gas industry brought on by the COVID-19 pandemic. Provisions for credit losses are included in general and administrative expenses in the accompanying consolidated statement of operations, in accordance with the new standard. Refer to "Credit Risk" within Note 9—Fair Value Measurements and Financial Instruments for additional disclosures required under ASU 2016-13.

Inventories

Inventories consist of raw materials used in the hydraulic fracturing process, such as proppants, chemicals, and field service equipment maintenance parts and other and are stated at the lower of cost, determined using the weighted average cost method, or net realizable value. Inventories are charged to cost of services as used when providing hydraulic fracturing services. Net realizable value is the estimated selling prices in the ordinary course of business, less reasonably predictable cost of completion, disposal, and transportation.

Property and Equipment

Property and equipment are stated at cost. Depreciation and amortization expense is recognized on property and equipment, excluding land, utilizing the straight-line method over the estimated useful lives, ranging from two to 30 years. The Company estimates salvage values that it does not depreciate.

Construction in-progress, a component of property and equipment, represents long-lived assets not yet in service or being developed by the Company. These assets are not subject to depreciation until they are completed and ready for their intended use, at which point the Company reclassifies them to field services equipment or vehicles, as appropriate.

The Company assesses its long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability is assessed using undiscounted future net cash flows of assets grouped at the lowest level for which there are identifiable cash flows independent of the cash flows of other groups of assets. The Company determined the lowest level of identifiable cash flows to be at the asset group, which is the aggregate of the Company's hydraulic fracturing fleets that are in service. A long-lived asset is not recoverable if its carrying amount exceeds the sum of estimated undiscounted cash flows expected to result from the use and eventual disposition. When alternative courses of action to recover the carrying amount of the asset group are under consideration, estimates of future undiscounted cash flows take into account possible outcomes and probabilities of their occurrence. If the carrying amount of the asset is not recoverable, an impairment loss is recognized in an amount by which its carrying amount exceeds its estimated fair value, such that its carrying amount is adjusted to its estimated fair value, with an offsetting charge to impairment expense.

The Company measures the fair value of its property and equipment using the discounted cash flow method. The expected future cash flows used for impairment reviews and related fair value calculations are based on judgmental assessments of projected revenue growth, fleet count, utilization, gross margin rates, selling, general and administrative rates, working capital fluctuations, capital expenditures, discount rates and terminal growth rates.

During the year ended December 31, 2020, as a result of negative market indicators including the COVID-19 pandemic, the increased supply of low-priced oil, and customer cancellations, the Company concluded these triggering events could indicate possible impairment of property and equipment. The Company performed a quantitative and qualitative impairment analysis and determined that no impairment had occurred as of June 30, 2020. As of December 31, 2021 and 2020, the Company concluded that no additional triggering events had occurred, and no impairment was recognized during the years ended December 31, 2021 and 2020.

During 2019, the Company did not test its long-lived assets for recoverability as there were no triggering events. No impairment was recognized during the years ended December 31, 2019.

Major Maintenance Activities

The Company incurs maintenance costs on its major equipment. The determination of whether an expenditure should be capitalized or expensed requires management judgment in the application of how the costs incurred benefit future periods, relative to the Company's capitalization policy. Costs that either establish or increase the efficiency, productivity, functionality or life of a fixed asset are capitalized and depreciated over the remaining useful life of the asset.

Leases

On January 1, 2019, the Company adopted Accounting Standards Update ("ASU") No. 2016-02, *Leases* (Accounting Standard Codification ("ASC") Topic 842), as amended by other ASUs issued since February 2016 ("ASU 2016-02" or "ASC Topic 842"), using the modified retrospective transition method applied at the effective date of the standard. By electing this optional transition method, information prior to January 1, 2019 has not been restated and continues to be reported under the accounting standards in effect for the period (ASC Topic 840).

In accordance with ASC Topic 842, the Company determines if an arrangement is a lease at inception and evaluates identified leases for operating or finance lease treatment. Operating or finance lease right-of-use assets and liabilities are recognized at the commencement date based on the present value of lease payments over the lease term. The Company uses the rate implicit in the lease, when available, or an estimated fully collateralized incremental borrowing rate corresponding with the lease term and the information available at the commencement date in determining the present value of lease payments. Lease terms may include options to renew, however, the Company typically cannot determine its intent to renew a lease with reasonable certainty at inception.

Additionally, the Company is a lessor in several operating leases in which the lease equipment is carried at amortized cost. Depreciation expense is recorded on a straight-line basis over its useful life to the estimated residual value. The lessee may not purchase the leased equipment and must return such equipment by the lease's scheduled maturity date.

Deferred Financing Costs

Costs associated with obtaining debt financing are deferred and amortized to interest expense using the effective interest method. In accordance with ASU No. 2015-03 and 2015-15, for all periods the Company has reflected deferred financing costs related to term loan debt as a direct deduction from the carrying amount, and costs associated with line-of-credit arrangements as other assets.

Income Taxes

Deferred income taxes are computed using the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the consolidated financial statements. Deferred tax assets and liabilities are calculated using the enacted tax rates in effect for the year in which the deferred tax asset or liability is expected to reverse. The Company classifies all deferred tax assets and liabilities as non-current. The Company records Global Intangible Low Tax Income as a current period expense.

The Company evaluates its deferred tax assets quarterly and considers both positive and negative evidence in applying the guidance of ASC 740 Income Taxes ("ASC 740") related to the realizability of its deferred tax assets. On June 30, 2021, in accordance with ASC 740, the objective negative evidence of entering into a three year cumulative pre-tax book loss position prevented the consideration of the Company's subjective positive evidence of expected future profitability in evaluation the realizability of deferred tax assets. As a result, the Company recorded a valuation allowance against U.S. net deferred tax assets.

The Company recognizes the financial statement effects of a tax position when it is more-likely-than-not, based on the technical merits, that the position will be sustained upon examination. A tax position that meets the more-likely-than-not recognition threshold is measured as the largest amount of tax benefit that is greater than 50% likely of being realized upon ultimate settlement with a taxing authority. Previously recognized tax positions are reversed in the first period in which it is no longer more-likely-than-not that the tax position would be sustained upon examination. Income tax related interest and penalties, if applicable, are recorded as a component of the provision for income tax expense.

Tax Receivable Agreements

In connection with the IPO, on January 17, 2018, the Company entered into two Tax Receivable Agreements (the "TRAs") with the R/C Energy IV Direct Partnership, L.P. and certain legacy owners that continued to own Liberty LLC Units (each such person and any permitted transferee, a "Tax Receivable Agreement Holder" and together, the "Tax Receivable Agreement Holders"). The TRAs generally provide for the payment by the Company of 85% of the net cash savings, if any, in U.S. federal, state, and local income tax and franchise tax (computed using simplifying assumptions to address the impact of state and local taxes) that the Company actually realizes (or is deemed to realize in certain circumstances) in periods after the IPO as a result, as applicable to each Tax Receivable Agreement Holder, of (i) certain increases in tax basis that occur as a result of the Company's acquisition (or deemed acquisition for U.S. federal income tax purposes) of all or a portion of such Tax Receivable Agreement Holder's Liberty LLC Units in connection with the IPO or pursuant to the exercise of the right (the "Redemption Right") or the Company's right (the "Call Right"), (ii) any net operating losses available to the Company as a result of the Corporate Reorganization, and (iii) imputed interest deemed to be paid by the Company as a result of, and additional tax basis arising from, any payments the Company makes under the TRAs.

With respect to obligations the Company expects to incur under the TRAs (except in cases where the Company elects to terminate the TRAs early, the TRAs are terminated early due to certain mergers, asset sales, or other changes of control or the Company has available cash but fails to make payments when due), generally the Company may elect to defer payments due under the TRAs if the Company does not have available cash to satisfy its payment obligations under the TRAs or if its contractual obligations limit its ability to make such payments. Any such deferred payments under the TRAs generally will accrue interest. In certain cases, payments under the TRAs may be accelerated and/or significantly exceed the actual benefits, if any, the Company realizes in respect of the tax attributes subject to the TRAs. The Company accounts for amounts payable under the TRAs in accordance with ASC Topic 450, *Contingencies*.

If the Company experiences a change of control (as defined under the TRAs) or the TRAs otherwise terminate early, the Company's obligations under the TRAs could have a substantial negative impact on its liquidity and could have the effect of delaying, deferring or preventing certain mergers, asset sales, or other forms of business combinations or changes of control.

Share Repurchases

The Company accounts for the purchase price of repurchased Class A Common Stock in excess of par value ($0.01 per share of Class A Common Stock) as a reduction of additional paid-in capital, and will continue to do so until additional paid-in capital is reduced to zero. Thereafter, any excess purchase price will be recorded as an increase to accumulated deficit.

Revenue Recognition

Under ASC Topic 606-*Revenue from Contracts with Customers*, revenue recognition is based on the transfer of control, or the customer's ability to benefit from the services and products in an amount that reflects the consideration expected to be received in exchange for those services and products. In recognizing revenue for services and products, the transaction price is determined from sales orders or contracts with customers. Revenue is recognized at the completion of each fracturing stage, and in most cases the price at the end of each stage is fixed, however, in limited circumstances contracts may contain variable consideration.

Variable consideration typically may relate to discounts, price concessions and incentives. The Company estimates variable consideration based on the amount of consideration we expect to receive. The Company accrues revenue on an ongoing basis to reflect updated information for variable consideration as performance obligations are met.

The Company also assesses customers' ability and intention to pay, which is based on a variety of factors including historical payment experience and financial condition. Payment terms and conditions vary by contract type, although terms generally include a requirement of payment within 30 to 45 days.

In connection with the adoption of ASC Topic 842, the Company determined that certain of its service revenue contracts contain a lease component. The Company elected to adopt a practical expedient available to lessors, which allows the Company to combine the lease and non-lease components and account for the combined component in accordance with the accounting treatment for the predominant component. Therefore, the Company combines the lease and service component for certain of the Company's service contracts and continues to account for the combined component under ASC Topic 606, *Revenue from Contracts with Customers*.

Deferred Revenue

From time to time, the Company may require partial payment in advance from new customers to secure credit or from existing customers in order to secure additional hydraulic fracturing services. Initially, such payments are recorded in the accompanying consolidated financial statements as deferred revenue, and upon performance of the agreed services, the

Company recognizes revenue consistent with its revenue recognition policy described above. As of December 31, 2021 and 2020, the Company had $4.6 million and $0.0 million recorded as deferred revenue, respectively.

Transaction, Severance and Other Costs

During 2021, the Company incurred transaction and integration related costs in connection with the OneStim Acquisition (as defined below) and PropX Acquisition (as defined below). Such costs include investment banking, legal, accounting and other professional services provided in connection with closing the transaction and are expensed as incurred.

The Company incurred transaction costs in 2020 related to the OneStim Acquisition and severance and other costs related to the reduction in workforce in April 2020 and the commencement of furlough schedules for remaining employees in May 2020. Payments made to employees leaving the Company, as well as benefits paid to employees while on furlough are recorded to transaction, severance and other costs in the accompanying consolidated statements of operations for the year ended December 31, 2020.

Foreign Currency Translation

The Company records foreign currency translation adjustments from the process of translating the functional currency of the financial statements of its foreign subsidiary into the U.S. dollar reporting currency. The Canadian dollar is the functional currency of the Company's foreign subsidiary as it is the primary currency within the economic environment in which the subsidiary operates. Assets and liabilities of the subsidiary's operations are translated into U.S. dollars at the rate of exchange in effect on the balance sheet date and income and expenses are translated at the average exchange rate in effect during the reporting period. Adjustments resulting from the translation of the subsidiary's financial statements are reported in other comprehensive income.

Recently Adopted Accounting Standards

Simplification of Accounting for Income Taxes

In December 2019, the FASB issued ASU No. 2019-12, *Simplification of Accounting for Income Taxes*, which simplifies the accounting for income taxes by providing new guidance to reduce complexity and eliminate certain exceptions to the general approach to the income tax accounting model. The Company adopted this guidance effective January 1, 2021, which did not have a material impact on the accompanying consolidated financial statements.

Codification Improvements

In October 2020, the FASB issued ASU No. 2020-10, *Codification Improvements,* which clarifies various topics, including the addition of existing disclosure requirements to the relevant disclosure sections. This update does not change GAAP, and therefore, does not result in a significant change in the Company's accounting practices. The guidance is effective for fiscal periods beginning after December 15, 2020, as the amendment pertains to disclosure items only. The Company adopted the new rules effective January 1, 2021 and the adoption did not have a material impact on the accompanying consolidated financial statements.

Reference Rate Reform

In March 2020, the FASB issued ASU No. 2020-04, *Reference Rate Reform,* which provides temporary optional guidance to companies impacted by the transition away from the London Interbank Offered Rate ("LIBOR"). The guidance provides certain expedients and exceptions to applying GAAP in order to lessen the potential accounting burden when contracts, hedging relationships, and other transactions that reference LIBOR as a benchmark rate are modified. This guidance is effective upon issuance and expires on December 31, 2022. The Company is currently assessing the impact of the LIBOR transition and this ASU on the Company's consolidated financial statements.

Business Combinations: Accounting for Contract Assets and Contract Liabilities from Contracts with Customers

In October 2021, the FASB issued ASU No. 2021-08, *Business Combinations: Accounting for Contract Assets and Contract Liabilities from Contracts with Customers,* which changes the accounting for the recognition and measurement of contract assets and contract liabilities acquired in a business combination in accordance with ASC 606. The update changes GAAP surrounding the recognition of contract assets and contract liabilities from fair value on the acquisition date to guidance under ASC 606. The guidance is effective for fiscal periods beginning after December 15, 2022. The Company adopted the new rules upon issuance and the adoption did not have a material impact on the accompanying consolidated financial statements.

Reclassifications

Certain amounts in the prior period financial statements have been reclassified from general and administrative to transaction, severance and other costs in the accompanying consolidated statements of operation to conform to the presentation of the current period financial statements. These reclassifications had no effect on the previously reported net income or loss.

Note 3—Acquisitions

PropX Acquisition

On October 26, 2021, the Company entered into the certain Master Transaction Agreement (the "Transaction Agreement") with Proppant Express Investments, LLC to acquire the assets and liabilities of Proppant Express Solutions, LLC "PropX", which provides last-mile proppant delivery solutions, including proppant handling equipment and logistics software across North America. PropX was acquired in exchange for $11.9 million in cash and 3,405,526 shares of the Company's Class A Common Stock, par value $0.01 per share (the "Class A Common Stock") and 2,441,010 shares of the Company's Class B Common Stock, par value $0.01 per share (the "Class B Common Stock", and together with the Class A Common Stock, the "Common Stock"), for total consideration of $103.0 million based on the October 26, 2021 closing price of Class A Common Stock of $15.58. In connection with the issuance of 2,441,010 shares of Class B Common Stock, Liberty LLC also issued 2,441,010 Liberty LLC Units to the Company. The Liberty LLC Units are redeemable for an equivalent number of shares of Class A Common Stock at anytime, at the election of the shareholder.

The Company accounted for the PropX Acquisition using the acquisition method of accounting. The aggregate purchase price noted above was allocated to the major categories of assets acquired and liabilities assumed based upon their estimated fair value at the date of the acquisition. The estimated fair values of certain assets and liabilities require significant judgments and estimates. The majority of the measurements of assets acquired and liabilities assumed, are based on inputs that are not observable in the market and thus represent Level 3 inputs.

In accordance with ASC Topic 805, an acquirer is allowed a period, referred to as the measurement period, in which to complete its accounting for the transaction. Such measurement period ends at the earliest date that the acquirer a) receives the information necessary or b) determines that it cannot obtain further information, and such period may not exceed one year. As the PropX Acquisition closed on October 26, 2021 the Company is in the process of completing the initial purchase price allocation, particularly as it relates to current assets and current liabilities.

The following table summarizes the fair value of the consideration transferred in the PropX Acquisition and the preliminary allocation of the purchase price to the fair value of the assets acquired and liabilities assumed as of October 26, 2021, the date of the closing of the PropX Acquisition:

($ in thousands)		
Total Purchase Consideration:		
Consideration	$	103,023
Cash and cash equivalents	$	53
Accounts receivable and unbilled revenue		4,089
Inventory		8
Prepaid and other current assets		1,722
Property and equipment **(1)**		94,137
Intangible assets (included in other assets in the accompanying consolidated balance sheet as of December 31, 2021) **(2)**		7,100
Total identifiable assets acquired		107,109
Accounts payable		2,152
Accrued liabilities		1,934
Total liabilities assumed		4,086
Total purchase consideration	$	103,023

(1) Useful lives average of 10 years, see Note 5—Property and Equipment
(2) Definite lived intangibles with an amortization period ranging from seven to 10 years

Transaction costs, costs associated with issuing additional equity and integration costs were recognized separately from the acquisition of assets and assumptions of liabilities in the PropX Acquisition. Transaction costs consist of legal and professional fees. Integration costs consist of expenses incurred to integrate PropX's operations, aligning accounting processes and procedures, and integrating its enterprise resource planning system with those of the Company. Merger and integration costs are expensed as incurred, and equity offering costs were recorded as a reduction to additional paid in capital.

The Company's consolidated statements of operations for the year ended December 31, 2021 includes 66 days of PropX operations as the PropX Acquisition closed on October 26, 2021. The Company does not present pro forma financial information for the periods prior to the PropX Acquisition as such information, after elimination of PropX's historical transactions with the Company, is not materially different than the results presented in the accompanying Consolidated Statements of Operations for years ended December 31, 2021 and 2020.

OneStim Acquisition

On August 31, 2020 the Company and certain of its subsidiaries entered into the certain Master Transaction Agreement (the "Transaction Agreement") with Schlumberger Technology Corporation and Schlumberger Canada Limited (collectively "Schlumberger"), pursuant to which the Company acquired certain assets and liabilities of Schlumberger's OneStim® business, which provides hydraulic fracturing pressure pumping services in onshore United States and Canada (such entire business of Schlumberger "OneStim," and the portion of OneStim acquired pursuant to the Transaction Agreement the "Transferred Business") in exchange for 57,377,232 shares of Class A Common Stock and a non-interest bearing demand promissory note (the "Canadian Buyer Note" and such acquisition, the "OneStim Acquisition"). The Canadian Buyer Note was settled for 8,948,902 shares of Class A Common Stock, and a total of 66,326,134 shares of Class A Common Stock were issued in connection with the OneStim Acquisition. Effective December 31, 2020, Schlumberger owned approximately 37.0% of the Company's issued and outstanding shares of Common Stock. In connection with the issuance of 66,326,134 shares of Class A Common Stock, Liberty LLC also issued 66,326,134 Liberty LLC Units to the Company.

The OneStim Acquisition was completed for total consideration of approximately $683.8 million based on the value of the Canadian Buyer Note and the closing price of the Class A Common Stock on December 31, 2020. The Company accounted for the OneStim Acquisition using the acquisition method of accounting. The aggregate purchase price noted above was allocated to the major categories of assets acquired and liabilities assumed based upon their estimated fair value at the date of the acquisition. The estimated fair values of certain assets and liabilities, including accounts receivable, require significant judgments and estimates. The majority of the measurements of assets acquired and liabilities assumed, are based on inputs that are not observable in the market and thus represent Level 3 inputs.

In accordance with ASC Topic 805, an acquirer is allowed a period, referred to as the measurement period, in which to complete its accounting for the transaction. Such measurement period ends at the earliest date that the acquirer a) receives the information necessary or b) determines that it cannot obtain further information, and such period may not exceed one year. As the OneStim Acquisition closed on December 31, 2020 the Company completed the purchase price allocation, particularly as it relates to current assets and current liabilities, which were subject to certain minimum working capital contribution requirements under the Transaction Agreement during the year ended December 31, 2021.

The following table summarizes the fair value of the consideration transferred in the OneStim Acquisition and the allocation of the purchase price to the fair value of the assets acquired and liabilities assumed (which are included within the accompanying consolidated balance sheet as of December 31, 2020) as of December 31, 2020, the date of the closing of the OneStim Acquisition:

($ in thousands)

Total Purchase Consideration:		
Consideration	$	683,822
Accounts receivable and unbilled revenue	$	128,602
Inventories		33,245
Prepaid and other current assets		30,859
Property and equipment **(1)**		559,716
Intangible assets (included in other assets in the accompanying consolidated balance sheet as of December 31, 2020) **(2)**		54,000
Total identifiable assets acquired		806,422
Accounts payable		75,522
Accrued liabilities		47,078
Total liabilities assumed		122,600
Total purchase consideration	$	683,822

(1) Useful lives ranging from two to greater than 25 years, see Note 5—Property and Equipment
(2) Definite lived intangibles with an average amortization period of five years

Transaction costs, costs associated with issuing additional equity and integration costs were recognized separately from the acquisition of assets and assumptions of liabilities in the OneStim Acquisition. Transaction costs consist of legal and professional fees and pre-merger notification fees. Equity offering costs consist of expenses incurred related to the Special Meeting of Stockholders, including the costs to prepare the required filings associated with such meeting, held on November 3, 2020. Integration costs consist of expenses incurred to integrate OneStim's operations, aligning accounting processes and procedures, and integrating its enterprise resource planning system with those of the Company. Merger and integration costs are expensed as incurred, and equity offering costs were recorded as a reduction to additional paid in capital.

The following combined pro forma information assumes the OneStim Acquisition occurred on January 1, 2019. The pro forma information presented below is for illustrative purposes only and does not reflect future events that occurred after December 31, 2020 or any operating efficiencies or inefficiencies that may result from the OneStim Acquisition. The information is not necessarily indicative of results that would have been achieved had the Company controlled OneStim during the periods presented.

	Years ended December 31,	
(unaudited, in thousands)	2020	2019
Revenue	$ 2,191,894	$ 5,174,346
Net loss	(1,052,807)	(1,074,735)
Less: Net loss attributable to non-controlling interests	(196,020)	(285,178)
Net loss attributable to Liberty Oilfield Services Inc. stockholders	$ (856,787)	$ (789,557)
Net loss attributable to Liberty Oilfield Services Inc. stockholders per common share:		
Basic	$ (5.65)	$ (5.69)
Diluted	$ (5.65)	$ (5.69)
Weighted average common shares outstanding:		
Basic	151,568	138,660
Diluted	151,568	138,660

The Company's consolidated statements of operations for the year ended December 31, 2020 does not include any results from OneStim operations as the OneStim Acquisition closed on December 31, 2020.

Transaction and integration costs incurred related to both transactions were $13.6 million and $8.5 million, for the years ended December 31, 2021 and 2020, respectively, and are recorded as a component of transaction, severance and other costs in the accompanying consolidated statements of operations. Equity offering costs totaled $1.3 million and $1.6 million, for the years ended December 31, 2021 and 2020, respectively, and are recorded as a reduction to additional paid in capital in the accompanying consolidated balance sheets.

Note 4—Inventories

Inventories consist of the following:

	December 31,	
($ in thousands)	2021	2020
Proppants	$ 23,413	$ 13,658
Chemicals	17,996	16,434
Maintenance parts	93,184	88,476
	$ 134,593	$ 118,568

The Company did not record any write-down to the inventory carrying value during the year ended December 31, 2021. During the year ended December 31, 2020, the lower of cost or net realizable value analysis resulted in the Company recording a write-down to inventory carrying values of $1.1 million, which is included as a component in cost of services in the consolidated statements of operations.

Note 5—Property and Equipment

Property and equipment consist of the following:

	Estimated useful lives (in years)	December 31,	
($ in thousands)		2021	2020
Land	N/A	$ 33,812	$ 38,346
Field services equipment	2-7	1,579,420	1,249,933
Vehicles	4-7	61,282	59,741
Lease Equipment	10	64,770	—
Buildings and facilities	5-30	148,555	156,109
Mineral reserves	>25	76,823	78,793
Office equipment and furniture	2-7	8,218	6,840
		1,972,880	1,589,762
Less accumulated depreciation and amortization		(863,194)	(622,530)
		1,109,686	967,232
Construction in-progress	N/A	89,601	153,718
		$ 1,199,287	$ 1,120,950

During the years ended December 31, 2021, 2020, and 2019, the Company recognized depreciation expense of $243.0 million, $169.9 million, and $153.6 million, respectively. Depletion expense for the year ended December 31, 2021 was $1.2 million.

During the year ended December 31, 2020, as a result of negative market indicators including the COVID-19 pandemic, the increased supply of low-priced oil, and customer cancellations, the Company concluded these triggering events could indicate possible impairment of property and equipment. The Company performed a quantitative and qualitative impairment analysis and determined that no impairment had occurred as of June 30, 2020. As of December 31, 2021, and 2020, the Company concluded that no additional triggering events occurred. Such analysis required management to make estimates and assumptions based on historical data and consideration of future market conditions. Given the uncertainty inherent in any projection, heightened by the possibility of unforeseen additional effects of COVID-19, actual results may differ from the estimates and assumptions used, or conditions may change, which could result in impairment charges in the future.

Note 6—Leases

Lessee Arrangements

The Company has operating and finance leases primarily for vehicles, equipment, railcars, office space, and facilities. The terms and conditions for these leases vary by the type of underlying asset.

Certain leases include variable lease payments for items such as property taxes, insurance, maintenance, and other operating expenses associated with leased assets. Payments that vary based on an index or rate are included in the measurement of lease assets and liabilities at the rate as of the commencement date. All other variable lease payments are excluded from the measurement of lease assets and liabilities, and are recognized in the period in which the obligation for those payments is incurred.

The components of lease expense for the years ended as of December 31, 2021, and 2020 were as follows:

($ in thousands)	2021	2020
Finance lease cost:		
Amortization of right-of-use assets	$ 5,490	$ 8,115
Interest on lease liabilities	1,598	1,770
Operating lease cost	40,365	25,817
Variable lease cost	4,183	2,935
Short-term lease cost	5,026	—
Sublease (income)	—	(113)
Total lease cost, net	$ 56,662	$ 38,524

Supplemental cash flow and other information related to leases as of December 31, 2021 and 2020 were as follows:

($ in thousands)	2021	2020
Cash paid for amounts included in measurement of liabilities:		
Operating leases	$ 37,121	$ 23,612
Finance leases	8,598	13,433
Right-of-use assets obtained in exchange for new lease liabilities:		
Operating leases	71,477	29,663
Finance leases	1,500	10,921

During the years ended December 31, 2021 and 2020, the Company amended certain finance leases, the change in terms of which caused the leases to be reclassified to operating leases. In connection with the amendments, the Company wrote-off finance lease right-of-use assets of $16.6 million and $22.5 million, respectively, and liabilities of $12.8 million and $19.0 million, respectively. Additionally, the Company recognized operating lease right-of-use assets of $14.3 million and $18.6 million and liabilities of $10.7 million and $15.1 million, respectively. There was no gain or loss recognized as a result of these amendments.

Lease terms and discount rates as of December 31, 2021 and 2020 were as follows:

	December 31, 2021	December 31, 2020
Weighted-average remaining lease term:		
Operating leases	5.2 years	5.9 years
Finance leases	1.5 years	1.5 years
Weighted-average discount rate:		
Operating leases	4.2 %	4.8 %
Finance leases	8.6 %	5.8 %

Future minimum lease commitments as of December 31, 2021 are as follows:

($ in thousands)	Finance	Operating
2022	$ 9,464	$ 34,829
2023	5,051	24,928
2024	—	18,306
2025	—	15,975
2026	—	8,388
Thereafter	—	17,833
Total lease payments	14,515	120,259
Less imputed interest	1,327	12,264
Total	$ 13,188	$ 107,995

The Company's vehicle leases typically include a residual value guarantee. For the Company's vehicle leases classified as operating leases, the total residual value guaranteed as of December 31, 2021 is $11.6 million; the payment is not probable and therefore has not been included in the measurement of the lease liability and right-of-use asset. For vehicle leases that are classified as finance leases, the Company includes the residual value guarantee, estimated in the lease agreement, in the financing lease liability.

Lessor Arrangements

The Company leases dry and wet sand containers and conveyor belts to customers through PropX. PropX leases to customers through operating leases, where the lessor for tax purposes is considered to be the owner of the equipment during the term of the lease. The lease agreements do not include options for the lessee to purchase the underlying asset at the end of the lease term for either a stated fixed price or fair market value. However, some of the leases contain a termination clause in which the customer can cancel the contract. The leases can be subject to variable lease payments if the customer requests more units than what is agreed upon in the lease. The Company does not record any lease assets or liabilities related to these variable items.

The carrying amount of equipment leased to others, included in property, plant and equipment, under operating leases as of December 31, 2021 and 2020 were as follows:

($ in thousands)	December 31, 2021	December 31, 2020
Equipment leased to others - at original cost	$ 64,770	$ —
Less: Accumulated depreciation	(1,377)	—
Equipment leased to others - net	$ 63,393	$ —

Future payments receivable for operating leases commenced and committed but not delivered as of December 31, 2021 are as follows:

($ in thousands)	
2022	$ 10,209
2023	10,099
2024	4,197
2025	800
2026	—
Thereafter	—
Total	$ 25,305

Revenues from operating leases for the years ended December 31, 2021 and 2020 were $3.2 million and $— million, respectively. The Company had no lease revenue and no lease receivables with related parties for the year ended December 31, 2021.

Note 7—Accrued Liabilities

Accrued liabilities consist of the following:

($ in thousands)	December 31, 2021	December 31, 2020
Accrued vendor invoices	$ 109,903	$ 61,210
Operations accruals	64,707	28,932
Accrued benefits and other	60,505	28,241
	$ 235,115	$ 118,383

Note 8—Debt

Debt consists of the following:

	December 31,	
	2021	2020
Term Loan Outstanding	$ 106,465	$ 108,215
Revolving Line of Credit	18,000	—
Deferred financing costs and original issue discount	(2,013)	(2,440)
Total debt, net of deferred financing costs and original issue discount	$ 122,452	$ 105,775
Current portion of long-term debt, net of discount	$ 1,007	$ 364
Long-term debt, net of discount and current portion	121,445	105,411
	$ 122,452	$ 105,775

On September 19, 2017, the Company entered into two credit agreements, a revolving line of credit up to $250.0 million (the “ABL Facility”) and a $175.0 million term loan (the “Term Loan Facility”, and together with the ABL Facility the “Credit Facilities”).

On October 22, 2021, the Company entered into an amendment to the ABL Facility (the “Revolving Credit Agreement Amendment”). The Revolving Credit Agreement Amendment further amends the credit agreement and guaranty and security agreement originally entered into by the parties on September 19, 2017, which governs the Company’s ABL Facility. Along with other revisions, the Revolving Credit Agreement Amendment (i) expanded the definition of borrowing base to include certain eligible US investment grade accounts, Canadian accounts solely after a specified event, and both chemical and spare parts inventory; (ii) increased the maximum revolver amount from $250.0 million to $350.0 million (with the ability to request an increase in the size of the ABL Facility by $75.0 million); (iii) increased certain indebtedness baskets; (iv) provided additional flexibility for a potential future internal structuring; (v) added new lenders to the facility; and (vi) extended the maturity date to the earlier of (a) October 22, 2026 and (b) to the extent the debt under the Term Loan Facility remains outstanding 90 days prior to the final maturity of the Term Loan Facility. The ABL Facility was initially scheduled to mature on the earlier to occur of (i) September 19, 2022 and (ii) to the extent the debt under the Term Loan Facility remains outstanding, 90 days prior to the final maturity of the Term Loan Facility.

Additionally, on October 22, 2021, the Company entered into a Fifth Amendment to Credit Agreement, Second Amendment to Guaranty and Security Agreement and Termination of Right of First Offer Letter. The Term Loan Credit Agreement Amendment further amends the credit agreement and guaranty and security agreement and terminates the Right of First Offer Letter originally entered into by the parties on September 19, 2017, which governs the Company’s Term Loan Facility. Along with other revisions, the Term Loan Credit Agreement Amendment (i) increased certain indebtedness baskets; (ii) provided additional flexibility for a potential future internal structuring; (iii) extended the maturity date through September 19, 2024; and (iv) terminated a right of first offer in favor of the Term Loan Facility lenders. The Term Loan Facility was initially scheduled to mature on September 19, 2022.

The weighted average interest rate on all borrowings outstanding as of December 31, 2021 and December 31, 2020 was 7.9% and 8.6%, respectively.

ABL Facility

Under the terms of the ABL Facility, up to $350.0 million may be borrowed, subject to certain borrowing base limitations based on a percentage of eligible accounts receivable and inventory. As of December 31, 2021, the borrowing base was calculated to be $269.0 million, and the Company had $18.0 million outstanding in addition to a letter of credit in the amount of $1.5 million, with $249.5 million of remaining availability. Borrowings under the ABL Facility bear interest at LIBOR or a base rate, plus an applicable LIBOR margin of 1.5% to 2.0% or base rate margin of 0.5% to 1.0%, as defined in the ABL Facility credit agreement. The unused commitment is subject to an unused commitment fee of 0.375% to 0.5%. Interest and fees are payable in arrears at the end of each month, or, in the case of LIBOR loans, at the end of each interest period. The ABL Facility matures on the earlier of (i) October 22, 2026, and (ii) to the extent the debt under the Term Loan Facility remains outstanding, 90 days prior to the final maturity of the Term Loan Facility, which matures on September 19, 2024. Borrowings under the ABL Facility are collateralized by accounts receivable and inventory, and further secured by the Company, Liberty LLC and R/C IV Non-U.S. LOS Corp., a Delaware corporation and a subsidiary of the Company, as parent guarantors.

Term Loan Facility

The Term Loan Facility provides for a $175.0 million term loan, of which $106.5 million remained outstanding as of December 31, 2021. Amounts outstanding bear interest at LIBOR or a base rate, plus an applicable margin of 7.625% or 6.625%, respectively, and borrowings as of December 31, 2021 incurred interest at a rate of 8.625%. The Company is required to make quarterly principal payments of 1% per annum of the outstanding principal balance, commencing on December 31, 2017, with final payment due at maturity on September 19, 2024. The Term Loan Facility is collateralized by the fixed assets of LOS and its subsidiaries, and is further secured by the Company, Liberty LLC and R/C IV Non-U.S. LOS Corp., a Delaware corporation and a subsidiary of the Company, as parent guarantors.

The Credit Facilities include certain non-financial covenants, including but not limited to restrictions on incurring additional debt and certain distributions. Moreover, the ability of the Company to incur additional debt and to make distributions is dependent on maintaining a maximum leverage ratio. The Term Loan Facility requires mandatory prepayments upon certain dispositions of property or issuance of other indebtedness, as defined, and annually a percentage of excess cash flow (25% to 50%, depending on leverage ratio, of consolidated net income less capital expenditures and other permitted payments, commencing with the year ending December 31, 2018). Certain mandatory prepayments and optional prepayments are subject to a prepayment premium of 3% of the prepaid principal declining annually to 1% during the first three years of the term of the Term Loan Facility.

The Credit Facilities are not subject to financial covenants unless liquidity, as defined in the respective credit agreements, drops below a specified level. Under the ABL Facility, the Company is required to maintain a minimum fixed charge coverage ratio, as defined in the credit agreement governing the ABL Facility, of 1.0 to 1.0 for each period if excess availability is less than 10% of the borrowing base or $12.5 million, whichever is greater. Under the Term Loan Facility, the Company is required to maintain a minimum fixed charge coverage ratio, as defined, of 1.2 to 1.0 for each trailing twelve-month period if the Company's liquidity, as defined, is less than $25.0 million for at least five consecutive business days.

The Company was in compliance with these covenants as of December 31, 2021.

Maturities of debt are as follows:

($ in thousands)

Years Ending December 31,		
2022	$	1,750
2023		1,750
2024		120,965
2025		—
2026		—
	$	124,465

Note 9—Fair Value Measurements and Financial Instruments

The fair values of the Company's assets and liabilities represent the amounts that would be received to sell those assets or that would be paid to transfer those liabilities in an orderly transaction at the reporting date. These fair value measurements maximize the use of observable inputs. However, in situations where there is little, if any, market activity for the asset or liability at the measurement date, the fair value measurement reflects the Company's own judgments about the assumptions that market participants would use in pricing the asset or liability. The Company discloses the fair values of its assets and liabilities according to the quality of valuation inputs under the following hierarchy:

- Level 1 Inputs: Quoted prices (unadjusted) in an active market for identical assets or liabilities.
- Level 2 Inputs: Inputs other than quoted prices that are directly or indirectly observable.
- Level 3 Inputs: Unobservable inputs that are significant to the fair value of assets or liabilities.

The classification of an asset or liability is based on the lowest level of input significant to its fair value. Those that are initially classified as Level 3 are subsequently reported as Level 2 when the fair value derived from unobservable inputs is inconsequential to the overall fair value, or if corroborating market data becomes available. Assets and liabilities that are initially reported as Level 2 are subsequently reported as Level 3 if corroborated market data is no longer available. Transfers occur at the end of the reporting period. There were no transfers into or out of Levels 1, 2, and 3 during the years ended December 31, 2021 and 2020.

The Company's financial instruments consist of cash and cash equivalents, accounts receivable, notes receivable, accounts payable, accrued liabilities, long-term debt, and finance and operating lease obligations. These financial instruments do not require disclosure by level. The carrying values of all the Company's financial instruments included in the accompanying balance sheets approximated or equaled their fair values at December 31, 2021 and 2020.

- The carrying values of cash and cash equivalents, accounts receivable and accounts payable (including accrued liabilities) approximated fair value at December 31, 2021 and 2020, due to their short-term nature.
- The carrying value of amounts outstanding under long-term debt agreements with variable rates approximated fair value at December 31, 2021 and 2020, as the effective interest rates approximated market rates.

Nonrecurring Measurements

Certain assets and liabilities are measured at fair value on a nonrecurring basis. These items are not measured at fair value on an ongoing basis but may be subject to fair value adjustments in certain circumstances. These assets and liabilities include those acquired through the PropX Acquisition and OneStim Acquisition, which are required to be measured at fair value on the acquisition date in accordance with *ASC Topic 805*. See Note 3 — Acquisitions.

Recurring Measurements

The fair values of the Company's cash equivalents measured on a recurring basis pursuant to ASC 820-10 *Fair Value Measurements and Disclosures* are carried at estimated fair value. Cash equivalents consist of money market accounts which the Company has classified as Level 1 given the active market for these accounts. As of December 31, 2021 and 2020, the Company had cash equivalents, measured at fair value, of $0.3 million and $21.3 million, respectively.

Nonfinancial assets

The Company estimates fair value to perform impairment tests as required on long-lived assets. The inputs used to determine such fair value are primarily based upon internally developed cash flow models and would generally be classified within Level 3 in the event that such assets were required to be measured and recorded at fair value within the consolidated financial statements. Although a triggering event occurred during the year ended December 31, 2020 (see Note 5— Property and Equipment), no such measurements were required as of December 31, 2021 and 2020.

Credit Risk

The Company's financial instruments exposed to concentrations of credit risk consist primarily of cash and cash equivalents, and trade receivables.

The Company's cash and cash equivalents balance on deposit with financial institutions total $20.0 million and $69.0 million as of December 31, 2021 and 2020, respectively, which exceeded FDIC insured limits. The Company regularly monitors these institutions' financial condition.

The majority of the Company's customers have payment terms of 45 days or less.

As of December 31, 2021 and 2020, the below customers accounted for the following percentages of the Company's consolidated accounts receivable and unbilled revenue and consolidated revenues, respectively:

	Portion of total of consolidated accounts receivable and unbilled revenue as of December 31,		Portion of consolidated revenues for the year ended December 31,		
	2021	2020	2021	2020	2019
Customer A	12 %	— %	— %	— %	— %
Customer B	— %	11 %	— %	12 %	— %
Customer C	— %	11 %	— %	11 %	— %
Customer D	— %	— %	— %	10 %	— %
Customer E	— %	— %	— %	10 %	— %

The Company mitigates the associated credit risk by performing credit evaluations and monitoring the payment patterns of its customers.

As of December 31, 2021, the Company had $0.9 million in allowance for credit losses and recorded a provision related to two entities inability to pay.

As of December 31, 2020, the Company had $0.8 million in allowance for credit losses. Subsequent to the adoption of ASU 2016-13 (see "Accounts Receivable" within Note 2—Significant Accounting Policies—*Recently Adopted Accounting Standards*) on January 1, 2020, the Company recognized a $4.9 million allowance for credit losses, to the Company's accounts receivables in consideration of both historic collection experience and the expected impact of deteriorating economic conditions for the oil and gas industry as of such date.

The Company applied historic loss factors to its receivable portfolio segments that were not expected to be further impacted by current economic developments, and an additional economic conditions factor to portfolio segments anticipated to experience greater losses in the current economic environment. While the Company has not experienced significant credit losses in the past and has not seen material changes to the payment patterns of its customers, the Company cannot predict with any certainty the degree to which the ongoing impacts of COVID-19, including the potential impact of periodically adjusted borrowing base limits, level of hedged production, or unforeseen well shut-ins may affect the ability of its customers to timely pay receivables when due. Accordingly, in future periods, the Company may revise its estimates of expected credit losses.

As of December 31, 2019 the Company recorded a provision related to one specific entity engaged in the business of oil and gas exploration and production that had filed for bankruptcy.

($ in thousands)	2021	2020	2019
Allowance for credit losses, beginning of year	$ 773	$ 1,053	$ —
Credit losses:			
Current period provision	745	4,877	1,053
Amounts written off, net of recoveries	(634)	(5,157)	—
Allowance for credit losses, end of year	$ 884	$ 773	$ 1,053

Note 10—Equity

Preferred Stock

As of December 31, 2021 and 2020 the Company had 10,000 shares of preferred stock authorized, par value $0.01, with none issued and outstanding. If issued, each class or series of preferred stock will cover the number of shares and will have the powers, preferences, rights, qualifications, limitations and restrictions determined by the Company's board of directors, which may include, among others, dividend rights, liquidation preferences, voting rights, conversion rights, preemptive rights and redemption rights. Except as provided by law or in a preferred stock designation, the holders of preferred stock will not be entitled to vote at or receive notice of any meeting of shareholders.

Class A Common Stock

The Company had a total of 183,385,111 and 157,952,213 shares of Class A Common Stock outstanding as of December 31, 2021 and 2020, none of which were restricted. Holders of Class A Common Stock are entitled to one vote per share on all matters to be voted upon by the stockholders and are entitled to ratably receive dividends when and if declared by the Company's board of directors.

Class B Common Stock

The Company had a total of 2,632,347 and 21,550,282 shares of Class B Common Stock outstanding as of December 31, 2021 and 2020, respectively. Holders of the Class B Common Stock are entitled to one vote per share on all matters to be voted upon by stockholders. Holders of Class A Common Stock and Class B Common Stock vote together as a single class on all matters presented to the Company's stockholders for their vote or approval, except with respect to amendment of certain provisions of the Company's certificate of incorporation that would alter or change the powers, preferences or special rights of the Class B Common Stock so as to affect them adversely, which amendments must be by a majority of the votes entitled to be cast by the holders of the shares affected by the amendment, voting as a separate class, or as otherwise required by applicable law.

Holders of Class B Common Stock do not have any right to receive dividends, unless the dividend consists of shares of Class B Common Stock or of rights, options, warrants or other securities convertible or exercisable into or exchangeable for shares of Class B Common Stock paid proportionally with respect to each outstanding share of Class B Common Stock and a dividend consisting of shares of Class A Common Stock or of rights, options, warrants or other securities convertible or exercisable into or exchangeable for shares of Class A Common Stock on the same terms is simultaneously paid to the holders of Class A Common Stock. Holders of Class B Common Stock do not have any right to receive a distribution upon liquidation or winding up of the Company.

Under the Second Amended and Restated Limited Liability Company Agreement of Liberty LLC (the "Liberty LLC Agreement"), each Liberty Unit Holder has, subject to certain limitations, the Redemption Right, which allows it to cause Liberty LLC to acquire all or a portion of its Liberty LLC Units, for, at Liberty LLC's election, (i) shares of Class A Common Stock at a redemption ratio of one share of Class A Common Stock for each Liberty LLC Unit redeemed, subject to conversion rate adjustments for stock splits, stock dividends and reclassification and other similar transactions or (ii) an equivalent amount of cash. Alternatively, upon the exercise of the Redemption Right, the Company (instead of Liberty LLC) will have the Call Right, which allows it to, for administrative convenience, acquire each tendered Liberty LLC Unit directly from the redeeming Liberty Unit Holder for, at its election, (x) one share of Class A Common Stock or (y) an equivalent amount of cash. In addition, upon a change of control of the Company, the Company has the right to require each holder of Liberty LLC Units (other than the Company) to exercise its Redemption Right with respect to some or all of such unitholder's Liberty LLC Units. In connection with any redemption of Liberty LLC Units pursuant to the Redemption Right or the Call Right, the corresponding number of shares of Class B Common Stock will be canceled.

Long Term Incentive Plan

On January 11, 2018, the Company adopted the Long Term Incentive Plan ("LTIP") to incentivize employees, officers, directors and other service providers of the Company and its affiliates. The LTIP provides for the grant, from time to time, at the discretion of the Company's board of directors or a committee thereof, of stock options, stock appreciation rights, restricted stock, restricted stock units, stock awards, dividend equivalents, other stock-based awards, cash awards, substitute awards and performance awards. Subject to adjustment in the event of certain transaction or changes of capitalization in accordance with the LTIP, 12,908,734 shares of Class A Common Stock have been reserved for issuance pursuant to awards under the LTIP. Class A Common Stock subject to an award that expires or is canceled, forfeited, exchanged, settled in cash or otherwise terminated without delivery of shares and shares withheld to pay the exercise price of, or to satisfy the withholding obligations with respect to, an award will again be available for delivery pursuant to other awards under the LTIP.

Restricted Stock Units

Restricted stock units ("RSUs") granted pursuant to the LTIP, if they vest, will be settled in shares of the Company's Class A Common Stock. RSUs were granted with vesting terms up to five years. Changes in non-vested RSUs outstanding under the LTIP during the year ended December 31, 2021 were as follows:

	Number of Units	Weighted Average Grant Date Fair Value per Unit
Non-vested as of December 31, 2020	2,183,034	$ 10.90
Granted	1,572,463	11.29
Vested	(959,356)	12.47
Forfeited	(55,080)	8.38
Outstanding at December 31, 2021	2,741,061	$ 10.62

Performance Restricted Stock Units

Performance restricted stock units ("PSUs") granted pursuant to the LTIP, if they vest, will be settled in shares of the Company's Class A Common Stock. PSUs were granted with a three year cliff vesting schedule, subject to a performance target compared to an index of competitors' results over a three year period as designated in the award. The Company records compensation expense based on the Company's best estimate of the number of PSUs that will vest at the end of the performance period. If such performance targets are not met, or are not expected to be met, no compensation expense is recognized and any recognized compensation expense is reversed. Changes in non-vested PSUs outstanding under the LTIP during the year ended December 31, 2021 were as follows:

	Number of Units	Weighted Average Grant Date Fair Value per Unit
Non-vested as of December 31, 2020	722,225	$ 12.04
Granted	584,720	12.95
Vested	—	—
Forfeited	—	—
Outstanding at December 31, 2021	1,306,945	$ 12.45

Stock-based compensation is included in cost of services and general and administrative expenses in the Company's consolidated statements of operations. The Company recognized stock based compensation expense of $19.9 million for the year ended December 31, 2021 and $17.1 million for the year ended December 31, 2020. There was approximately $25.5 million of unrecognized compensation expense relating to outstanding RSUs and PSUs as of December 31, 2021. The unrecognized compensation expense will be recognized on a straight-line basis over the weighted average remaining vesting period of two years.

Dividends

On April 2, 2020, the Company suspended future quarterly dividends until business conditions warrant reinstatement.

The Company paid cash dividends of $0.05 per share of Class A Common Stock on March 20, 2020 to stockholders of record as of March 6, 2020. Liberty LLC paid a distribution of total of $5.6 million, or $0.05 per Liberty LLC Unit, to all Liberty LLC unit holders as of March 6, 2020, $4.1 million of which was paid to the Company. The Company used the proceeds of the distribution to pay the dividend to all holders of shares of Class A Common Stock as of March 6, 2020, which totaled $4.1 million. Additionally, as of December 31, 2021 and 2020, the Company had $0.2 million and $0.4 million of accrued dividends payable related to restricted stock and RSUs to be paid upon vesting, respectively. Dividends related to forfeited restricted stock and RSUs will be forfeited.

Share Repurchase Program

On January 22, 2019, the Company's board of directors authorized an additional $100.0 million under the share repurchase plan through January 31, 2021.

During the years ended December 31, 2021 and 2020, no shares were repurchased under the share repurchase program and, as of December 31, 2021, no amounts remained authorized for future repurchases of Class A Common Stock under the share repurchase program.

The Company accounts for the purchase price of repurchased common shares in excess of par value ($0.01 per share of Class A Common Stock) as a reduction of additional paid-in capital, and will continue to do so until additional paid-in capital is reduced to zero. Thereafter, any excess purchase price will be recorded as a reduction to retained earnings.

Note 11—Net Loss per Share

Basic net loss per share measures the performance of an entity over the reporting period. Diluted net loss per share measures the performance of an entity over the reporting period while giving effect to all potentially dilutive common shares that were outstanding during the period. The Company uses the "if-converted" method to determine the potential dilutive effect of its Class B Common Stock and the treasury stock method to determine the potential dilutive effect of outstanding restricted stock and RSUs.

The following table reflects the allocation of net loss to common stockholders and net loss per share computations for the periods indicated based on a weighted average number of common stock outstanding:

(In thousands, except per share data)	Year Ended December 31, 2021	Year Ended December 31, 2020
Basic Net Loss Per Share		
Numerator:		
Net loss attributable to Liberty Oilfield Services Inc. Stockholders	$ (179,244)	$ (115,583)
Denominator:		
Basic weighted average shares outstanding	174,019	85,242
Basic net loss per share attributable to Liberty Oilfield Services Inc. Stockholders	$ (1.03)	$ (1.36)
Diluted Net Loss Per Share		
Numerator:		
Net loss attributable to Liberty Oilfield Services Inc. Stockholders	$ (179,244)	$ (115,583)
Effect of exchange of the shares of Class B Common stock for shares of Class A Common Stock	—	—
Diluted net loss attributable to Liberty Oilfield Services Inc. Stockholders	$ (179,244)	$ (115,583)
Denominator:		
Basic weighted average shares outstanding	174,019	85,242
Effect of dilutive securities:		
Restricted stock units	—	—
Class B Common Stock	—	—
Diluted weighted average shares outstanding	174,019	85,242
Diluted net loss per share attributable to Liberty Oilfield Services Inc. Stockholders	$ (1.03)	$ (1.36)

In accordance with GAAP, diluted weighted average common shares outstanding for the year ended December 31, 2021 exclude 7,052 weighted average shares of Class B Common Stock and 3,589 weighted average shares of restricted stock units. Additionally, diluted weighted average common shares outstanding for the year ended December 31, 2020 exclude 27,427 weighted average shares of Class B Common Stock, 207 weighted average shares of restricted stock, and 2,460 weighted average shares of restricted stock units.

Note 12—Income Taxes

The Company is a corporation and is subject to taxation in the United States, Canada and various state, local and provincial jurisdictions. Liberty LLC is treated as a partnership, and its income is passed through to its owners for income tax purposes. Liberty LLC's members, including the Company, are liable for federal, state and local income taxes based on their share of Liberty LLC's pass-through taxable income. As of December 31, 2021, tax reporting by the Company for the years ended December 31, 2018, 2019, and 2020 is subject to examination by the tax authorities. With few exceptions, as of December 31, 2021, the Company is no longer subject to U.S. federal, state or local examinations by tax authorities for tax years ended before December 31, 2017.

The components of the Company's income (loss) from continuing operations before income taxes on which the provision for income taxes was computed consisted of the following:

	Year Ended December 31,		
($ in thousands)	**2021**	**2020**	**2019**
United States	(191,774)	(191,531)	88,916
Foreign	13,986	—	—
Total	$ (177,788)	$ (191,531)	$ 88,916

The components of the provision for incomes taxes from continuing operations are summarized as follows:

	Year Ended December 31,		
($ in thousands)	**2021**	**2020**	**2019**
Current:			
Federal	$ —	$ (5,541)	$ (9,907)
State	29	230	551
Foreign	4,108	—	—
Total Current	$ 4,137	$ (5,311)	$ (9,356)
Deferred:			
Federal	6,125	(23,103)	23,419
State	(439)	(2,443)	(11)
Foreign	$ (607)	$ —	—
Total Deferred	$ 5,079	$ (25,546)	$ 23,408
Income tax expense (benefit)	$ 9,216	$ (30,857)	$ 14,052

Income tax expense (benefit) attributable to net loss before income taxes differed from the amounts computed by applying the statutory U.S. federal income tax rate of 21.0% to pre-tax income as a result of the following:

	Year Ended December 31,		
($ in thousands)	**2021**	**2020**	**2019**
Computed tax (benefit) expense at the statutory rate	$ (37,336)	$ (40,222)	$ 18,672
Increase (decrease) in tax expense resulting from:			
State and local income tax (benefit) expense, net	(5,204)	(2,212)	1,525
Non-controlling interest	1,565	9,463	(7,531)
Effect of foreign tax rates	478	—	—
Stock based compensation	(535)	2,157	227
Change in valuation allowance	50,111	—	—
Other, net	137	(43)	1,159
Total income tax expense (benefit)	$ 9,216	$ (30,857)	$ 14,052

The effective tax rate for the years ended December 31, 2021, 2020, and 2019 was (5.2)%, 16.1%, and 15.8%, respectively.

The Company recognized income tax benefit of $9.2 million during the year ended December 31, 2021. The Company's effective tax rate is less than the statutory federal income tax rate of 21.0% due to the Company recording a valuation allowance on its U.S. net deferred tax assets as of December 31, 2020, due to entering into a three year cumulative pre-tax book loss position, primarily as a result of COVID-19 related losses. The Company's effective tax rate is also less than the statutory rate because of foreign operations and the non-controlling interest's share of Liberty LLC's pass-through results for federal, state and local income tax reporting, upon which no taxes are payable by the Company.

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

($ in thousands)	December 31, 2021	December 31, 2020
Deferred tax assets:		
Federal net operating losses	$ 50,093	$ 15,632
State net operating losses	7,576	2,697
Realized tax benefit - TRAs	91,312	52,561
Intangibles	301	—
Other	219	—
Total deferred tax assets	149,501	70,890
Less valuation allowance	(91,336)	—
Net deferred tax assets	58,165	70,890
Deferred tax liabilities:		
Investment in Liberty LLC	$ (57,461)	$ (64,765)
Property and equipment	(97)	—
Other	(563)	(765)
Total deferred tax liabilities	(58,121)	(65,530)
Net deferred tax asset	$ 44	$ 5,360

During the quarter ended June 30, 2021 the Company established a valuation allowance resulting in the recognition of income tax expense on the Company's beginning U.S. net deferred tax assets of $6.1 million. As of December 31, 2021, the Company had significant deferred tax assets and liabilities. The deferred tax assets include U.S. federal and state net operating losses and the step-up in basis of depreciable assets under Section 754 ("Section 754") of the Internal Revenue Code of 1986, as amended, subject to the valuation allowance. In addition, the Company recorded a deferred tax asset and liability for the difference between the book value and the tax value of the Company's investment in Liberty LLC, in which a valuation allowance has been recorded against the net US deferred tax assets. The Company also has deferred tax assets for foreign operations driven by net deductible reversing temporary differences related to differences between book and taxable income. Since the Company's establishment of the valuation allowance, increased deferred tax benefit and deferred tax assets related to the step-up in basis of depreciation assets under Section 754 resulted in a change in valuation allowance of $85.2 million.

As of December 31, 2021, the Company has available U.S. federal net operating loss carryforwards to reduce future taxable income of $3.7 million expiring in 2027, and $231.5 million with no expiration date. Per the Coronavirus Aid, Relief and Economic Security ("CARES") Act enacted March 27, 2020, net operating losses ("NOL") incurred in 2018, 2019, and 2020 may be carried back to each of the five preceding taxable years to generate a refund of previously paid income taxes. The Company has applied for and expects to receive a NOL carryback refund to recover $5.5 million of cash taxes paid by the Company in 2018. This amount has been reflected as a receivable in prepaids and other assets. The remaining deferred tax asset for net operating losses available for carryforward are presented net of the Company's valuation allowance.

The Company may distribute cash from foreign subsidiaries to its U.S. parent as business needs arise. The Company has not provided for deferred income taxes on the undistributed earnings from certain foreign subsidiaries earnings as such earnings are considered to be indefinitely reinvested. If such earnings were to be distributed, any income and/or withholding tax would not be significant.

Uncertain Tax Positions

The Company records uncertain tax positions on the basis of a two-step process in which (1) the Company determines whether it is more likely than not the tax positions will be sustained on the basis of the technical merits of the position and (2) for those tax positions meeting the more likely than not recognition threshold, the Company recognizes the largest amount of tax benefit that is more than 50% likely to be realized upon ultimate settlement with the related tax authority.

The Company determined that no liability for unrecognized tax benefits for uncertain tax positions was required at December 31, 2021. In addition, the Company does not believe that it has any tax positions for which it is reasonably possible that it will be required to record a significant liability for unrecognized tax benefits within the next twelve months. If the Company were to record an unrecognized tax benefit, the Company will recognize applicable interest and penalties related to income tax matters in income tax expense.

Tax Distributions

Liberty LLC is treated as a partnership for income tax purposes. Federal, state and local taxes resulting from the pass-through taxable income of Liberty LLC are obligations of its members. Net profits and losses are generally allocated to the members of Liberty LLC (including the Company) in accordance with the number of Liberty LLC Units held by each member for tax purposes. The Liberty LLC Agreement provides for pro rata cash distributions, and in certain cases non-pro rata cash advances, to assist members (including the Company) in paying their income tax liabilities. The Liberty LLC Agreement requires any tax advances to be proportionally repaid in connection with any redemption of Liberty LLC Units pursuant to the Redemption Right or the Call Right. Net advances received by Liberty LLC from non-controlling interest holders were $1.4 million and $1.4 million, respectively, for the years ended December 31, 2021 and 2020.

Tax Receivable Agreements

The term of each TRA commenced on January 17, 2018, and will continue until all such tax benefits that are subject to such TRA have been utilized or expired, unless the Company experiences a change of control (as defined in the TRAs, which includes certain mergers, asset sales and other forms of business combinations) or the TRAs are terminated early (at the Company's election or as a result of its breach), and the Company makes the termination payments specified in such TRA.

The amounts payable, as well as the timing of any payments, under the TRAs are dependent upon significant future events and assumptions, including the timing of the redemptions of Liberty LLC Units, the price of our Class A Common Stock at the time of each redemption, the extent to which such redemptions are taxable transactions, the amount of the redeeming unit holder's tax basis in its Liberty LLC Units at the time of the relevant redemption, the characterization of the tax basis step-up, the depreciation and amortization periods that apply to the increase in tax basis, the amount of net operating losses available to the Company as a result of the Corporate Reorganization, the amount and timing of taxable income the Company generates in the future, the U.S. federal income tax rate then applicable, and the portion of the Company's payments under the TRAs that constitute imputed interest or give rise to depreciable or amortizable tax basis.

Prior to the Corporate Reorganization, one of the Legacy Owners distributed a portion of its member interest in Liberty Holdings to R/C IV Non-U.S. LOS Corp. ("R/C IV"). Subsequently, in conjunction with the Corporate Reorganization, R/C IV was contributed to the Company. At the time of the contribution, R/C IV had net operating loss carryforwards totaling $10.9 million for federal income tax purposes and $10.9 million for certain state income tax purposes, which became available for the Company's use as a result of the contribution. As a result of the Company being in a net income position in 2018 and the expected utilization of deferred tax assets, the Company recognized a deferred tax asset of $2.6 million and a corresponding $2.3 million liability pursuant to the TRAs. Of the contributed net operating loss carryforwards, $6.4 million for federal income tax purposes and $6.4 million of certain state income tax purposes have been utilized. As a result, the Company has remaining $0.8 million of deferred tax asset and a corresponding $0.7 million liability pursuant to the TRAs.

At December 31, 2021, the Company's liability under the TRAs was $37.6 million, all of which is presented as a component of long term liabilities, and the related deferred tax assets totaled $91.3 million of which a valuation allowance on the net deferred tax asset has been recorded. The Company also remeasured the liability under the TRAs as of December 31, 2021 as it relates to the recording of a valuation allowance and recorded a gain on remeasurement of liabilities subject to the TRAs of $19.0 million recorded as part of continuing operations. The reduction in the liability under the TRA is primarily driven by current generated net operating losses and amortization of expected tax benefits that is subject to the valuation allowance and not expected to be realized in the foreseeable future.

During the year ended December 31, 2021, exchanges of Liberty LLC Units and shares of Class B Common Stock resulted in an increase of $58.5 million in amounts payable under the TRAs, and a net increase of $68.8 million in deferred tax assets, all of which are subject to the valuation allowance and remeasurement of TRA liability discussed above. The Company did not make any TRA payments for the year ended December 31, 2021.

During the year ended December 31, 2020, exchanges of Liberty LLC Units and shares of Class B Common Stock resulted in an increase of $13.1 million in amounts payable under the TRAs, and a net increase of $15.5 million in deferred tax assets, all of which were recorded through equity. The Company also made TRA payments of $1.9 million and $5.5 million, totaling $7.4 million for the year ended December 31, 2020. The TRA payments were related to tax benefits realized in prior years and for the Company's NOL carryback of 2019 NOL to 2018 taxable income under the CARES Act.

Note 13—Defined Contribution Plan

The Company sponsors a 401(k) defined contribution retirement plan covering eligible employees. During 2020, in connection with other cost savings measures undertaken in response to declining demand for frac services as a result of the impacts of the COVID-19 pandemic, employer matching contributions were temporarily suspended from April 1, 2020 through December 31, 2020. The Company makes a matching contribution at a rate of $1.00 for each $1.00 of employee contribution, subject to a cap of 6% of the employee's salary and federal limits. Contributions made by the Company were $19.0 million, $4.2 million, and $15.7 million for the years ended December 31, 2021, 2020 and 2019, respectively.

Effective January 1, 2021 the Company restored its 6% matching contribution.

Note 14—Related Party Transactions

As of December 31, 2021 Schlumberger owns 56,826,134 shares of Class A Common Stock of the Company, or approximately 30.5% of the issued and outstanding shares of common stock of the Company, including Class A Common Stock and Class B Common Stock. Under the Transaction agreement, to the extent the net working capital, as defined in the Transaction Agreement, of the Transferred Business is less than $54.6 million, the difference shall be payable in cash to the Company. As of December 31, 2020, the Company recorded a receivable from Schlumberger of $24.7 million for the working capital settlement and an agreed upon $8.0 million true-up payment related to the estimated costs to bring certain assets to full working condition, which was collected during the three months ended March 31, 2021. During the three months ended September 30, 2021, the Company agreed on a working capital settlement from Schlumberger of $15.8 million, most of which was netted against transaction services costs and cash settlements during the transition services period. In conjunction with closing the OneStim Acquisition, the Company entered into a transition services agreement with Schlumberger, under which Schlumberger provides certain administrative and other transition services until the Company fully integrates the acquired business. During the year ended December 31, 2021, the Company incurred $5.7 million of fees for such transaction services. The Company does not expect to incur any additional transition services related fees in future periods.

During the year ended December 31, 2021, a subsidiary of the Company and Schlumberger entered into a property swap agreement under which the Company exchanged with Schlumberger a property acquired in the OneStim Acquisition and $4.9 million in cash for a separate property that the Company will utilize with its existing operations. The Company did not recognize any gain or loss on the transaction. In a separate transaction, the Company sold equipment to Schlumberger for $1.3 million and recognized a gain on the sale of equipment of $0.9 million.

Following the OneStim Acquisition, in the normal course of business, the Company purchases chemicals, proppant and other equipment and maintenance parts from Schlumberger and its subsidiaries. During the year ended December 31, 2021, total purchases from Schlumberger were approximately $28.2 million, and as of December 31, 2021 amounts due to Schlumberger were $2.7 million and $1.1 million included in accounts payable and accrued liabilities, respectively, in the consolidated balance sheet.

On June 7, 2021 R/C Energy IV Direct Partnership, L.P., a Delaware limited partnership ("R/C Direct") and R/C Liberty entered into an underwriting agreement, dated as of June 7, 2021, by and among the Company, Liberty LLC, R/C Direct, R/C Liberty and Morgan Stanley & Co. LLC, pursuant to which R/C Direct sold 3,707,187 shares of Class A Common Stock and R/C Liberty sold 8,592,809 shares of Class A Common Stock, at a price of $15.20 per share, to the underwriter (the "Sale"). In connection with the Sale, 6,918,142 shares of Class B Common Stock held by R/C Liberty were redeemed by the Company for an equal amount of Class A Common Stock. On June 10, 2021, the Sale closed. Following the Sale, R/C Direct and R/C Liberty no longer hold any Class A Common Stock or Class B Common Stock and are no longer considered related parties of the Company.

Prior to the Sale, R/C IV Liberty Holdings, L.P. ("R/C Liberty") exercised its redemption right and redeemed 10,269,457 shares of Class B Common Stock resulting in an increase in tax basis, as described under "Tax Receivable Agreements" in Note—12 Income Taxes, which was subsequently offset by an increase in valuation allowance during the year ended December 31, 2021. During the year ended December 31, 2020, R/C Liberty exercised its redemption right and redeemed 4,016,965 shares of Class B Common Stock resulting in the recognition of $6.1 million in amounts payable under the TRAs.

Effective on June 15, 2021, Audrey Robertson was appointed to the board of directors of Liberty Oilfield Services Inc. Ms. Robertson serves as the Chief Financial Officer of Franklin Mountain Energy, LLC ("Franklin Mountain"). During the year ended December 31, 2021 the Company performed hydraulic fracturing services for Franklin Mountain in the amount of $20.5 million or 0.8% of the Company's revenues for such period. Receivables from Franklin Mountain as of December 31, 2021 were $0.0 million.

Liberty Resources LLC, an oil and gas exploration and production company, and its successor entity (collectively, the "Affiliate") has certain common ownership and management with the Company. The amounts of the Company's revenue related to hydraulic fracturing services provided to the Affiliate for the years ended December 31, 2021, 2020 and 2019, were $2.8 million, $0.0 million and $18.3 million, respectively.

As of December 31, 2021 and 2020, there were no receivables within the Company's accounts receivable—related party line item attributable to the Affiliate. On June 24, 2019 (the "Agreement Date"), the Company entered into an agreement with the Affiliate to amend payment terms for outstanding invoices due as of the Agreement Date to be due on July 31, 2020. On September 30, 2019, the agreement was amended to extend the due date of the remaining amounts outstanding to October 31, 2020. Amounts outstanding from the Affiliate as of the Agreement Date were $15.6 million. The amounts outstanding, including all accrued interest was paid in full in January 2020. As of December 31, 2021 and December 31, 2020, no amounts were outstanding under the amended payment terms from the Affiliate. During the years ended December 31, 2021, 2020 and 2019, interest income from the Affiliate was $0.0 million, $0.3 million and $1.8 million, respectively. Receivables earned for services performed after the Agreement Date continue to be subject to normal 30-day payment terms, provided that any amount unpaid after 60 days is subject to 13% interest.

During 2016, Liberty Holdings entered into a future commitment to invest and become a non-controlling minority member in Proppant Express Investments, LLC, the owner of Proppant Express Solutions, LLC ("PropX"), a provider of proppant logistics equipment. LOS is party to a services agreement (the "PropX Services Agreement") whereby LOS is to provide certain administrative support functions to PropX, and LOS is to purchase and lease proppant logistics equipment from PropX. The PropX Services Agreement was terminated on May 29, 2018; however, the Company continues to lease equipment from PropX. Effective October 26, 2021, the Company completed the purchase of all membership interest in PropX, refer to Note 3—Acquisitions for further discussion of the transaction. During the period from January 1, 2021 until October 26, 2021, the Company leased proppant logistics equipment from PropX for $7.3 million. During the years ended December 31, 2020 and 2019 the Company leased proppant logistics equipment from PropX for $8.7 million and $9.8 million, respectively. Payables to PropX as of December 31, 2020 were $1.5 million.

R/C IV Liberty Big Box Holdings, L.P., a Riverstone Holdings LLC ("Riverstone") fund and a former significant stockholder of the Company, held a greater than 10% equity interest in PropX. Christopher Wright, the Chief Executive Officer, Michael Stock, the Chief Financial Officer and Ron Gusek, the President of the Company, held a less than 5% equity interest in PropX through Big Box Proppant Investments LLC. Cary Steinbeck, a director of the Company, served on the PropX board of the directors and held a less than 5% indirect equity interest in PropX. In addition, Brett Staffieri, a Riverstone appointed director, served on the board of the directors of the Company until June 15, 2021 and on the PropX board of directors until the acquisition date. The PropX Acquisition was reviewed and approved by the disinterested members of the Board and pursuant to the Company's related party transactions policy.

Note 15—Commitments & Contingencies

Purchase Commitments (tons are not in thousands)

The Company enters into purchase and supply agreements to secure supply and pricing of proppants and chemicals. As of December 31, 2021 and 2020, the agreements provide pricing and committed supply sources for the Company to purchase 89,317 and 1,580,750 tons, respectively, of proppant through June 30, 2022. Amounts above also include commitments to pay for transport fees on minimum amounts of proppants. Additionally, related proppant transload service commitments extend into 2023.

Future proppant, transload, equipment and mancamp commitments are as follows:

($ in thousands)		
2022	$	24,605
2023		1,353
2024		—
2025		—
2026		—
Thereafter		—
	$	25,958

Certain supply agreements contain a clause whereby in the event that the Company fails to purchase minimum volumes, as defined in the agreement, during a specific time period, a shortfall fee may apply. In circumstances where the Company does not make the minimum purchase required under the contract, the Company and its suppliers have a history of amending such minimum purchase contractual terms and in rare cases does the Company incur shortfall fees. If the Company were unable to make any of the minimum purchases and the Company and its suppliers cannot come to an agreement to avoid such fees, the Company could incur shortfall fees in the amounts of $16.1 million and $1.4 million for the years ended 2022 and 2023 respectively. Based on forecasted levels of activity, the Company does not currently expect to incur significant shortfall fees.

Included in the commitments for the year ending December 31, 2021 are approximately $8.5 million of payments expected to be made to Schlumberger, in conjunction with a permissive use agreement provided by Schlumberger, in the first quarter of 2022 for the use of certain light duty trucks, heavy tractors and field equipment used to various degrees in OneStim's frac and wireline operations. The Company is in negotiations with the third party owner of such equipment to lease or purchase some or all of such aforementioned vehicles and equipment, subject to agreement on terms and conditions. No gain or loss is expected upon consummation of any such agreement.

Litigation

Securities Class Actions

On March 11, 2020, Marshall Cobb, on behalf of himself and all other persons similarly situated, filed a putative class action lawsuit in the state District Court of Denver County, Colorado against the Company and certain officers and board members of the Company along with other defendants in connection with the IPO (the "Cobb Complaint"). The Cobb Complaint alleges that the Company and certain officers and board members of the Company violated Section 11 of the Securities Act of 1933 by virtue of inaccurate or misleading statements allegedly contained in the registration statement filed in connection with the IPO and requests unspecified damages and costs. The Cobb Plaintiffs also allege control person liability claims under Section 15 of the Securities Act of 1933 against certain officers and board members of the Company and other defendants.

On April 3, 2020, Marc Joseph, on behalf of himself and all other persons similarly situated, filed a putative class action lawsuit in the United States District Court in Denver, Colorado against the Company and certain officers and board members of the Company along with other defendants in connection with the IPO and requests unspecified damages and costs (the "Joseph Complaint," and collectively with the Cobb Complaint, the "Securities Lawsuits"). The Joseph Complaint, which is based on similar factual allegations made in the Cobb Complaint, alleges that the defendants violated Sections 11 and 12(a)(2) of the Securities Act of 1933 by virtue of inaccurate or misleading statements allegedly contained in the registration statement and prospectus filed in connection with the IPO. The Joseph Complaint also alleges control person liability claims under Section 15 of the Securities Act of 1933 against certain officers and board members of the Company and other defendants.

The Company has hired counsel and plans to vigorously defend against the allegations in the Securities Lawsuits.

Other Litigation

In addition to the matters described above, from time to time, the Company is subject to legal and administrative proceedings, settlements, investigations, claims and actions. The Company's assessment of the likely outcome of litigation matters is based on its judgment of a number of factors including experience with similar matters, past history, precedents, relevant financial and other evidence and facts specific to the matter. Notwithstanding the uncertainty as to the final outcome, based upon the information currently available, management does not believe any matters in aggregate will have a material adverse effect on its financial position or results of operations.

The Company cannot predict the ultimate outcome or duration of any lawsuit described in this report.

Note 16—Subsequent Events

As of the date of these financial statements, there were no significant subsequent events requiring disclosure or recognition in the consolidated financial statements and notes thereto.

JOINDER AGREEMENT

This **JOINDER AGREEMENT** (this "Agreement"), is entered into as of December 31, 2021, by and among **LOS LEASING COMPANY LLC**, a Texas limited liability company ("New Borrower"), and **WELLS FARGO BANK, NATIONAL ASSOCIATION**, a national banking association ("Wells Fargo"), as administrative agent for each member of the Lender Group and the Bank Product Providers (in such capacity, together with its successors and assigns in such capacity, "Agent").

WITNESSETH:

WHEREAS, pursuant to that certain Credit Agreement, dated as of September 19, 2017 (as amended, restated, supplemented or otherwise modified from time to time, the "Credit Agreement"), by and among Liberty Oilfield Services Inc., a Delaware corporation ("Ultimate Parent"), Liberty Oilfield Services New HoldCo LLC, a Delaware limited liability company ("New Holdco"), and R/C IV Non-U.S. LOS Corp, a Delaware corporation ("R/C IV"; and, together with Ultimate Parent and New Holdco, individually and collectively, "Parent"), Liberty Oilfield Services LLC, a Texas limited liability company ("Liberty"), Freedom Proppant LLC (f/k/a LOS Monahans LLC), a Delaware limited liability company ("Freedom Proppant"), and LOS Kermit LLC, a Delaware limited liability company ("LOS Kermit"; and together with Liberty, Freedom Proppant, New Borrower and those additional Persons that are joined as a party to the Credit Agreement by executing the form of Joinder attached thereto as Exhibit J-1, each, a "Borrower" and individually and collectively, jointly and severally, the "Borrowers"), the lenders party thereto as "Lenders" (such Lenders, together with their respective successors and assigns in such capacity, each, individually a "Lender" and, collectively the "Lenders"), Agent, Wells Fargo, JPMorgan Chase Bank, N.A., a national banking association ("Chase"), as joint lead arranger, Wells Fargo, as book runner, and Chase, as syndication agent, the Lender Group has agreed to make or issue Loans, Letters of Credit and other certain financial accommodations available to Borrowers from time to time pursuant to the terms and conditions thereof;

WHEREAS, initially capitalized terms used but not defined herein shall have the meanings ascribed to such terms in the Credit Agreement;

WHEREAS, pursuant to that certain Fee Letter, dated as of September 19, 2017 (as amended, restated, supplemented or otherwise modified from time to the, the "Fee Letter"), by and among Liberty and Agent, Liberty has agreed to pay certain fees to Agent on the terms set forth therein;

WHEREAS, New Borrower is required to become a party to the Credit Agreement by, among other things, executing and delivering this Agreement to Agent; and

WHEREAS, New Borrower has determined that the execution, delivery and performance of this Agreement directly benefit, and are within the corporate purposes and in the best interests of, New Borrower, by virtue of the financial accommodations available to New Borrower from time to time pursuant to the terms and conditions of the Credit Agreement.

NOW, THEREFORE, in consideration of the foregoing and the mutual covenants herein contained, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, each of the parties hereto hereby agrees as follow:

1. Joinder of New Borrower to the Credit Agreement. By its execution of this Agreement, New Borrower hereby (a) agrees that from and after the date of this Agreement it shall be a party to the Credit Agreement as a "Borrower" and shall be bound by all of the terms,

conditions, covenants, agreements and obligations set forth in the Credit Agreement, (b) accepts joint and several liability for the Obligations pursuant to the terms of the Loan Documents, and (c) confirms that, after giving effect to the applicable supplements to the Schedules to the Credit Agreement provided for in Section 2 below, the representations and warranties contained in Section 4 of the Credit Agreement, as they relate to New Borrower, are true, correct and complete, in all material respects (except that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof) on and as of the date hereof. New Borrower hereby agrees that each reference to a "Borrower" or the "Borrowers" in the Credit Agreement and the other Loan Documents shall include New Borrower. New Borrower acknowledges that it has received a copy of the Credit Agreement and the other Loan Documents and that it has read and understands the terms thereof.

2. Restatement of Certain Schedules to Credit Agreement. Attached as Exhibit A hereto are updated copies of each of Schedule 4.1(b), Schedule 4.1(c) and Schedule 4.25 to the Credit Agreement revised to include all information required to be provided therein and necessary to make the representations and warranties in the Credit Agreement true, correct and complete in all material respects as a result of the effectiveness of the joinder of New Borrower effectuated pursuant to this Agreement. Each such Schedule shall be attached to the Credit Agreement, and on and after the date hereof all references in any Loan Document to any such Schedule to the Credit Agreement shall mean such Schedule as so amended; provided, that any use of the term "as of the date hereof" or any term of similar import, in any provision of the Credit Agreement relating to a New Borrower or any of the information amended by such Schedule hereby, shall be deemed to refer to the date of this Agreement.

3. Joinder of New Borrower to the Fee Letter. By its execution of this Agreement, New Borrower hereby (a) agrees that from and after the date of this Agreement it shall be a "Borrower" party to the Fee Letter as if it were a signatory thereto and shall be bound by all of the provisions thereof, and (b) agrees that it shall comply with and be subject to all of the terms, conditions, covenants, agreements and obligations set forth in the Fee Letter applicable to Borrowers. New Borrower hereby agrees that each reference to "Borrower" or "Borrowers" in the Fee Letter shall include New Borrower. New Borrower acknowledges that it has received a copy of the Fee Letter and that it has read and understands the terms thereof.

4. Representations and Warranties of New Borrower. New Borrower hereby represents and warrants to Agent for the benefit of the Lender Group and the Bank Product Providers as follows:

(a) It (i) is duly organized and existing and in good standing under the laws of the jurisdiction of its organization, (ii) is qualified to do business in any state where the failure to be so qualified could reasonably be expected to result in a Material Adverse Effect, and (iii) has all requisite power and authority to own and operate its properties, to carry on its business as now conducted and as proposed to be conducted, to enter into this Agreement and the other Loan Documents to which it is made a party and to carry out the transactions contemplated hereby and thereby.

(b) The execution, delivery, and performance by it of this Agreement and any other Loan Document to which New Borrower is made a party (i) have been duly authorized by all necessary action on the part of such New Borrower and (ii) do not and will not (A) violate any material provision of federal, state, or local law or regulation applicable to New Borrower or its Subsidiaries, the Governing Documents of New Borrower or its Subsidiaries, or any order, judgment, or decree of any court or other Governmental Authority binding on New Borrower or its Subsidiaries, (B) conflict with, result in a breach of, or constitute (with due notice or lapse of time or both) a default under any material agreement of New Borrower or its Subsidiaries where any such conflict, breach or default could individually or in the aggregate reasonably be expected to have a Material Adverse Effect, (C) result in or require the creation or imposition of any Lien of any nature whatsoever upon any assets of New Borrower, other than Permitted Liens, (D) require any approval of New Borrower's interestholders or any approval or consent of any Person under any material agreement of New Borrower, other than consents or approvals that have been obtained and that are still in force and effect and except, in the case of material agreements, for consents or approvals, the failure to obtain could not individually or in the aggregate reasonably be expected to cause a Material Adverse Effect, or (E) require any registration with, consent, or approval of, or notice to or other action with or by, any Governmental Authority, other than registrations, consents, approvals, notices, or other actions that have been obtained and that are still in force and effect, and except for filings and recordings with respect to the Collateral to be made, or otherwise delivered to Agent for filing or recordation.

(c) This Agreement and each Loan Document to which New Borrower is a party is the legally valid and binding obligation of New Borrower, enforceable against New Borrower in accordance with its respective terms, except as enforcement may be limited by equitable principles or by bankruptcy, insolvency, reorganization, moratorium, or similar laws relating to or limiting creditors' rights generally.

(d) Each other representation and warranty applicable to New Borrower as a Borrower under the Loan Documents is true, correct and complete, in all material respects (except that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof) on and as of the date hereof, as though made on such date (except to the extent that such representations and warranties relate solely to an earlier date, in which case such representations and warranties shall be true, correct and complete in all material respects (except that such materiality qualifier shall not be applicable to any representations and warranties that already are qualified or modified by materiality in the text thereof) as of such earlier date).

5. Additional Requirements. Concurrent with the execution and delivery of this Agreement, Agent shall have received the following, each in form and substance satisfactory to Agent:

(a) a Joinder No. 4 to the Guaranty and Security Agreement, dated as of the date hereof, by and among New Borrower, Proppant Express Solutions, LLC, a Delaware limited liability company ("PropX") and Agent;

(b) a Joinder to Intercompany Subordination Agreement, dated as of the date hereof, by and among New Borrower, PropX and Agent;

(c) an Acknowledgement to the Intercreditor Agreement, dated as of the date hereof, and executed by New Borrower and PropX;

(d) a Supplement to Perfection Certificate, dated as of the date hereof, with respect to New Borrower and PropX and executed by Liberty in favor of Agent;

(e) a Pledged Interests Addendum by Liberty, dated as of the date hereof, with respect to the pledge of the Equity Interests of New Borrower and PropX, owned by Liberty, together with executed irrevocable proxies and registration pages with respect to all of such Equity Interests;

(f) an Assignment of Business Interruption Insurance Policy as Collateral Security, dated as of the date hereof, executed by New Borrower and PropX in favor of Agent;

(g) appropriate financing statements to be filed in (i) the office of the Delaware Secretary of State against New Borrower and (ii) the office of the Texas Secretary of State against PropX, in each case, to perfect the Agent's Liens in and to the Collateral of New Borrower and PropX, as applicable;

(h) a certificate from an officer of New Borrower and PropX, dated as of the date hereof, (i) attesting to the resolutions of New Borrower's and PropX's Sole Member authorizing its execution, delivery, and performance of this Agreement and the other Loan Documents to which New Borrower and PropX is or will become a party, (ii) authorizing officers of New Borrower and PropX to execute the same, and (iii) attesting to the incumbency and signatures of such specific officers of New Borrower and PropX;

(i) a certificate of status with respect to New Borrower and PropX, dated as of a recent date, such certificate to be issued by the appropriate officer of the applicable jurisdiction of organization of New Borrower and PropX, which certificate shall indicate that New Borrower and PropX is in good standing or in existence, as applicable, in such jurisdiction;

(j) certificates of status with respect to New Borrower and PropX, as applicable, dated as of a recent date, such certificates to be issued by the appropriate officer of the jurisdictions (other than the applicable jurisdiction of organization of New Borrower and PropX) in which the failure to be duly qualified or licensed would constitute a Material Adverse Effect, which certificates shall indicate that New Borrower or PropX, as applicable, is in good standing in such jurisdictions;

(k) copies of New Borrower's and PropX's Governing Documents, as amended, modified or supplemented to the date hereof, certified by the Secretary of New Borrower and PropX;

(l) evidence that New Borrower and PropX have been added to the Loan Parties' existing insurance policies required by Section 5.6 of the Credit Agreement;

(m) a customary opinion of counsel regarding such matters as to New Borrower and PropX as Agent or its counsel may reasonably request, and which is otherwise in form and substance reasonably satisfactory to Agent (it being understood that such opinion shall be limited to this Agreement, and the documents executed or delivered in connection herewith (including the financing statement filed against New Borrower and PropX)); and

(n) such other agreements, instruments, approvals or other documents requested by Agent prior to the date hereof in order to create, perfect and establish the first priority of, or otherwise protect, any Lien purported to be covered by any Loan Document or otherwise to effect the intent that New Borrower and PropX shall become bound by all of the terms, covenants and agreements contained in the Loan Documents and that, to the extent set forth in the Credit Agreement and the Guaranty and Security Agreement, all property and assets of New Borrower and PropX shall become Collateral for the Obligations.

6. Post-Closing Covenants. No later than forty-five (45) days after the date hereof, the Loan Parties shall deliver to Agent (i) an additional insured endorsement with respect to their liability insurance policy, (ii) a notice of cancellation endorsement with respect to their liability insurance policy and (iii) a lender's loss payee endorsement with respect to each of their property insurance policies, each in form and substance reasonably satisfactory to Agent.

7. Further Assurances. At any time upon the reasonable request of Agent, New Borrower shall promptly execute and deliver to Agent such Additional Documents as Agent shall

reasonably request pursuant to the Credit Agreement and the other Loan Documents, in each case in form and substance reasonably satisfactory to Agent.

8. Notices. Notices to New Borrower shall be given in the manner set forth for Borrowers in Section 11 of the Credit Agreement.

9. Choice of Law and Venue; Jury Trial Waiver; Judicial Reference. THIS AGREEMENT SHALL BE SUBJECT TO THE PROVISIONS REGARDING CHOICE OF LAW AND VENUE, JURY TRIAL WAIVER, AND JUDICIAL REFERENCE SET FORTH IN SECTION 12 OF THE CREDIT AGREEMENT, AND SUCH PROVISIONS ARE INCORPORATED HEREIN BY THIS REFERENCE, MUTATIS MUTANDIS.

10. Binding Effect. This Agreement shall be binding upon New Borrower, and the other Loan Parties and shall inure to the benefit of the Agent and the Lender Group, together with their respective successors and permitted assigns.

11. Effect on Loan Documents.

(a) Except as contemplated to be supplemented hereby, the Credit Agreement, the Fee Letter and each other Loan Document shall continue to be, and shall remain, in full force and effect. Except as expressly contemplated hereby, this Agreement shall not be deemed (i) to be a waiver of, or consent to, or a modification or amendment of any other term or condition of the Credit Agreement, the Fee Letter, any other Loan Document or any of the instruments or agreements referred to therein, as the same may be amended or modified from time to time.

(b) Each reference in the Credit Agreement and the other Loan Documents to "Borrower", "Loan Party" or words of like import referring to a Borrower or a Loan Party shall include and refer to New Borrower and (b) each reference in the Credit Agreement, the Fee Letter, or any other Loan Document to this "Agreement", "hereunder", "herein", "hereof", "thereunder", "therein", "thereof", or words of like import referring to the Credit Agreement, the Fee Letter, or any other Loan Document shall mean and refer to such agreement as supplemented by this Agreement.

12. Miscellaneous

(a) This Agreement is a Loan Document. This Agreement may be executed in any number of counterparts and by different parties on separate counterparts, each of which, when executed and delivered, shall be deemed to be an original, and all of which, taken together, shall constitute but one and the same Agreement. Delivery of an executed counterpart of this Agreement by telefacsimile or other electronic image scan transmission (e.g., "PDF" or "tif" via email) shall be equally effective as delivery of an original executed counterpart of this Agreement. Any party delivering an executed counterpart of this Agreement by telefacsimile or other electronic image scan transmission also shall deliver an original executed counterpart of this Agreement but the failure to deliver an original executed counterpart shall not affect the validity, enforceability, and binding effect of this Agreement.

(b) Any provision of this Agreement which is prohibited or unenforceable shall be ineffective to the extent of such prohibition or unenforceability without invalidating the remaining provisions hereof in that jurisdiction or affecting the validity or enforceability of such provision in any other jurisdiction. Each provision of this Agreement shall be severable from every other provision of this Agreement for the purpose of determining the legal enforceability of any specific provision.

(c) Headings and numbers have been set forth herein for convenience only. Unless the contrary is compelled by the context, everything contained in each Section applies equally to this entire Agreement.

(d) Neither this Agreement nor any uncertainty or ambiguity herein shall be construed against any member of the Lender Group or New Borrower, whether under any rule of construction or otherwise. This Agreement has been reviewed by all parties and shall be construed and interpreted according to the ordinary meaning of the words used so as to accomplish fairly the purposes and intentions of all parties hereto.

(e) The pronouns used herein shall include, when appropriate, either gender and both singular and plural, and the grammatical construction of sentences shall conform thereto.

(f) This Agreement shall be subject to the rules of construction set forth in Section 1.4 of the Credit Agreement, and such rules of construction are incorporated herein by this reference, *mutatis mutandis*.

[remainder of this page intentionally left blank].

IN WITNESS WHEREOF, New Borrower and Agent have caused this Agreement to be duly executed by its authorized officer as of the day and year first above written.

NEW BORROWER:

LOS LEASING COMPANY LLC,
a Texas limited liability company

By: /s/ R. Sean Elliott
Name: R. Sean Elliott
Title: Vice President and General Counsel

AGENT:

WELLS FARGO BANK, NATIONAL ASSOCIATION, a national banking association

By: /s/ Ryan C. Tozier
Name: Ryan C. Tozier
Title: Vice President

ACKNOWLEDGED AND AGREED BY:

LIBERTY OILFIELD SERVICES LLC,
a Texas limited liability company

By: /s/ R. Sean Elliott
Name: R. Sean Elliott
Title: Vice President and General Counsel

LIBERTY OILFIELD SERVICES INC.,
a Delaware corporation

By: /s/ R. Sean Elliott
Name: R. Sean Elliott
Title: Vice President and General Counsel

LIBERTY OILFIELD SERVICES NEW HOLDCO LLC,
a Delaware limited liability company

By: /s/ R. Sean Elliott
Name: R. Sean Elliott
Title: Vice President and General Counsel

R/C IV NON-U.S. LOS CORP,
a Delaware corporation

By: /s/ R. Sean Elliott
Name: R. Sean Elliott
Title: Vice President and General Counsel

FREEDOM PROPPANT LLC, a Delaware limited liability company

By: /s/ R. Sean Elliott
Name: R. Sean Elliott
Title: Vice President and General Counsel

LOS KERMIT LLC, a Delaware limited liability company

By: /s/ R. Sean Elliott
Name: R. Sean Elliott
Title: Vice President and General Counsel

EXHIBIT A

Restated Schedules

Schedule 4.1(b) – Capitalization of Loan Parties
Schedule 4.1(c) – Capitalization of Parent’s Subsidiaries
Schedule 4.25 – Location of Inventory

[Intentionally Omitted]

Subsidiaries of Liberty Oilfield Services Inc.

Entity	State of Formation
Liberty Oilfield Services New HoldCo LLC	Delaware
Liberty Oilfield Services LLC	Texas
Freedom Proppant LLC	Delaware
LOS Kermit LLC	Delaware
Proppant Express Solutions, LLC	Delaware
LOS Canada Holdings Inc.	British Colombia
LOS Canada Operations ULC	British Colombia

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement Nos. 333-222616 and 333-225948 on Form S-8, and Registration Statement No. 333-232580 on Form S-3ASR of our reports dated February 22, 2022, relating to the financial statements of Liberty Oilfield Services Inc. and its subsidiaries and the effectiveness of Liberty Oilfield Services Inc. and its subsidiaries' internal control over financial reporting appearing in this Annual Report on Form 10-K for the year ended December 31, 2021.

/s/ Deloitte & Touche LLP

Denver, Colorado
February 22, 2022

Exhibit 31.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER

I, Christopher A. Wright, certify that:

1. I have reviewed this Annual Report on Form 10-K of Liberty Oilfield Services 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 fourth fiscal quarter 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 22, 2022

By: /s/ Christopher A. Wright
Christopher A. Wright
Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER

I, Michael Stock, certify that:

1. I have reviewed this Annual Report on Form 10-K of Liberty Oilfield Services 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 fourth fiscal quarter 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 22, 2022

By: /s/ Michael Stock
Michael Stock
Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER UNDER
18 U.S.C. SECTION 1350 AS ADOPTED PURSUANT TO SECTION 906
OF THE SARBANES-OXLEY ACT OF 2002

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code), the undersigned officer of Liberty Oilfield Services Inc. (the "*Company*"), does hereby certify, to such officer's knowledge, that:

The Annual Report on Form 10-K for the year ended December 31, 2021 ("*Form 10-K*") of the Company fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, and information contained in the Form 10-K fairly presents, in all material respects, the financial condition and results of operations of the Company, as of, and for, the periods presented in the Form 10-K.

Date: February 22, 2022

By: /s/ Christopher A. Wright
Christopher A. Wright
Chief Executive Officer
(Principal Executive Officer)

Exhibit 32.2

**CERTIFICATION OF CHIEF FINANCIAL OFFICER UNDER
18 U.S.C. SECTION 1350 AS ADOPTED PURSUANT TO SECTION 906
OF THE SARBANES-OXLEY ACT OF 2002**

Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code), the undersigned officer of Liberty Oilfield Services Inc. (the "*Company*"), does hereby certify, to such officer's knowledge, that:

The Annual Report on Form 10-K for the year ended December 31, 2021 ("*Form 10-K*") of the Company fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, and information contained in the Form 10-K fairly presents, in all material respects, the financial condition and results of operations of the Company, as of, and for, the periods presented in the Form 10-K.

Date: February 22, 2022

By: /s/ Michael Stock
Michael Stock
Chief Financial Officer
(Principal Financial Officer)

Mine Safety Disclosure

The following disclosure is provided pursuant to Section 1503(a) of the Dodd-Frank Wall Street Reform and Consumer Protection Act, which requires certain disclosures by companies required to file periodic reports under the Securities Exchange Act of 1934, as amended, that operate mines regulated under the Federal Mine Safety and Health Act of 1977.

The table that follows reflects citations, orders, violations and proposed assessments issued by the Mine Safety and Health Administration (the "MSHA") to indirect subsidiaries of Liberty Oilfield Services Inc. The disclosure is with respect to the full year ended December 31, 2021. Due to timing and other factors, the data may not agree with the mine data retrieval system maintained by the MSHA at www.MSHA.gov.

Year Ended December 31, 2021
(unaudited)
(whole dollars)

Mine or Operating Name/MSHA Identification Number	Section 104 S&S Citations	Section 104(b) Orders	Section 104(d) Citations and Orders	Section 110(b)(2) Violations	Section 107(a) Orders	Total Dollar Value of MSHA Assessments Proposed (1)	Mining Related Fatalities	Received Notice of Pattern of Violations Under Section 104(e) (yes/no)	Received Notice of Potential Have Pattern Under Section 104(e) (yes/no)	Legal Actions Pending as of Last Day of Period	Legal Actions Initiated During Period	Legal Actions Resolved During Period
Freedom Proppants—Monahans Mine/4105336	—	—	—	—	—	$ 381	—	N	N	—	—	—
Freedom Proppants—Kermit Mine/4105321	5	—	—	—	—	$ 6,454	—	N	N	—	—	—

(1) Amounts included are the total dollar value of proposed assessments received from MSHA on or before December 31, 2021, regardless of whether the assessment has been challenged or appealed, for citations and orders occurring during the year ended December 31, 2021. Citations and orders can be contested and appealed, and as part of that process, are sometimes reduced in severity and amount, and sometimes dismissed. The number of citations, orders, and proposed assessments vary by inspector and vary depending on the size and type of the operation.