

# GSE SYSTEMS INC

## FORM 10-K (Annual Report)

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**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, 2019

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d)  
OF THE SECURITIES EXCHANGE ACT OF 1934  
For the transition period from \_\_\_\_ to \_\_\_\_

Commission File Number 001-14785

**GSE Systems, Inc.**

(Exact name of registrant as specified in its charter)

**Delaware**

(State of incorporation)

**52-1868008**

(I.R.S. Employer Identification Number)

**1332 Londontown Blvd., Suite 200, Sykesville MD**

(Address of principal executive offices)

**21784**

(Zip Code)

Registrant's telephone number, including area code: (410) 970-7800

SECURITIES REGISTERED PURSUANT TO SECTION 12(b) OF THE ACT:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, \$.001 Par Value	GVP	The NASDAQ Capital Market

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 15(d) of the Act. Yes  No

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

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

Indicate by check mark 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. (Check one):

Large accelerated filer   
Emerging growth company

Accelerated filer

Non-accelerated filer

Smaller reporting company

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

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

The aggregate market value of Common Stock held by non-affiliates of the Registrant was \$47,033,354 on June 30, 2019, the last business day of the Registrant's most recently completed second fiscal quarter, based on the closing price of such stock on that date of \$2.34.

The number of shares outstanding of the registrant's Common Stock as of May 31, 2020 was 20,389,082 shares.

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## CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS.

This report and the documents incorporated by reference herein contain “forward-looking” statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”) that are based on management’s assumptions, expectations and projections about us, and the industry within which we operate, and that have been made pursuant to the Private Securities Litigation Reform Act of 1995 reflecting our expectations regarding our future growth, results of operations, performance and business prospects and opportunities. Wherever possible, words such as “anticipate”, “believe”, “continue”, “estimate”, “intend”, “may”, “plan”, “potential”, “predict”, “expect”, “should”, “will” and similar expressions, or the negative of these terms or other comparable terminology, have been used to identify these forward-looking statements. These forward-looking statements may also use different phrases. These statements regarding our expectations reflect our current beliefs and are based on information currently available to us. Accordingly, these statements by their nature are subject to risks and uncertainties, including those listed under Item 1A Risk Factors, which could cause our actual growth, results, performance and business prospects and opportunities to differ from those expressed in, or implied by, these forward-looking statements. We may not actually achieve the plans, intentions or expectations disclosed in our forward-looking statements and you should not place undue reliance on our forward-looking statements. Actual results or events could differ materially from the plans, intentions and expectations disclosed in the forward-looking statements we make. Except as otherwise required by federal securities law, we are not obligated to update or revise these forward looking statements to reflect new events or circumstances. We caution you that a variety of factors, including but not limited to the factors described below and in Item 1A Risk Factors, could cause our business conditions and results to differ materially from what is contained in forward-looking statements:

- changes in the rate of economic growth in the United States and other major international economies;
- changes in investment by the nuclear and fossil electric utility industry, the chemical and petrochemical industries, or the U.S. military;
- changes in the financial condition of our customers;
- changes in the regulatory environment;
- changes in project design or schedules;
- contract cancellations;
- changes in our estimates of costs to complete projects;
- changes in trade, monetary and fiscal policies worldwide;
- currency fluctuations;
- war and/or terrorist attacks on facilities either owned by our customers or our company, or where equipment or services are or may be provided;
- initiation, prosecution, or outcomes of future litigation;
- protection and validity of our trademarks and other intellectual property rights;
- increasing competition by foreign and domestic companies;
- compliance with our debt covenants;
- recoverability of claims against our customers and others;
- changes in estimates used in our critical accounting policies; and
- impact of the Novel Coronavirus COVID-19 (coronavirus), or other future pandemics, on the global economy and on our customers, suppliers, employees and business.

The forward-looking statements are based upon management’s beliefs and assumptions and are made as of the date of this report on Form 10-K. Other factors and assumptions not identified above were also involved in the formation of these forward-looking statements and the failure of such other assumptions to be realized, as well as other factors, may also cause actual results to differ materially from those projected. Most of these factors are difficult to predict accurately and are generally beyond our control. You should consider the areas of risk described above and in Item 1A Risk Factors in connection with any forward-looking statements that may be made by us. You should not place undue reliance on any forward-looking statements. New factors emerge from time to time, and it is not possible for us to predict which factors will arise.

We undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise. You are advised, however, to consult any additional disclosures we make in proxy statements, quarterly reports on Form 10-Q and current reports on Form 8-K filed with the SEC.

### Company Information Available on the Internet

Our Internet address is [www.gses.com](http://www.gses.com). We make available free of charge through our Internet site our annual reports on Form 10-K; quarterly reports on Form 10-Q; current reports on Form 8-K; proxy statements, and any amendment to those reports filed or furnished pursuant to the Exchange Act as soon as reasonably practicable after such material is electronically filed with, or furnished to, the SEC.

## PART I

### ITEM 1. BUSINESS.

GSE Systems, Inc. (GSE Systems, GSE, the Company, we, us or our), a Nasdaq-listed company trading under the symbol GVP, is a leading provider of engineering, expert staffing, and simulation software to clients in the power and process industries. We provide customers with simulation, engineering and plant services that help clients reduce risks associated with operating their plants, increase revenue through improved plant and employee performance, and lower costs through improved operational efficiency. In addition, we provide professional services that systematically help clients fill key vacancies in the organization on a short-term basis, primarily in procedures, engineering, technical support, and training focused on regulatory compliance and certification in the nuclear power industry. Our operations also include interactive computer-based tutorials and simulation software for the refining, chemical, and petrochemical industries. We are one of the largest independent nuclear service companies in North America.

We execute projects globally with approximately 363 employees, as of December 31, 2019. We operate from offices in the U.S. and China and with our employees deployed at client sites. While most of our revenue comes from the nuclear power market, we also serve the fossil, refining, chemical, and petrochemical markets.

GSE Systems was formed on March 30, 1994, to consolidate the simulation and related businesses of General Physics International Engineering & Simulation, S3 Technologies, and EuroSim. The Company completed its Initial Public Offering in 1995.

On November 14, 2014, we acquired Hyperspring, LLC (Hyperspring). Hyperspring is a nuclear industry expert staffing firm that employs highly skilled, high-value professionals primarily filling training and consulting positions on a contract basis for nuclear power plant operators. Hyperspring professionals provide training, operations and maintenance support including: generic fundamentals exams (GFES), accreditation training visit (ATV) preparation, senior reactor operator (SRO) certification, procedure development, work management, tagging/labeling, outage execution, planning/scheduling, corrective action, self-assessments and equipment reliability. Customers have included Entergy, TVA, PSEG Nuclear and First Energy.

On September 20, 2017, we acquired Absolute Consulting, Inc. (Absolute). Absolute is a provider of technical consulting and staffing solutions to the global nuclear power industry with expertise in procedure writing, engineering, technical support, project management, training, project controls, and corrective actions. Customers have included Entergy, Duke Energy, Vistra Energy and Southern Nuclear Operating Company.

On May 11, 2018, we acquired True North Consulting, LLC (True North). True North is a provider of engineering solutions to nuclear and fossil fuel power plants with an emphasis on regulatory-driven ASME code programs. Customers have included Exelon, Entergy, Southern Nuclear Operating Company, and EPRI.

On February 15, 2019, we acquired DP Engineering Ltd, Co, (DP Engineering). DP Engineering is a specialized provider of high-value engineering services and solutions to the nuclear power industry. Founded in 1995 in Fort Worth, Texas, DP Engineering generates over 90% of its revenue from the nuclear power industry with core expertise in: mechanical design; civil/structural design; electrical, instrumentation and controls design; digital controls/cyber security; and fire protection. DP Engineering primarily works under master service agreements as the Engineer of Choice. Customers have included Entergy, Fluor, Talen Energy Services, and Vistra Energy.

## Branding

On January 27, 2020, GSE Systems announced that it has completed a brand refresh to help unify the market presence of its recently acquired businesses under the new name GSE Solutions™. This undertaking is intended to more accurately reflect its comprehensive suite of solutions to the global power industry, particularly nuclear operations. The rebranding effort includes a new parent company market identity, a unified website for all lines of business, www.gses.com, and repositioned solution-sets more focused on the people, services, and products that the company as a whole provides. GSE Systems, Inc. remains the legal name of the parent company, publicly traded on Nasdaq under the ticker symbol “GVP”. But GSE operations and marketing will use the more distinct trademark “GSE Solutions” as a way to communicate the fact that GSE’s specialized businesses units help customers reduce risk and optimize performance through unique solutions, a centralized project approach, expert resource management, and a culture of continuous improvement.

## Operating Segments

We operate through two reportable business segments: Performance Improvement Solutions and Nuclear Industry Training and Consulting. Each segment focuses on delivering solutions to customers within our targeted markets - primarily the power and process industries. Marketing and communications, accounting, finance, legal, human resources, corporate development, information systems and other administrative services are organized at the corporate level. Business development and sales resources are generally aligned with each segment to support existing customer accounts and new customer development. The business units collaborate to facilitate cross-selling and the development of new solutions. The following is a description of our business segments:

- *Performance Improvement Solutions (approximately 55% of revenue)*

Our Performance Improvement Solutions segment primarily encompasses our power plant high-fidelity simulation solutions, technical engineering services for ASME programs and thermal performance optimization, and interactive computer based tutorials/simulation focused on the process industry. This segment includes various simulation products, engineering services, and operation training systems delivered primarily to the nuclear and fossil fuel power generation and the process industries. Our simulation solutions include the following: (1) simulation software and services, including operator training systems, for the nuclear power industry, (2) simulation software and services, including operator training systems, for the fossil power industry, and (3) simulation software and services for the process industries used to teach fundamental industry processes and control systems to newly hired employees and for ongoing workforce development and training. GSE and its predecessors have been providing these services since 1976.

Our engineering solutions include the following: (1) in-service testing for engineering programs focused on ASME OM code including Appendix J, balance of plant programs, and thermal performance; (2) in-service inspection for specialty engineering including ASME Section XI; (3) software solutions; and (4) mechanical design, civil/structural design, electrical, instrumentation and controls design, digital controls/cyber security, and fire protection for nuclear power plant design modifications. Our True North and DP Engineering businesses typically work as either the engineer of choice or specialty engineer of choice for our clients under master services agreements. GSE has been providing these engineering solutions and services since 1995.

We include both True North and DP Engineering in our Performance Improvement Solutions due to their service offerings.

- *Nuclear Industry Training and Consulting (approximately 45% of revenue)*

Nuclear Industry Training and Consulting provides highly specialized and skilled nuclear operations instructors, procedure writers, technical engineers, and other consultants to the nuclear power industry. These employees work at our clients’ facilities under client direction. Examples of these highly skilled positions are senior reactor operations instructors, procedure writers, project managers, work management specialists, planners and training material developers. This business is managed through our Hyperspring and Absolute subsidiaries. The business model, management focus, margins and other factors clearly separate the business line from the rest of the Company’s product and service portfolio. GSE has been providing these services since 1997.

Financial information is provided in Note 20 of the accompanying consolidated financial statements regarding our business segments and geographic operations and revenue.

## Business Strategy, Industry Trends, Products and Services

### *Business Strategy*

Our objective has been to create a leading specialty engineering, expert staffing and technology delivery platform focused primarily on the nuclear power industry. We offer our differentiated suite of products and services to adjacent markets such as the defense industry, the fossil power and process industries where our offerings are a natural fit, delivering a clear and compelling value proposition to the market. Our growth strategy had been twofold: (1) seek acquisitions to accelerate our overall growth in a manner that is complementary to our core business and (2) expand organically within our core markets by leveraging our market leadership position and drive increased usage and product adoption via new products and services. To accomplish this objective, we will pursue the following activities:

***Strategic pause in our executed roll-up acquisition strategy.*** Over the past few years we have complemented our organic growth strategy with selective acquisitions including, but not limited to, the following: engineering; training, staffing and consulting service businesses for the power industry, with a particular focus on nuclear power; and software utilized in the power industry, both domestic and international. We had focused our acquisition efforts on opportunities that would enhance our portfolio of products and services, strengthen our relationships with our existing customers, and potentially expand our footprint to include new customers in our core served industries. Following this strategy, we have made three acquisitions since 2017. Although we believe opportunities still exist to acquire more businesses that would be complementary to ours, given our current desire to focus on cross selling and upselling across our existing business portfolio, we have paused our acquisition of new businesses. Our current efforts are focused on organic growth across the portfolio while utilizing free cash flow to pay down debt associated with our delayed-draw term loan facility. While our roll-up acquisition strategy is on pause, the Company remains open to transformational opportunities that may present themselves.

**Summary of recent acquisitions:** In February 2019, we acquired DP Engineering, a specialized provider of high-value engineering services and solutions to the nuclear power industry. In May 2018, we acquired True North, a leading provider of specialty engineering solutions to the nuclear power industry, and in September 2017, we acquired Absolute, a provider of technical consulting and staffing solutions to the global nuclear power industry. The acquisitions of Absolute, True North, and DP Engineering collectively enhanced the Company's unique capabilities in the nuclear services area. The acquisitions have added new capabilities to the GSE solution offering and bring new highly complementary customers to GSE, while at the same time deepening GSE relationships with existing clients. These acquisitions have added scale and focus to the business, while positioning GSE as a "go to" provider of technical and consulting solutions to the power industry, particularly nuclear power. We feel that now is the time to focus on organic growth opportunities through cross selling and upselling GSE's full range of products and services to the industry.

**Expand our total addressable market** Our focus on organic growth means enhancing our product capabilities or new product and introduce new service categories that create value for our customers and therefore expand our total addressable market. Currently we are working on initiatives to expand our solution offerings in both of our business segments that may include, but are not limited to, the following: expanding our software product portfolio to include enhanced power and process simulation tools and systems that are complementary to our core offerings; delivering enhanced learning management systems/solutions; offering fully outsourced training solutions to our customers; adding work flow process improvement solutions; tailoring operational reporting and business intelligence solutions to address the unique need of our end user markets; and adding new services to broaden our market reach. With the pause of our roll-up acquisition strategy, our current expansion efforts are primarily organic in nature.

We are unique among engineering firms in the nuclear market in ability to serve the entire lifecycle of a plant through a combination of expert service not found in other Engineers of Choice. We offer clients the ability to perform the upfront engineering design, address and optimize regulatory compliance, optimize designs through simulation assisted engineering, and provide all of the professional temporary staffing needed for a wide variety of specialized engineering projects.

Initiatives such as these will broaden our scope and enable us to engage more deeply with the segments we serve and to address the needs of customers in adjacent segments. We have delivered a compelling solution, the GSE GPWR™ Generic Pressurized Water Reactor simulation technology, proving that our modeling technology can be sold in generic form via traditional license terms and conditions to the nuclear industry ecosystem. We have both upgraded and expanded the EnVision™ library of simulation and eLearning tutorials for the process industries with specific new products for training clients in the upstream segment of the oil and gas industry including launching a new cloud-based training platform, EnVision™ Learning On-Demand, that significantly extends the capabilities of its industry leading EnVision™ tutorials and simulations. We continue to provide cutting edge training systems by adapting our technology to systems that meet the specific needs of customers such as U.S. government laboratories.

**Research and development (R&D)** We invest in R&D to deliver unique solutions that add value to our end-user markets. We have delivered nuclear core and Balance-of-Plant modeling and visualization systems to the industry. To address the nuclear industry's need for more accurate simulation of both normal and accident scenarios, we provide our DesignEP® and RELAP5-HD® solutions. Our entire JADE™ suite of simulation software, including industry leading JTOPMERET® and JElectric™ software, provides the most accurate simulation of Balance-of-Plant and electrical systems available to the nuclear and fossil plant simulation market. The significant enhancements we have made to our SimExec® and OpenSim™ platforms enables customers to be more efficient in the daily operation of their simulators. We are bringing SimExec® and OpenSim™ together into a next generation unified environment that will add new capabilities as requested by clients and driven by market need.

We intend to continue to make pragmatic and measured investments in R&D that first and foremost are driven by the market and complement our growth strategy. Such investments in R&D may result in on-going enhancement of existing solutions as well as the creation of new solutions to serve our target markets, ensuring that we add greater value that is easier to use, at lower total cost of ownership than any alternative available to customers. GSE has pioneered a number of industry standards and intends to continue to be one of the most innovative companies in our industry. During the years ended December 31, 2019 and 2018, we have made R&D investments totaling \$1.1 million and \$1.3 million, respectively.

**Strengthen and develop our talent while delivering high-quality solutions** Our experienced employees and management team are our most valuable resources. Attracting, training, and retaining top talent is critical to our success. To achieve our talent goals, we intend to remain focused on providing our employees with entrepreneurial opportunities to increase client contact within their areas of expertise and to expand and deepen our service offerings. We will also continue to provide our employees with training, personal and professional growth opportunities, performance-based incentives including opportunities for stock ownership, bonuses and competitive benefits as benchmarked to our industry and locations. We have developed a strong reputation for quality services based upon our industry-recognized depth of experience, ability to attract and retain quality professionals, and exceptional expertise across multiple service sectors. We have received numerous industry certificates and awards over the years for outstanding service.

## **Industry Trends**

### **Industry need to build and sustain a highly skilled workforce**

We believe a critical ongoing challenge facing the industries we serve is access to, and continued development of, a highly trained and efficient workforce. This challenge manifests primarily in two ways: the increasing pace at which industry knowledge and experience are lost as a significant percentage of the existing experienced workforce reaches retirement age; and the fact that as new power plants come on-line, there is an increased demand for more workers to staff and operate those plants.

In the United States, the energy industry is expected to continue to lose more of its workforce than it can attract within the next few years as baby boomers retire on the traditional schedule. As the nuclear industry continues to operate and modernizes its fleet and strains to maintain the high standards of training for the existing workforce, existing plant simulator systems, which provide a critical environment for training services, are often operating 24 hours a day. With workers retiring and the need to backfill as well as expand the workforce for new units, certain operators are exploring the opportunity to de-bottleneck their existing simulator capabilities through the creation of dual reference simulators. Other workforce shortages and/or short-term spikes in demand for specialist skills that we offer similarly are positive developments for our business. This labor environment continues to foster opportunities for technology firms, such as ours, to innovate and develop investment worthy solutions.

Globally, as more people increase their standard of living, their demand for power will increase, which in turn will require the on-going construction of power

plants to meet this surging demand. The drive to lower carbon emissions from power generation while ensuring a stable baseload to accommodate intermittent energy sources such as wind and solar power brings focus on the essential nature of nuclear power. Developing a skilled labor force to operate these plants and keeping their skills current and their certifications in compliance with regulatory requirements is a key challenge facing the global power industry.

### ***Status of nuclear power industry***

The world's nuclear reactors make an essential contribution to supplying clean and reliable electricity. With world awareness of the impact of carbon emissions from fossil fuels, there is growing recognition of the importance of nuclear power, which emits no carbon in generating electricity.

According to the International Atomic Energy Agency most recent data, at the end of 2018 the capacity of the world's 449 operable reactors was 397 GWe, up 4 GWe on the previous year. Nine new reactors were connected to the grid in 2018, with a combined capacity of 10.4 GWe. Seven reactors were closed down in 2018, with a combined capacity of 5.4 GWe. Of these, four are Japanese reactors that had not generated since 2011, and a fifth, Chinshan 1, had not generated since 2015, so these closures had minimal impact on overall electricity generation in 2018. Four reactors in Japan, with a combined capacity of 5.6 GWe, were given approval to restart. Japan continues to evaluate and prepare for further plant re-starts.

Reactors in the USA produced more electricity in 2018 than in any previous year, with 808 TWh generated. While 2019 data has not yet been reported, with the US fleet leading the world in capacity factors, this is expected to yet again achieve a record output. This amounts to about 20% of total electrical output. Two new AP-1000 reactors remain under construction at Southern Company's Plant Vogtle. In regulated markets where the economy is growing, the nuclear fleet is profitable and expanding, with two reactors under construction in the southeast U.S. Certain US states in the deregulated power markets have introduced economic incentives that support nuclear generation by recognizing the value of the clean, zero-carbon generation of electricity. This has provided critical economic support in states that are desperately trying to achieve emissions targets. With that said, in other states other reactors, particularly older single unit reactors, are under threat from distorted and challenging market conditions resulting from wind and solar subsidies and abundant and very cheap natural gas.

The world's nuclear plants continue to perform excellently. Growth is strong, with more than 20 new reactors scheduled to be connected before the end of 2020, including two in the U.S. For the industry to reach the Harmony goal of supplying at least 25% of the world's electricity before 2050, much greater commitment from policymakers will be required.

Longer term, the trends for nuclear power have promise as small-scale modular reactors (SMR's) advance in development and prototyping. A project is planned to build a NuScale Power SMR at Idaho National Labs. NuScale Power is a long-standing GSE customer. Tennessee Valley Authority submitted an application for an early site permit for two or more SMRs modules (up to 800 MWe, 2420 MWt) at the Clinch River Nuclear site on May 12, 2016. In January 2017 the Nuclear Regulatory Commission accepted and docketed the early site permit. United States Department of Energy ("DOE") recently released a draft plan to double America's nuclear power capacity by 2050. The plan, dubbed "Vision 2050", promotes expanding America's nuclear capacity through advanced reactor designs including small and medium-size reactors.

We are seeing government focus on supporting the development of advanced reactors beyond SMR's that offer significant promise. In 2019, the DOE announced plans to build a Versatile Test Reactor, or VTR. This capability will help accelerate the testing of advanced nuclear fuels, materials, instrumentation, and sensors. It will also allow DOE to modernize its essential nuclear energy research and development infrastructure, and conduct crucial advanced technology and materials testing necessary to re-energize the U.S. nuclear energy industry. This is an exciting new development for the continued advancement of nuclear power in the United States.

In addition, in 2019, significant progress has been made by DOE to support the introduction of a domestic source of high-assay low-enriched uranium, or HALEU for short. More than 20 U.S. companies are developing advanced reactors that will completely change the way we think about the nuclear industry. Many of these companies require HALEU fuel for their designs, and DOE has risen to the challenge in developing near-term and long-term fuel supplies to ensure the United States continues to lead the way in this critical research and design effort for Advanced Reactors.

We believe GSE is well positioned to take full advantage of these strategic global and domestic trends by providing high fidelity simulation, engineering and training solutions to the global power and process industries.

The longer-term fundamentals of our end markets remain solid, as the nuclear power industry continues to invest for safety, operational reliability, extension of plant life and performance improvement to generate more power from existing assets. Given the difficult-to-replicate assets, specialized employees and innovative technologies that we have amassed under a single go-to service provider platform, we are very optimistic about GSE's future.

## **Products and Services**

### ***Performance Improvement Solutions***

To assist our clients in creating world-class internal training and engineering improvement processes, we offer a set of integrated and scalable products and services that provide a structured program focused on continuous skills improvement for experienced employees to engineering services, including plant design verification and validation, ASME code compliance, and design plant modification work. We provide the right solutions to solve our clients' most pressing needs.

For workforce development and training, students and instructors alike must have a high degree of confidence that their power plant simulator truly reflects plant behavior across the entire range of operations. To earn this confidence, GSE's simulation solution starts with the most robust engineering approach possible. Using state-of-the-art modeling tools combined with our leading nuclear power modeling expertise, GSE provides simulation solutions that achieve unparalleled fidelity and accuracy. The solutions that GSE provides are also known for ease of use, resulting in increased productivity for end-users. For these reasons, GSE has delivered more nuclear power plant simulators than any other company in the world.

For virtual commissioning, designers of first-of-a-kind plants or existing plants need a highly accurate dynamic simulation platform to model a wide variety of design assumptions and concepts from control strategies to plant behavior to human factors. Because new builds and upgrades to existing plants result in deployment of new technology, often involving the integration of disparate technologies for the first time, a high-fidelity simulator enables designers to model the interaction between systems in advance of construction. With our combination of simulation technology and expert engineering, GSE was chosen to build first-of-



a-kind simulators for the AP1000, PBMR, and small modular reactors such as those being built by NuScale.

Examples of the types of simulators we sell include the following:

- **Universal Training Simulators:** These products complement our Self-Paced Training Tutorials by reinforcing what the student learned in the tutorial, putting it into practice on the Universal Simulator. The simulation models are high fidelity and represent a typical plant or typical process, rather than the exact replication of a client's plant. We have delivered over 360 such simulation models to clients consisting of major oil companies and educational institutions. This learning content is now being offered through a cloud-based subscription model that enables easier access and wider use of the content. Two of the world's largest refiners are using the platform across all global refining facilities, one signing a new five year SaaS contract at the end of 2019.
- **Part-Task Training Simulators:** Like our Universal Simulators, we provide other unique training solutions such as a generic nuclear plant simulator and VPanel® displays, which replicate control room hardware and simulator solutions specific to industry needs such as severe accident models to train on and aid in the understanding of events like the Fukushima Daiichi accident.
- **Plant-Specific Operator Training Simulators:** These simulators exactly replicate the plant control room and plant operations. They provide the highest level of realism and training available, and allow users to practice their own plant-specific procedures. Clients can safely practice startup, shutdown, and other normal operations, as well as response to abnormal events we all hope they never have to experience in real life. Since our inception, we have delivered over 490 plant-specific simulators to clients in the nuclear power, fossil power and process industries worldwide.

### ***Nuclear Industry Training and Consulting***

As our customers' experienced staff retire, access to experts that can help operate and train existing and new employees in how to operate their plants is essential to ensure safe ongoing plant operations. In addition, operating and training needs change over time and sometimes our clients require fixed priced discrete projects or specialized courses in contrast to straight staff augmentation. The industry needs operating personnel, including procedure writers, engineers, operators and instructors who can step in and use as well as update the client's operating methods, procedures, training material and more. Finding technical professionals and instructors, who know the subject, can perform the work or teach it to others and can adapt to the client's culture, is critical. GSE provides qualified professionals, instructors and turnkey projects/courses that work within the client's system and complement the operating or training methods they already have in place. Examples of our training program courses include senior reactor operator certification, generic fundamentals training, and simulation supervisor training. In addition, we also provide expert support through consulting or turnkey projects for procedure writing, technical engineers, project managers, training material upgrade and development, outage execution, planning and scheduling, corrective actions programs, and equipment reliability.

We bring together the collection of skills we have amassed over more than 40 years beginning with its traditional roots in custom high-fidelity simulation and training solutions for the power industries, extended through the acquisition of specialized engineering capabilities, enhanced by the entry and intermediate level training solutions of EnVision and the extensive nuclear industry training and consulting services of Absolute and Hyperspring.

### **Customers and Locations**

For almost 50 years, we have been developing next-generation, custom training simulation technologies. Since we built the first commercial full-scope nuclear power plant simulator in 1971, we have completed more than 1,100 installations, from full scope simulation systems to desktop workforce development solutions, in 50 countries.

In 2019, approximately 16% of our revenue was generated from end-users outside the United States and we have a concentration of revenue from one individual customer, which accounted for 27.8% of our consolidated revenue. A small representative list of our customer base includes: ABB Inc., American Electric Power, Bechtel Hanford National Laboratory, Duke Energy, EDF Energy (United Kingdom), Emerson Process Management, Entergy Nuclear Operations Inc, Exelon, PSEG Nuclear, Inc., Siemens AG (Germany), Southern Nuclear Operating Company, Inc., State Nuclear Power Automation System Engineering Company (China), Savannah River Nuclear Solutions, LLC, Slovenke Elektrarne, A.S. (Slovakia), Tennessee Valley Authority, and Westinghouse Electric Co.

Hydrocarbon and chemical process customers include numerous large oil refineries and chemical plants such as BP (worldwide), Statoil ASA (Norway), Chevron,, Shell Oil Company (worldwide), Total (Belgium), and Valero (USA).

### **Marketing and Sales**

We market our products and services through a network of direct sales staff, agents and representatives, and strategic alliance partners. Market-oriented business and customer account teams define and implement specific campaigns to pursue opportunities.

We continue to have a proactive public relations program, issuing non-financial press releases to announce product development and significant deliveries, as well as our presence at numerous industry trade shows and technical conferences. We are active on numerous social media platforms and strive to build a strong presence across all media that our clients use to find information about the Company. Our goal is to provide useful information at each stage of the client's journey with the Company.

The Company's ability to support its multi-facility, international, and multinational clients is facilitated by its network of offices and strategic partners in the U.S. and overseas. In addition to its office located in China, the Company's ability to conduct international business is enhanced by its multilingual and multicultural workforce. GSE has strategic relationships with system integrators and agents representing its interests in Bulgaria, Japan, Malaysia, Singapore, South Korea, Taiwan, Ukraine and various locations in the Gulf Coast Countries of the Middle East.

### **Competition**

In the nuclear simulation market, we compete in a global market including firms located in Canada, France and the U.S., such as L-3 MAPPS Inc., a subsidiary of Harris (Canada), CORYS T.E.S.S (France) and Western Services Corporation. In the fossil simulation market, we competes with smaller companies in the U.S.

and overseas. In the process industry our main competition comes from large digital control system/automation companies such as Honeywell and Schneider. In the engineering market, we compete with firms primarily from North America such as Enercon Services, Kinetrics, Sargent & Lundy, and AECOM.

The Nuclear Industry Training and Consulting business services include technical professional and training-related and services as well as staff augmentation solutions. The competition for these services includes but is not limited to the following: GP Strategies, The Westwind Group, Professional Training Technologies, and Western Technical Services. The competition for staff augmentation includes: Day & Zimmerman, The Planet Group, and The Westwind Group.

### **Competitive Advantages**

Although there is competition in various industry niches, few companies in our space can combine our engineering, simulation and training expertise, especially for the nuclear power industry. Few of our competitors serve the broader performance improvement market and few work across the full spectrum of energy markets including nuclear and fossil power plus petrochemicals.

**Proprietary Software Tools.** We developed a library of proprietary software tools including auto-code generators and system models that substantially improve and expedite the design, production and integration, testing and modification of software and systems. These tools are used to automatically generate the computer code and systems models required for specific functions commonly used in simulation applications, thereby enabling the Company or its customers to develop high-fidelity, real-time software quickly, accurately and at lower costs. The Company also has an expertise integrating third-party engineering codes into the Company's simulation environment, thereby offering some of the most sophisticated technical solutions in the market. The Company has a substantial library of Process-Specific Simulation models and eLearning Modules aimed at the oil and gas, refining and specialty chemicals markets.

**Industry Expertise.** We are a leading innovator and developer of real-time simulation software with more than 40 years of experience producing high-fidelity, real-time simulators. As a result, the Company has acquired substantial applications expertise in the energy and process industries. As of December 31, 2019, the Company employed a highly educated and experienced multinational workforce of approximately 363 employees, including approximately 148 engineers and scientists in fields such as chemical, mechanical and electrical engineering, applied mathematics and computer sciences, and approximately 140 instructors and plant operations staff specialists. As a result of the DP Engineering acquisition, we have added approximately 32 employees.

**Unique Combination of Talent.** Few in our market space brings together the sophistication of simulation technology with the engineering expertise, training expertise and visualization expertise to provide the holistic people and plant performance improvement solutions as well as we do.

**Reputation for Customer Satisfaction.** As part of its ISO-9001:2015 Quality Program Certification, GSE measures customer satisfaction across numerous factors such as On-Time Delivery, Problem Solving, and Customer Communication. In each category measured we routinely exceed customer expectations.

**Training Curricula.** The Company has developed hundreds of detailed courses and simulator exercise material and specific industrial applications including oil and gas refining, gas-oil production, nuclear and combined cycle gas turbine power plant and desalination.

Our Nuclear Industry Training and Consulting business is mostly focused on training and operations support. Our trainers and consultants provide their services at customer facilities which allows us to interface with our customers directly in the course of doing business versus only periodically calling on customers. Our proximity gives us a significant competitive advantage in that we can immediately offer and implement solutions rather than contending with lengthy bid processes.

### **Intellectual Property.**

The Company depends upon its intellectual property rights in its proprietary technology and information. GSE maintains a portfolio of trademarks (both registered and unregistered), copyrights (both registered and unregistered), and licenses. While such trademarks, copyrights and licenses as a group are of material importance to the Company, it does not consider any one trademark, copyright, or license to be of such importance that the loss or expiration thereof would materially affect the Company. The Company relies upon a combination of trade secrets, copyright, and trademark law, contractual arrangements and technical means to protect its intellectual property rights. GSE distributes its software products under software license agreements that grant customers nonexclusive licenses for the use of its products, which are nontransferable. Use of the licensed software is restricted to designated computers at specified sites, unless the customer obtains a site license of its use of the software. Software and hardware security measures are also employed to prevent unauthorized use of the Company's software, and the licensed software is subject to terms and conditions prohibiting unauthorized reproduction of the software.

The Company does not own any patents. The Company believes that all of the Company's trademarks (especially those that use the phrase "GSE Systems") are valid and will have an unlimited duration as long as they are adequately protected and sufficiently used. The Company's licenses are perpetual in nature and will have an unlimited duration as long as they are adequately protected and the parties adhere to the material terms and conditions.

GSE has numerous registered U.S. trademarks: GSE Systems®, JTOPMERET®, RELAP5-HD®, TOTALVISION®, VPanel® and SimExec®. Some of these trademarks have also been registered in foreign countries. The Company also claims trademark rights to DesignEP™, Java Application and Development Environment (JADE)™, OpenSim™, PSA-HD™, RACST™, SimSuite Pro™, SmartTutor™, THOR™, and Xtreme I/ST™.

In addition, the Company maintains federal statutory copyright protection with respect to its software programs and products, has registered copyrights for some of the documentation and manuals related to these programs, and maintains trade secret protection on its software products and proprietary technologies and methodologies.

Despite these protections, the Company cannot be sure that it has protected or will be able to protect its intellectual property adequately, that the unauthorized disclosure or use of its intellectual property will be prevented, that others have not or will not develop similar technology independently, or, to the extent it owns any patents in the future, that others have not or will not be able to design around those patents. Furthermore, the laws of certain countries in which the Company's products are sold do not protect its products and intellectual property rights to the same extent as the laws of the United States.

### **Government Regulations**

Our operations are directly and indirectly affected by political developments and both domestic and foreign governmental regulations. We cannot determine the extent to which changing political priorities, new legislation, new regulations or changes in existing laws or regulations may affect our future operations, positively or negatively.

## Industries Served

The following chart illustrates the approximate percentage of the Company's 2019 and 2018 consolidated revenue by industries served:

	Years ended December 31,	
	2019	2018
Nuclear power	90%	91%
Fossil fuel power	7%	6%
Process	2%	3%
Other	1%	0%
Total	100%	100%

## Backlog

As of December 31, 2019, we had approximately \$52.7 million of total gross revenue in backlog compared to \$70.6 million as of December 31, 2018. Most of our contract terms are for less than 24 months. Our backlog includes only those amounts that have been funded and authorized and does not reflect the full amounts we may receive over the term of such contracts. Our backlog includes future expected revenue at contract rates, excluding contract renewals or extensions that are at the discretion of the client. We calculate backlog without regard to possible project reductions or expansions or potential cancellations unless and until we have reason to believe that such changes may occur.

Backlog is expressed in terms of gross revenue and, therefore, may include significant estimated amounts of third-party or pass-through costs to subcontractors and other parties. Because backlog is not a defined accounting term, our computation of backlog may not necessarily be comparable to that of our industry peers.

## Employees

As of December 31, 2019, we had approximately 363 employees, which include 205 our Performance Improvement segment and 158 our Nuclear Industry Training and Consulting segment. Excluding our Nuclear Industry Training and Consulting business, which consists primarily of contracted instructors, our employee attrition rate for 2019 among all staff was approximately 10%. To date, we have been able to locate and engage highly qualified employees as needed and we expect our growth efforts to be addressed through attracting top talent.

## COVID-19 virus

The safety of our employees, their families and our customers are of primary concern to us. We operate consistent with Center for Disease Control and Prevention ("CDC") and Federal and State guidelines. Changes in our operations as a result of COVID-19 is primarily reflecting in requiring employees to work from home vs. the office if able for the time being. As a result, employees almost entirely work from home for the Performance Solutions line of business, but for when required to be at the client site for essential project work. When at the client site, the employee(s) are required to become thoroughly familiar with client safety guidelines including COVID-19 guidelines. The use of IP/telephony has enabled our employees to be nearly as productive working from home vs. the office. We expect efficiency to improve with time along a natural learning curve. It is important to note that we have been designated as an essential services provider for certain nuclear power and defense customers. Performance Projects, since they are essential, for the most part continue without pause. For our staff augmentation, we have seen certain contract for NITC customers paused and or delayed as clients shrink their own on-premise workforces to the bare minimum in response to the pandemic; as a result the NITC business has seen its deployed billable employee base contract since the start of the pandemic. NITC still has a meaningful deployment of billable employees at client sites delivering essential services working at the direction of our customers. While we are still receiving new orders, we are experiencing a significant decline in the volume of new orders compared to prior periods. The COVID-19 crisis is still an evolving situation and we are unable to predict when it will end or the future impact it will have on the business and our operations will be. We have experienced current projects in our Performance Solutions and NITC segments being delayed or paused.

## Delayed filing of Form 10K

We are filing our Form 10-K later than we have historically. We relied on the order issued by the SEC dated March 25, 2020: Order Under Section 36 of the Exchange Act Modifying Exemptions from the Reporting and Proxy Delivery Requirements for Public Companies (Release No. 34-88465)(the "Order"). The Order extends, by no later than forty-five (45) days, the deadlines for filing certain reports made under the Securities Exchange Act of 1934, including Annual Reports on Form 10-K, for registrants subject to the reporting obligations under the Exchange Act that have been impacted by COVID-19, and have filing deadlines between March 1 and July 1, 2020. As a result of federal, state, and local government continuing measures to prevent the spread of COVID-19, including policies regarding working from home, the preparation of the Company's financial statements and disclosures have taken a greater amount of time than originally expected as the Company's staff have experienced delays in completing audit-related functions and required disclosures.

## ITEM 1A. RISK FACTORS.

The following are some of the factors that we believe could cause our actual results to differ materially from historical results and from the results contemplated by the forward-looking statements contained in this report and other public statements we have made. Additional risks and uncertainties not presently known to us, or that we currently see as immaterial, may also harm our business. Most of these risks are generally beyond our control. If any of the risks or uncertainties described below, or any such other or additional risks and uncertainties actually occurs, our business, results of operations and financial condition could be materially and

adversely affected. The following information should be read in conjunction with Item 7 - Management's Discussion and Analysis of Financial Condition and Results of Operations and the consolidated financial statements and related notes under Item 8 - Financial Statements and Supplementary Data.

**A novel strain of coronavirus, the COVID-19 virus, may adversely affect our business operations and financial condition.**

In December 2019, an outbreak of the COVID-19 virus was reported in Wuhan, China. On March 11, 2020, the World Health Organization declared the COVID-19 virus a global pandemic and on March 13, 2020, President Donald J. Trump declared the virus a national emergency in the United States. This highly contagious disease has spread to most of the countries in the world and throughout the United States, creating a serious impact on customers, workforces and suppliers, disrupting economies and financial markets, and potentially leading to a world-wide economic downturn. It has caused a disruption of the normal operations of many businesses, including the temporary closure or scale-back of business operations and/or the imposition of either quarantine or remote work or meeting requirements for employees, either by government order or on a voluntary basis. The pandemic may adversely affect our customers' operations, our employees and our employee productivity. It may also impact the ability of our subcontractors, partners, and suppliers to operate and fulfill their contractual obligations, and result in an increase in costs, delays or disruptions in performance. These supply chain effects, and the direct effect of the virus and the disruption on our employees and operations, may negatively impact both our ability to meet customer demand and our revenue and profit margins. Our employees, in many cases, are working remotely and using various technologies to perform their functions. We might experience delays or changes in customer demand, particularly if customer funding priorities change. Further, in reaction to the spread of COVID-19 in the United States, many businesses have instituted social distancing policies, including the closure of offices and worksites and deferring planned business activity. Our Performance Solutions business segment, as they are classified essential, for the most part continue without pause. With regard to our Nuclear Industry Training and Consulting business segment, because of the embedded presence of our on-site workforce, if COVID-19 or a similar outbreak of infectious disease were to prevent our workers from being deployed to the applicable customer site, it may disrupt our Nuclear Industry Training and Consulting service offerings, interrupt performance on our Nuclear Industry Training and Consulting contracts with clients and negatively impact our business, financial condition and results of operations. Additionally, the disruption and volatility in the global and domestic capital markets may increase the cost of capital and limit our ability to access capital. Both the health and economic aspects of the COVID-19 virus are highly fluid and the future course of each is uncertain. For these reasons and other reasons that may come to light if the coronavirus pandemic and associated protective or preventative measures expand, we may experience a material adverse effect on our business operations, revenues and financial condition; however, its ultimate impact is highly uncertain and subject to change.

**If we cannot comply with the financial or other restrictive covenants in our credit agreement, or obtain waivers or other relief from our lender, we may cause an event of default to occur, which could result in loss of our sources of liquidity and acceleration of our debt.**

In order to fund our recent acquisitions, we borrowed under a delayed-draw term loan facility. Our ability to generate sufficient cash flow from operations to make scheduled payments on our term loan will depend on a range of economic, competitive and business factors, some of which are outside our control. If we are unable to meet our debt service obligations, we may need to refinance or restructure all or a portion of our debt on or before its stated maturity date, sell assets, pay down our outstanding debt and/or raise equity. We may not be able to refinance or restructure any of our debt, sell assets or raise equity, in each case on commercially reasonable terms or at all, which could cause us to default on our obligations and impair our liquidity. Our inability to generate sufficient cash flow to satisfy our debt obligations or to refinance or restructure our obligations on commercially reasonable terms could have a material adverse effect on our business, financial condition, results of operations and cash flows. Our credit agreement also contains financial and other restrictive covenants. Our ability to comply with the covenants in our credit agreement will depend upon our future performance and various other factors, some of which are beyond our control. We may not be able to maintain compliance with all of these covenants. In that event, we would need to seek an amendment to our credit agreement, a waiver from our lender, utilize cash to pay down outstanding debt and/or refinance or restructure our debt. There can be no assurance that we could obtain future amendments or waivers of our credit agreement, or refinance or restructure our debt, in each case on commercially reasonable terms or at all. Our failure to maintain compliance with the covenants under our credit agreement could result in an event of default, subject to applicable notice and cure provisions. Upon the occurrence of an event of default under our credit agreement, our lender could elect to declare all amounts outstanding thereunder to be immediately due and payable, terminate all commitments to extend further credit and cease making further loans. If we were unable to repay all outstanding amounts in full, our lender could exercise various remedies including instituting foreclosure proceedings against our assets pledged to them as collateral to secure that debt.

**We have incurred indebtedness under the CARES Act which will be subject to review, may not be forgivable in whole or in part, and may eventually have to be repaid.**

The Company has applied for, and has received, funds under the Paycheck Protection Program after the period end in the amount of \$10.0 million serviced by Citizen's Bank. The application for these funds requires the Company to, in good faith, certify that the current economic uncertainty made the loan request necessary to support the ongoing operations of the Company. This certification further requires the Company to take into account our current business activity and our ability to access other sources of liquidity sufficient to support ongoing operations in a manner that is not significantly detrimental to the business. The receipt of these funds, and the forgiveness of the loan attendant to these funds, is dependent on the Company having initially qualified for the loan and qualifying for the forgiveness of such loan based on our future adherence to the forgiveness criteria.

On April 24, 2020, the Company received the loan. Under the terms of the CARES Act and the corresponding promissory note, the use of the proceeds of the loan is restricted to payroll costs (as defined in the CARES Act), covered rent, covered utility payments and certain other expenditures that, while permitted, would not result in forgiveness of a corresponding portion of the loan. Following recent amendments to the Paycheck Protection Program, after an eight- or twenty-four-week period starting with the disbursement of the loan proceeds, the Company may apply for forgiveness of some or all of the loan, with the amount which may be forgiven equal to the sum of eligible payroll costs, mortgage interest (not applicable to the Company), covered rent, and covered utility payments, in each case incurred by the Company during the eight- or twenty-four-week period following the date of first disbursement. Certain reductions in the Company's payroll costs or full time equivalent employees (when compared against the applicable measurement period) may reduce the amount of the Loan eligible for forgiveness.

The U.S. Department of the Treasury ("Treasury") and the U.S. Small Business Administration ("SBA") have announced that they will review all Payroll Protection Program loans that equal or exceed \$2.0 million. Guidance from Treasury and SBA has been slow to develop and occasionally unclear. At the same time, the Payroll Protection Program has been amended twice with the latest series of amendments significantly altering the timeline associated with the Payroll Protection Program spending and loan forgiveness. While the Company believes that it acted in good faith and has complied with all requirements of the Payroll Protection Program, if Treasury or SBA determined that the Company's loan application was not made in good faith or that the Company did not otherwise meet the eligibility requirements of the Payroll Protection Program, we may not receive forgiveness of the loan (in whole or in part) and we could be required to return the loan or a portion thereof. Further, there is no guarantee that the Company will receive forgiveness for any amount, and forgiveness will be subject to

Company's submission to its lender of information and documentation as required by SBA and the lender.

A failure to obtain forgiveness of the Payroll Protection Program loan may adversely impact loan covenants under our senior credit facility. In the event that our Payroll Protection Program loan was not forgiven in whole or in part, we may need to seek an amendment to our credit agreement, a waiver from our lender, utilize cash to repay the Payroll Protection Program debt and/or refinance or restructure our outstanding debt. There can be no assurance that we could obtain future amendments or waivers of our credit agreement, or refinance or restructure our debt, in each case on commercially reasonable terms or at all. Our failure to maintain compliance with the covenants under our credit agreement could result in an event of default, subject to applicable notice and cure provisions. Upon the occurrence of an event of default under our credit agreement, our lender could elect to declare all amounts outstanding thereunder to be immediately due and payable, terminate all commitments to extend further credit and cease making further loans. If we were unable to repay all outstanding amounts in full, our lender could exercise various remedies including instituting foreclosure proceedings against our assets pledged to them as collateral to secure that debt.

**Substantial doubt has been raised in our ability to continue as going concern as a result of the economic slowdown caused the global COVID 19 pandemic and continued deterioration of business could have an adverse effect.**

The global COVID-19 pandemic could continue to have a negative impact on our financial position and results of operations. Negative impacts could include but are not limited to: loss or delayed orders, canceled or paused projects, possible disruption of business as a result of worker illness or mandated shutdowns, our ability to maintain compliance with loan covenants and/or refinance existing indebtedness, and access to new capital. Any additional deterioration in the business would result in missing minimum EBITDA covenants and possibly leverage ratios associated with covenants contained in our senior credit facility.

Although as of December 31, 2019, we are in compliance with the amended financial covenants contained in our debt agreement with our lender, and have entered into an additional amendment in April 2020, we cannot rely on forecasted future earnings and could continue to see further deterioration in business causing non-compliance. Management believes the entity will be able to continue to develop new opportunities and will be able to obtain additional debt amendments; however, there is no assurance.

**If we fail to maintain an effective system of internal control over financial reporting, we may not be able to accurately report our financial results, and current and potential stockholders may lose confidence in our financial reporting.**

We are required by the Securities and Exchange Commission ("SEC") to establish and maintain adequate internal control over financial reporting that provides reasonable assurance regarding the reliability of our financial reporting and the preparation of financial statements in accordance with U.S. generally accepted accounting principles. We are likewise required, on a quarterly basis, to evaluate the effectiveness of our internal controls and to disclose any changes and material weaknesses in those internal controls.

Based on management's assessment, management has concluded that the Company's internal control over financial reporting was not effective as of December 31, 2019 due to the existence of two material weaknesses in internal control over financial reporting surrounding the evaluation of significant or unusual transactions and certain controls within the financial reporting close process. Management realizes that two material weaknesses in our internal controls are serious matters and require thoughtful responses. We developed and implemented a remediation plan to address the identified material weakness as follows: (i) hiring of dedicated staffing, (ii) revision of controls in application of guidance, (iii) shortening the close process, (iv) new revenue process tools and controls and (v) and expanding on mitigating controls.

Although we believe that these efforts have strengthened our internal control over financial reporting and address the concern that gave rise to the material weakness as of December 31, 2019, we cannot be certain that our expanded knowledge and revised internal control procedures will ensure that we maintain adequate internal control over our financial reporting in future periods. Any failure to maintain such internal controls could adversely impact our ability to report our financial results on a timely and accurate basis. If our financial statements are not accurate, investors may not have a complete understanding of our operations. Likewise, if our financial statements are not filed on a timely basis as required by the SEC and The NASDAQ Capital Market (Nasdaq), we could confront an enforcement action from the SEC and/or delisting from Nasdaq. In either case, such an event could have a material adverse effect on our business. Finally, inferior internal controls could also cause investors to lose confidence in our reported financial information, which could have a negative effect on the trading price of our common stock.

**Our business is largely dependent on sales to the nuclear power industry. Any significant disruption in this industry would have a material adverse effect upon our revenue and profitability.**

In 2019, 90% of our revenue was from customers in the nuclear power industry (91% in 2018). We expect to derive a significant portion of our revenue from customers in the nuclear power industry for the foreseeable future. Market demand for, and our ability to supply nuclear power plant simulators and related products and services is dependent on the continued operation of nuclear power plants globally and, to a lesser extent, on the construction of new nuclear power plants. A wide range of factors affect the continued operation and construction of nuclear power plants, including the political, regulatory and legal environment in which they operate, the availability and cost of alternative means of power generation, the occurrence of future nuclear incidents, such as the one which occurred at the Fukushima Daiichi nuclear plant in 2011, and general economic conditions. Significant regulatory changes in the U.S. or abroad could materially affect demand for our products, the profitability of our service deliveries to nuclear power industry customers, and the overall efficacy of our current business model.

**Our sales to foreign customers expose us to risks associated with operating internationally.**

Sales of products and services to end users outside the United States accounted for approximately 16% of the Company's consolidated revenue in 2019 and 15% of consolidated revenue in 2018. Consequently, our businesses are subject to a variety of risks that are specific to international operations, including the following:

- export laws and regulations that could erode our profit margins or restrict the export of some or all of our products;
- compliance with the U.S. Foreign Corrupt Practices Act and similar non-U.S. regulations such as the UK Bribery Act;
- the burden and cost of compliance with foreign laws, treaties and technical standards generally, as well as responding to changes in those requirements;
- contract award and funding delays;
- potential restrictions on transfers of funds;
- potential difficulties in accounts receivable collection;

- currency fluctuations, including costs and potentially limited availability of viable hedging options;
  - import and export duties and value added or other taxes;
  - transportation and communication delays and interruptions;
  - differences in insurance availability and coverage in some jurisdictions;
  - difficulties involving strategic alliances and managing foreign sales agents or representatives;
  - uncertainties arising from foreign local business practices and cultural considerations; and
  - potential military conflicts and political risks.
- potential disruption of our international business due to the worldwide COVID-19 virus outbreak.

In December 2019, an outbreak of the COVID-19 virus was reported in Wuhan, China. On March 11, 2020, the World Health Organization declared the COVID-19 virus a global pandemic. This highly contagious disease has spread to most of the countries in the world and throughout the United States, creating a serious impact on customers, workforces and suppliers, disrupting economies and financial markets, and potentially leading to a world-wide economic downturn. It has caused a disruption of the normal operations of many businesses, including the temporary closure or scale-back of business operations and/or the imposition of either quarantine or remote work or meeting requirements for employees, either by government order or on a voluntary basis. The pandemic may continue to adversely affect our international customers' operations, our employees and our employee productivity. It may also continue to impact the ability of our subcontractors, partners, and suppliers to operate and fulfill their contractual obligations, resulting in increased costs, and delays or disruptions in performance. These supply chain effects, and effect of the virus and the disruption on our employees and operations, may negatively impact both our ability to meet customer demand and our revenue and profit margins.

While we have and will continue to adopt measures to reduce the potential impact of losses resulting from the risks of our business, we cannot ensure that such measures will be adequate. During the years ended December 31, 2019 and 2018, we did not have revenues greater than 10% from any individual foreign country.

**Exports and sales to certain foreign countries, including the People's Republic of China, are subject to regulatory, political, and other risks.**

The export and sale of our services and technology to certain foreign countries including China, are subject to U.S. export control regulations. Export control policy pertaining to China and other countries may be enforced through laws and regulations administered by the Department of Commerce and the Department of Energy, and jurisdiction with regard to the export and sale of our services and technology may be overlapping and unclear. Specific governmental authorizations may be required before we can export our services or technology to countries such as China, or collaborate with foreign entities or foreign individuals located in countries such as China. These restrictions include our own wholly-owned Chinese subsidiary and its employees. If export or other authorizations are required and not granted, or are significantly delayed, our international business plans pertaining to China and other countries could be materially affected. Further, our exports and sales to China and other countries with respect to which the United States may have shifting or negative diplomatic and trade relations, including sales made by or through our wholly-owned Chinese subsidiary, expose us to particular risks associated with the political and regulatory relationship between the U.S. and China and between the U.S. and such other countries.

In October 2018, the Department of Energy announced the tightening of certain export control restrictions with regard to the export of nuclear technology to China, including certain presumptive denials with regard to the export of identified nuclear technologies to China. Although we do not believe that these policy changes cover our technologies or services, additional restrictions pertaining to U.S. regulation and policy pertaining to international trade with China could adversely affect our business in China and the performance of our Chinese subsidiary.

Finally, violation of export control regulations, including those pertaining to China, could subject us to fines and other penalties, such as losing the ability to export for a period of years, which would limit our revenue growth opportunities and significantly hinder our attempts to expand our business internationally. Although we take steps to monitor and ensure our compliance with all applicable export laws and regulations, we are nevertheless exposed to political and regulatory risks that we may not be able to mitigate fully and that may have a material adverse effect upon our international business operations.

**Our operations within China subject us to risks and uncertainties relating to the laws and regulations of China.**

Our business and operations within China may be adversely affected by China's continuously evolving internal policies, laws and regulations, including those relating to nuclear technology, trade, taxation, import and export tariffs or restrictions, currency controls, cybersecurity and data protection, indigenous innovation and the promotion of a domestic nuclear industry, and intellectual property rights and enforcement and protection of those rights. Enforcement of existing laws or agreements in China may be inconsistent. In addition, changes in the political environment, governmental policies, international trade policies and relations, or U.S. - China relations could result in revisions to laws or regulations or their interpretation and enforcement, exposure of our proprietary intellectual property to risk of loss, increased taxation, trade sanctions, the imposition of import duties or tariffs, restrictions on imports or exports, currency revaluations, or retaliatory actions by the Chinese government in response to U.S. actions, any or all of which could have an adverse effect on our business plans and operating results.

**Customer concentration in the U.S. nuclear power industry subjects us to risks and uncertainty, which we may not be able to mitigate through diversification.**

The U.S. nuclear industry has significant customer concentration with a limited number of entities owning all of the 99 nuclear reactors currently operating in the United States. In 2019, we continued to experience high customer concentration with respect to each of our businesses. Indeed, one customer accounted for 27.8% of our total consolidated revenue for the year-ended December 31, 2019. We monitor our customer concentration and seek to diversify our customer base within this concentrated industry. In addition to pursuing diversification strategies and expanding relationships with targeted customers, we mitigate the associated customer concentration risk by developing meaningful relationships with each nuclear power plant, which are often separately responsible for vendor selection and individual procurement decisions.

Our diversification strategy is intended to reduce our customer concentration risk. One of the risks associated with customer concentration was underscored by a recent event at a customer location following our acquisition of DP Engineering. After that event, the customer identified a prior plant modification by DP Engineering as meriting further analysis. As is customary in the industry, pursuant to an Engineer of Choice agreement, the customer issued DP Engineering a

Notice of Suspension by email while a root cause analysis of the event proceeds. Because of DP Engineering's concentrated nature, this notice impacted a number of unrelated projects at other locations. Although more than 25% of the impacted projects have already been restarted at the request of the customer, this incident shows that high customer concentration can result in events at one location impacting projects at other locations. As a follow on to the Notice of Suspension, the Company received a Notice of Termination from this customer, notifying the Company that they were terminating their Engineer of Choice consulting service agreement with DP Engineering. Accordingly, DP Engineering is completing work under any open Contract Orders in accordance with the terms of the respective Contract Orders and the Agreement, which shall be deemed to remain in effect for purposes only of completing any such Contract Orders.

**Our revenue, results of operations, and cash flows may suffer upon the loss of a significant customer.**

For the years ended December 31, 2019 and 2018, the following customers have provided more than 10% of **Nuclear Industry Training and Consulting** segment's revenues:

	Years ended December 31,	
	2019	2018
Customer A	46%	48%
Customer B	11%	12%

Hyperspring and Absolute, which together comprise our Nuclear Industry Training and Consulting segment, may lose a significant customer if any existing contract with such customer expires without extension, renewal, or negotiation or if it is terminated by the customer prior to its expiration. A number of Hyperspring's and Absolute's contracts typically are subject to expiration during each year, and either company may lose any of these contracts if they are unable to extend, renew, or renegotiate the contracts. The loss of a significant customer would adversely affect our Nuclear Industry Training and Consulting segment's revenue, results of operations, and cash flows.

For the years ended December 31, 2019 and 2018, the following customer has provided more than 10% of **Performance Improvement Solutions** segment's revenues:

	Years ended December 31,	
	2019	2018
Customer C	10%	26%
Customer A	13%	2%

Customer A also provided 27.8% and 26.9% of our total consolidated revenue for the years ended December 31, 2019 and 2018, respectively. While the acquisition of DP Engineering increased our product and service offerings, we anticipate that it will further increase the customer concentration in our Performance Improvement Solutions segment.

GSE Performance Solutions, Inc., GSE True North Consulting, LLC, and DP Engineering, which together comprise our Performance Improvement Solutions segment, may lose a significant customer if any existing contract with such customer expires without extension, renewal, or negotiation or if it is terminated by the customer prior to expiration. A majority of the contracts entered into by our Performance Improvement Solutions businesses are able to be terminated by our customer on relatively short notice without cause or further compensation. The loss of any significant customer would adversely affect our Performance Improvement Solutions segment's revenue, results of operations, and cash flows.

**A sustained decline in the price of our common stock or weaker than forecasted operating results could result in write-downs of goodwill and other intangible assets and capitalized software development costs.**

In conjunction with business acquisitions, we record goodwill and other intangible assets and review their fair value for impairment annually as of December 31, or on an interim basis if impairment indicators are present, such as a significant reduction in our market capitalization, significant declines in operating performance or disruptions to the business that could reduce our future cash flow. On November 14, 2014, we recorded \$5.6 million of goodwill related to our acquisition of Hyperspring. On September 20, 2017, we recorded \$2.8 million of goodwill related to our acquisition of Absolute. On May 11, 2018, we recorded \$4.7 million of goodwill related to our acquisition of True North, LLC. On February 15, 2019, we recorded \$5.8 million of goodwill related the acquisition of DP Engineering. Following the February 23, 2019 event occurring at DP Engineering's largest customer and subsequent receipt of the Notice of Suspension on February 28, 2019. The Company determined that the notice of suspension was a triggering event necessitating an interim assessment of a potential impairment of definite-lived intangible assets and goodwill. The Company recognized an impairment charge of \$5.6 million to write down goodwill on DP Engineering at March 31, 2019. We tested our goodwill at the reporting unit level as of December 31, 2019 and 2018, and there was no indication of impairment. We can provide no assurance that we will not have an impairment charge in future periods as the result of changing conditions. See Note 7 to our consolidated financial statements for information regarding our goodwill.

We capitalize certain computer software development costs and, accordingly, the capitalized costs are reported on our balance sheet. Capitalization of computer software development costs begins upon the establishment of technological feasibility. Capitalization ceases and amortization of capitalized costs begins when the software product is commercially available for general release to customers. Amortization of capitalized computer software development costs is included in cost of revenue and is determined using the straight-line method over the remaining estimated economic life of the product, typically three years. On an annual basis, and more frequently as conditions indicate, we assess the status of our development programs and the recoverability of the unamortized software development costs by estimating the net undiscounted cash flows expected to be generated by the sale of the product. If the undiscounted cash flows are not sufficient to recover the unamortized software costs, we will write-down these costs to their estimated fair value based on the future undiscounted cash flows. The excess of any unamortized computer software costs over the related net realizable value is written down and charged to operations.

Write-down of goodwill and capitalized software development costs in the current and future accounting periods may have an impact on the value of the company, results of operations, and price of our common stock.

**Our expense levels are based upon our expectations as to future revenue, and we may be unable to adjust spending to compensate for a revenue shortfall.**

**Accordingly, any revenue shortfall would likely have a disproportionate effect on our operating results.**

Our revenue was \$83.0 million and \$92.2 million for the years ended December 31, 2019 and 2018, respectively. We had operating loss of \$7.4 million and operating income \$1.4 million for the years ended December 31, 2019 and 2018, respectively. Our operating results have fluctuated in the past and may fluctuate significantly in the future as a result of a variety of factors, including purchasing patterns, timing of launch or release of new products and enhancements by us and our competitors, and fluctuating global economic conditions. Because our expense levels are based in part on our expectations as to future revenue and includes certain fixed, pre-negotiated, and prepaid costs, we may be unable to adjust spending in a timely manner to compensate for any revenue shortfall. Because of this lag in response time, such revenue shortfalls likely would have a disproportionate adverse effect on our operating results.

**Our backlog is subject to unexpected adjustments and cancellations and may not be a reliable indicator of future revenues or earnings.**

Backlog represents products or services that our customers have committed by contract or purchase order to purchase from us and that we have not yet delivered or recognized as revenue. Our backlog as of December 31, 2019 and 2018 was \$52.7 million and \$70.6 million, respectively. There can be no assurance that the revenues projected in our backlog will be realized or, if realized, will result in profits. Because of project cancellations or changes in project scope and schedule, we cannot predict with certainty whether or when backlog services will be performed, or products delivered. In addition, even where a project proceeds as scheduled, it is possible that contracted parties may default and fail to pay amounts owed to us. Our poor project performance could increase the cost associated with a project. Thus, delays, suspensions, cancellations, payment defaults, scope changes and poor project execution could materially reduce or eliminate the revenues and profits that we actually realize from projects in backlog. Reductions in our backlog due to cancellation or modification by a customer or for other reasons may adversely affect, potentially to a material extent, the revenues and earnings we actually receive from contracts and orders included in our backlog. Many, but not all, of the contracts in our backlog provide for cancellation fees in the event customers cancel projects. These cancellation fees usually provide for reimbursement of our out-of-pocket costs and payments, for work performed prior to cancellation including varying percentages of the profits we would have realized had the contract been completed. We usually have no contractual right to payment for all of the lost revenue or lost profits in the event of cancellation of the contracts and orders reflected in our backlog, however. Projects may remain in our backlog for extended periods of time. If we experience significant project terminations, suspensions, or scope adjustments to contracts reflected in our backlog, our financial condition, results of operations and cash flows may be adversely impacted.

**We are currently a party to multiple fixed price contracts and will continue to enter into similar contracts in the future. If we are not able to estimate accurately or control costs on such projects, the profitability of such projects could be reduced.**

A significant portion of our revenue is attributable to contracts entered into on a fixed price basis, which enable us to benefit from cost savings, but expose us to the risk of cost overruns. If our initial estimates are incorrect regarding our costs of performance under these contracts, or if unanticipated circumstances arise, we could experience cost overruns that could result in reduced profits or even net losses on these contracts. Our financial condition is dependent upon our ability to maximize our earnings from our contracts. Lower earnings or losses caused by cost overruns could have a negative impact on our financial results.

Under our time and materials contracts, we are paid for labor at negotiated hourly billing rates and for certain expenses. Under cost-reimbursable contracts, which are subject to a contract ceiling amount, we are reimbursed for allowable costs and are paid a fee, which may be fixed, or performance based. In both cases, however, if our costs exceed the contract ceiling or are not allowable under the provisions of the contract or applicable regulations, we may not be able to obtain reimbursement for all such costs even under a time and materials or cost-reimbursable contract.

Our inability to successfully estimate and manage costs on each of these contract types may materially and adversely affect our financial condition.

**Our simulation business is dependent on product innovation and research and development, which costs are incurred prior to realization of revenue for new products and improvements.**

We believe that our success will depend in large part on our ability to maintain and enhance our current product line, develop new products, maintain technological competitiveness and meet an expanding range of customer needs. Our product development activities are aimed at the development and expansion of our library of software modeling tools, the improvement of our display systems and workstation technologies, and the advancement and upgrading of our simulation technology. The life cycles for software modeling tools, graphical user interfaces, and simulation technology are variable and largely determined by competitive pressures and the evolution of software and standards that may be controlled by third parties. Consequently, we will need to continue to make significant investments in research and development to enhance and expand our capabilities in these areas and to maintain our competitive advantage. We cannot control, and we may be unable to predict accurately, the development and evolution of these competitive pressures and external software and standards. We may be unable to monetize our investment in research and development in a timely manner, or at all. Unexpected or excessive delays in realizing a return on these investments may have a material and adverse effect on our cash position, results of operations, and financial condition.

**We use derivative instruments in the normal course of our business which could result in financial losses and exposure to other risks that negatively impact our net income (loss) and business operational efficiency.**

We periodically enter into forward foreign exchange contracts to manage market risks associated with the fluctuations in foreign currency exchange rates on foreign-denominated trade receivables. We could recognize financial losses as a result of volatility in the market values of these contracts or if a derivative instrument counterparty fails to perform. We attempt to minimize credit exposure by limiting counterparties to internationally recognized financial institutions, but even these counterparties are subject to default and contract risk and this risk is beyond our control. We also engage in interest rate hedging transactions in the ordinary course of our business to mitigate the risk that amounts borrowed under our credit facility at floating interest rates may be affected by adverse rate movements. Depending on future business, market, and interest rate environments, however, these hedging transactions may not be effective to mitigate the financial impact of the risks for which they were put into place sufficiently to justify their expense. Additionally, we may need or wish to avail ourselves of other forms of hedging or derivative instruments in the future depending on our business needs, and these other types of derivative instruments may be subject to the same and other risks and may not be available to us on a cost-effective or risk-controlled basis, if at all. The unavailability of viable and cost effective risk management, hedging, or similar instruments now or in the future could adversely impact our business operational efficiency or results.

**We issue performance, advance payment, and bid bonds in the normal course of our business which could result in financial losses that negatively impact our net income (loss).**



We may be required to issue performance, advance payment, and bid bonds to our customers and potential customers as a normal part of our business activities. Our customers may have the ability to draw upon these performance bonds in the event we fail to cure a material breach of the contract within a specified period after receiving notice from the customer regarding the nature of the breach. For the year ended December 31, 2019, we did not issue any advance payment or performance bonds, but we may be required to do so in the future to secure contract awards.

**We rely upon our intellectual property rights for the success of our business, but the steps we have taken to protect our intellectual property may be inadequate.**

Although we believe that factors such as the technological and creative skills of our personnel, new product developments, frequent product enhancements and reliable product maintenance are important to establishing and maintaining a technological leadership position, our business depends, in part, on the strength of our intellectual property rights in our proprietary technology and information. We rely upon a combination of trade secret, copyright, and trademark law, contractual arrangements and technical means to protect our intellectual property rights. We enter into confidentiality agreements with our employees, consultants, joint venture and alliance partners, customers, and other third parties that are granted access to our proprietary information, and we limit access to and distribution of our proprietary information. There can be no assurance, however, that we have protected or will be able to protect our proprietary technology and information adequately, that the unauthorized disclosure or use of our proprietary information will be prevented, that others have not or will not develop similar technology or information independently, or, to the extent we own any patents in the future, that others have not or will not be able to design around those future patents. Furthermore, the laws of certain countries in which our products are sold do not protect our products and intellectual property rights to the same extent as the laws of the United States. Our inability to protect our intellectual property rights from infringement, dilution, or loss could make it more difficult for us to generate revenue from the offer, licensure, and sale of our products and services and could enable third parties to compete with us more effectively.

**The industries in which we operate are highly competitive. This competition may prevent us from raising prices at the same pace at which our costs increase.**

Our businesses operate in highly competitive environments with both domestic and foreign competitors, many of whom have substantially greater financial, marketing, and other resources than we do. The principal factors affecting competition in our industries include price, technological proficiency, ease of system configuration and use, product reliability, applications expertise, engineering support, local presence, personal relationships, and the relative financial stability of the competitor. We believe competition in the simulation fields may further intensify in the future as a result of advances in technology, consolidations and strategic alliances among competitors, increased costs required to develop new technology and the increasing importance of software content in systems and products. Because our business has a significant international component, changes in the value of the dollar could adversely affect our ability to compete internationally and could reduce our profitability on international business opportunities that we do win. Any of these competitive factors, or any combination of two or more factors, could make it more difficult for us to bid successfully on new projects, or to complete projects at profit margins that we consider reasonable. An inability or reduced ability to win new work would have a material adverse impact on our backlog and revenue, and an inability or reduced ability to secure reasonable profit margins on projects awarded to us would have a material adverse impact on our profitability and overall results of operations.

**We may encounter difficulties in effectively integrating acquired businesses.**

As part of our business strategy, we have acquired, and intend to acquire, companies with compatible or related products. These acquisitions will be accompanied by the risks commonly encountered in acquisitions of companies, which include, among other things:

- potential exposure to unknown liabilities of the acquired companies;
- higher than anticipated acquisition costs and expenses;
- depletion of cash and other company assets and resources in connection with the acquisition or integration;
- difficulty and expense of integrating the operations and personnel of the companies, especially if the acquired operations are geographically distant or culturally different;
- potential disruption of our ongoing business and diversion of management time and attention;
- failure to maximize our financial and strategic position by the successful incorporation of acquired technology;
- difficulties in adopting and maintaining uniform standards, controls, procedures, and policies;
- loss of key employees and customers as a result of changes in management; and
- possible dilution to our shareholders.

We may not be successful in overcoming these risks or any other problems encountered in connection with any of our acquisitions, and if we are not successful, our financial results may be materially impacted. We may be forced to modify our strategic objectives or seek alternative sources of growth.

**We are dependent on our management team, and the loss of or the inability to attract and retain one or more key employees or groups could harm our business and prevent us from implementing our business plan in a timely manner.**

Our future success is substantially dependent on the continued services and continuing contributions of our executive officers and other key personnel. All of our recently acquired businesses, including Hyperspring, Absolute, True North, and DP Engineering, are particularly dependent on key personnel and their key strategic relationships. The loss of the services of any of our executive officers or other key personnel could harm our business. Our future success also depends on

our ability to continue to attract, retain, and motivate highly skilled employees. If we are not able to attract and retain key skilled personnel, our business could be harmed and our revenue, profitability, and overall results of operations could be materially impacted.

**A failure to attract and retain technical personnel could reduce our revenue and our operational effectiveness.**

There is a continuing demand for qualified technical personnel in the industries within which we operate. We believe that our future growth and success will depend upon our ability to attract, train and retain such personnel. Our design and development efforts, particularly within our Performance Improvement Solutions business segment, depend on hiring and retaining qualified technical personnel. An inability to attract or maintain a sufficient number of technical personnel could have a material adverse effect on our contract performance or on our ability to capitalize on market opportunities.

**The nuclear power industry, our largest customer group, is associated with a number of hazards which could create significant liabilities.**

Our business could expose us to third party claims with respect to product, environmental and other similar liabilities. Although we have sought protection from these potential liabilities through a variety of legal and contractual provisions as well as through liability insurance, the effectiveness of such protections has not been fully tested. Certain of our products and services are used by the nuclear power industry primarily in operator training. Although our contracts for such products and services typically contain provisions designed to protect us from potential liabilities associated with such use, there can be no assurance that we would not be materially adversely affected by claims or actions which may potentially arise due to factors that may be outside of our direct control.

**Cyber security incidents could disrupt business operations, result in the loss of critical and confidential information, and adversely impact our reputation and results of operations.**

Global cyber security threats can range from uncoordinated individual attempts to gain unauthorized access to our information technology (IT) systems to sophisticated and targeted measures known as advanced persistent threats. While we employ comprehensive measures to prevent, detect, address and mitigate these threats (including access controls, data encryption, vulnerability assessments, continuous monitoring of our IT networks and systems, and maintenance of backup and protective systems), cyber security incidents, depending on their nature and scope, could potentially result in the misappropriation, destruction, corruption or unavailability of critical data and confidential or proprietary information (our own or that of third parties) and the disruption of business operations. The potential consequences of a material cyber security incident include reputational damage, litigation with third parties, civil or regulatory liability for loss of sensitive or protected information such as personal data, incident response costs, diminution in the value of our investment in research, development and engineering, loss of intellectual property, and increased cyber security protection and remediation costs, which in turn could adversely affect our competitiveness and results of operations.

**Third-party claims that we allegedly infringe the intellectual property rights of others may be costly to defend or settle and could damage our business.**

We cannot be certain that our software and services do not infringe issued patents, copyrights, trademarks or other intellectual property rights of third parties. We may be subject to legal proceedings and claims from time to time, including claims of alleged infringement of intellectual property rights of third parties by us or our licensees concerning their use of our software products and integration technologies and services. Third parties may bring claims of infringement directly against us, or because our software is integrated with our customers' networks and business processes, as well as other software applications against us, our customers, and our business partners or software suppliers, if the cause of the alleged infringement cannot easily be determined.

Claims of alleged infringement may have a material adverse effect on our business and may discourage potential customers from doing business with us on acceptable terms, if at all, even if the claims are ultimately adjudicated to have no merit, dismissed, or settled. Defending against claims of infringement may be time-consuming and may result in substantial costs and diversion of resources, including our management's attention to our business. Furthermore, a party making an infringement claim could secure a judgment that requires us to pay substantial damages. A judgment could also include an injunction or other court order that could prevent us from selling our software or require that we re-engineer some or all of our products or modules. Claims of intellectual property infringement also might require us to enter costly royalty or license agreements. We may be unable to obtain royalty or license agreements on terms acceptable to us or at all. Our business, operating results and financial condition could be harmed significantly if any of these events were to occur, and the price of our common stock could be adversely affected. In addition, we have agreed, and may agree in the future, to indemnify certain of our customers against claims that our software infringes upon the intellectual property rights of others. Although we carry general liability insurance, our current insurance coverage may not apply to, and likely would not protect us entirely or at all from, liability that may be imposed under any of the types of claims described above.

**We are subject to a wide variety of laws and regulations, and these may change.**

Our businesses are subject to regulation by U.S. federal and state laws, and foreign laws, government regulations and policies, and other administrative requirements. Changes to laws or regulations may require us to modify our business objectives if existing practices become more restricted, subject to escalating costs, or prohibited outright. Particular risks include possible curtailment of our intended business activities or strategies as a result of changed or new regulatory risks arising from federal laws and regulations, such as laws and regulations regarding export of sensitive technologies or technical information or changed interpretations of existing laws and regulations. Our business and the industries in which we operate are also at times being reviewed or investigated by regulators, which could lead to enforcement actions, fines and penalties, or the assertion of private litigation claims and damages. Any significant change to laws, regulations, enforcement policies, or liability regimes, or other actions by government bodies having jurisdiction over our business, may have material adverse effects on our business and profitability. We have only limited ability to foresee, plan for, or influence changes to these requirements.

**Provisions in our corporate documents and Delaware law could delay or prevent a change in control of our company, even if that change may be considered beneficial by some stockholders.**

The existence of some provisions of our certificate of incorporation and bylaws and Delaware law could discourage, delay or prevent a change in control of our company that a stockholder may consider favorable. These include provisions:

- providing that our Board of Directors fixes the number of members of the board and fills all vacancies on the Board of Directors;
- providing for the division of our Board of Directors into three classes with staggered terms;

- limiting who may call special meetings of stockholders;
- prohibiting stockholder action by written consent, thereby requiring stockholder action to be taken at a meeting of the stockholders;
- establishing advance notice requirements for nominations of candidates for election to our Board of Directors or for proposing matters that can be acted on by stockholders at stockholder meetings;
- establishing supermajority vote requirements for certain amendments to our certificate of incorporation and bylaws;
- limiting the right of stockholders to remove directors; and
- authorizing the issuance of “blank check” preferred stock, which could be issued by our Board of Directors to increase the number of outstanding shares and thwart a takeover attempt.

In addition, we are subject to Section 203 of the Delaware General Corporation Law, which may have an anti-takeover effect with respect to transactions not approved in advance by our Board of Directors, including discouraging takeover attempts that might result in a premium over the market price for shares of our common stock.

We believe these provisions protect our stockholders from coercive or otherwise unfair takeover tactics by requiring potential acquirers to negotiate with our Board of Directors and by providing our Board of Directors with more time to assess any acquisition proposal and are not intended to make our company immune from takeovers. These provisions apply even if the offer may be considered beneficial by some stockholders, however, and could delay or prevent an acquisition that our Board of Directors determines is not in the best interests of our company and our stockholders.

**Our ability to use our net operating loss (NOL) carryforward and certain other tax attributes may be limited.**

Under Section 382 of the Internal Revenue Code of 1986, as amended, if a corporation undergoes an “ownership change,” generally defined as a greater than 50% change (by value) in its equity ownership over a three-year period, the corporation’s ability to use its pre-change NOL carryforwards, and other pre-change tax attributes (such as research tax credits) to offset its post-change income or tax liabilities may be limited. We may experience ownership changes in the future as a result of shifts in our stock ownership. As a result, if we earn net taxable income, our ability to use our pre-change NOL carryforwards to offset U.S. federal taxable income may be subject to limitations, which could potentially result in increased future tax liability to us.

On March 27, 2020, the United States enacted the Coronavirus Aid, Relief and Economic Security Act (CARES Act). The Cares Act is an emergency economic stimulus package that includes spending and tax breaks to strengthen the United States economy and fund a nationwide effort to curtail the effect of COVID-19. While the CARES Act provides sweeping tax changes in response to the COVID-19 pandemic, some of the more significant provisions which are expected to impact the Company’s financial statements include removal of certain limitations on utilization of net operating losses and increasing the ability to deduct interest expense, as well as amending certain provisions of the previously enacted Tax Cuts and Jobs Act. Due to the recent enactment of the CARES Act, the Company is unable to fully quantify the impact, if any, that the CARES Act will have on its financial position, results of operations or cash flows.

**ITEM 1B. UNRESOLVED STAFF COMMENTS.**

None.

**ITEM 2. PROPERTIES.**

The Company is headquartered in Sykesville, Maryland. On November 28, 2017, the Company entered into an office lease agreement to sublease 5,039 rentable square feet of an office building located in Columbia, Maryland. The lease is for an initial six years and six months with two renewal periods of five years each. The Company relocated many of the back-office employees to the new office in the first quarter of 2018 from its Sykesville, Maryland office.

The Company leases a facility in Sykesville, Maryland (37,000 square feet). The lease for this facility expires on June 30, 2023. As of December 31, 2019, the Company subleased approximately 7,472 square feet of the facility with a sublease term ending June 30, 2023. As of December 31, 2019, as part of the Company's ongoing restructuring plan, management decided to cease-use, and abandoned (21,913 square feet) a portion of this right of use lease.

In addition, the Company leases office space domestically in Huntsville, Alabama; Navarre, Florida; Montrose, Colorado; Fort Worth, Texas, and internationally in Beijing, China. The Company leases these facilities for terms ending between 2020 and 2023. Additionally, as of December 31, 2019, management decided to cease-use, abandoned (9,936 square feet) a portion of the right of use lease in Fort Worth, Texas. See Notes 6 and 18 to our consolidated financial statements for information regarding our restructuring activity and leases.

**ITEM 3. LEGAL PROCEEDINGS.**

The Company and its subsidiaries are from time to time involved in ordinary routine litigation incidental to the conduct of its business. The Company and its subsidiaries are not a party to, and its property is not the subject of, any material pending legal proceedings that, in the opinion of management, are likely to have a material adverse effect on the Company's business, financial condition or results of operations.

On March 29, 2019, a former employee of Absolute Consulting, Inc., filed a putative class action against Absolute and the Company, *Joyce v. Absolute Consulting Inc.*, case number *1:19 cv 00868 RDB*, in the United States District Court for the District of Maryland. The lawsuit alleges that plaintiff was not properly compensated for overtime hours that he worked. In addition, he alleges that there is a class of employees who were not properly compensated for overtime hours worked. Absolute and the Company waived service and, on May 28, 2019, Absolute filed an answer to the complaint and the Company filed a motion to dismiss asserting that the Company was not the plaintiff's employer and, therefore, not a proper party to the litigation. The court has granted the Company's motion to dismiss the Company from the case, and the deadline has now passed for the plaintiff to amend the complaint to allege additional facts supporting reinsertion of the Company as a defendant. Therefore, only Absolute remains as a defendant. No scheduling order has been issued. Absolute intends to vigorously defend this litigation with the Company's assistance and support. The Company is unable to conclude that the likelihood of an unfavorable outcome in this matter is remote or probable, but Absolute continues to deny the allegations and defend the case. The Company has asserted an indemnification claim related to this litigation against the sellers of Absolute.

**ITEM 4. MINE SAFETY DISCLOSURES.**

Not applicable.

## PART II

### ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS, AND ISSUER PURCHASES OF EQUITY SECURITIES.

The Company's common stock is listed on the NASDAQ Capital Market, where it trades under the symbol "GVP". The following table sets forth, for the periods indicated, the high and low sale prices for the Company's common stock reported by the Nasdaq Stock Exchange for each full quarterly period within the two most recent fiscal years:

2019			
Quarter	High		Low
First	\$	3.15	\$ 2.40
Second	\$	2.87	\$ 2.17
Third	\$	2.31	\$ 1.67
Fourth	\$	1.84	\$ 1.08

2018			
Quarter	High		Low
First	\$	3.55	\$ 3.10
Second	\$	3.40	\$ 3.10
Third	\$	3.80	\$ 2.75
Fourth	\$	3.50	\$ 2.00

On May 31, 2020, there were 20,389,082 shares of common stock outstanding. As of the latest record date, the Company had 740 holders of record. This number does not include GSE, holder of treasury shares, or beneficial owners of our common stock whose shares are held in the names of various dealers, clearing agencies, banks, brokers and other fiduciaries. The Company has never declared or paid a cash dividend on its common stock. The Company currently intends to retain future earnings to finance the growth and development of its business and, therefore, does not anticipate paying any cash dividends in the foreseeable future on its common stock.

The Company believes factors such as quarterly fluctuations in results of operations and announcements of new products by the Company or by its competitors may cause the market price of the common stock to fluctuate, perhaps significantly. In addition, in recent years the stock market in general, the shares of technology companies in particular, have experienced extreme price fluctuations. The Company's common stock has also experienced a relatively low trading volume, making it further susceptible to extreme price fluctuations. Additionally, market and geopolitical unexpected or unpredictable events may cause adverse market price fluctuations of the common stock. These factors may adversely affect the market price of the Company's common stock.

### ITEM 6. SELECTED FINANCIAL DATA.

This information is not required for smaller reporting companies.

**ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS.**

GSE is a leading provider of engineering, expert staffing, and simulation software to clients in the power and process industries. We provide customers with simulation, engineering and plant services that help clients reduce risks associated with operating their plants, increase revenue through improved plant and employee performance, and lower costs through improved operational efficiency. In addition, we provide professional services that systematically help clients fill key vacancies in the organization on a short-term basis, primarily in procedures, engineering, technical support, and training focused on regulatory compliance and certification in the nuclear power industry. Our operations also include interactive computer-based tutorials and simulation software for the refining, chemical, and petrochemical industries.

On February 15, 2019, GSE acquired DP Engineering for \$13.5 million (subject to pre- and post-closing working capital adjustments). DP Engineering is a provider of value-added technical engineering solutions and consulting services to nuclear power plants with an emphasis on preparation and implementation of design modifications during plant outages. For reporting purposes, DP Engineering is included in our Performance segment due to similarities in services provided including engineering solutions and implementation of design modifications to the nuclear power sector.

Approximately one week following our acquisition of DP Engineering, an adverse event occurred at one of DP Engineering's major customer's location that affected plant operations. In its initial analysis of the causes of that event, the customer identified a prior plant modification by DP Engineering as meriting further analysis. As is customary in the industry, pursuant to an Engineer of Choice agreement, the customer issued DP Engineering a Notice of Suspension while a root cause analysis was completed. We completed our root cause analysis and presented it to the customer on April 25, 2019. Following the initial analysis, the customer had DP Engineering restart all existing work with the Company, however, the customer also informed DP Engineering that it was suspended from bidding new contracts. This incident adversely impacted the relationship between DP Engineering and its customer. As a result, DP Engineering experienced a significant decline in new orders from this customer and was not able or permitted to bid on new work. The Company determined this represented a triggering event requiring an interim assessment for impairment. As a result of the impairment analysis, we recognized impairment charges of \$5.6 million on goodwill assets related to the acquisition of DP Engineering during the quarter ended March 31, 2019. On August 6, 2019, as a follow on to the Notice of Suspension, the Company received a Notice of Termination from this customer, notifying the Company that they were terminating their Engineer of Choice consulting service agreement with DP Engineering. Accordingly, DP Engineering is completing work under any open contract orders in accordance with the terms of the respective contract orders and the consulting services agreement, which shall be deemed to remain in effect for purposes only of completing any such Contract Orders. Upon notice of termination from the customer, management has been assessing the impact of this customer loss on DP Engineering and the likelihood of additional impairment that would be recognized against goodwill and intangible assets.

In December 2019, a novel strain of coronavirus, the COVID-19 virus, was reported in Wuhan, China. On January 30, 2020, the World Health Organization ("WHO") announced a global health emergency because of the COVID-19 virus. On March 11, 2020, the WHO declared the COVID-19 virus a global pandemic and on March 13, 2020, President Donald J. Trump declared the virus a national emergency in the United States. As of the date of this report, both the health and economic aspects of the COVID-19 virus are highly fluid and the future course of each is uncertain. As such, the ultimate impact the pandemic will have on the Company's financial condition, liquidity, and future results of operations is highly uncertain and subject to change. Management is actively monitoring the situation on its financial condition, liquidity, operations, industry, supplies, and workforce. The Company expects that financial results for the fiscal year 2020 will be lower as a result of COVID-19. In response, however, our Absolute Consulting business is providing payroll services for more than 100 individuals deployed for a stand-up hospital in Long Beach, California in support of the state's COVID-19 efforts.

The Company has applied for, and received, funds under the PPP after the period end in the amount of \$10.0 serviced by Citizen's Bank. The application for these funds requires the Company to, in good faith, certify that the current economic uncertainty made the loan request necessary to support the ongoing operations of the Company. This certification further requires the Company to take into account our current business activity and our ability to access other sources of liquidity sufficient to support ongoing operations in a manner that is not significantly detrimental to the business. The receipt of these funds, and the forgiveness of the loan attendant to these funds, is dependent on the Company having initially qualified for the loan and qualifying for the forgiveness of such loan based on our future adherence to the forgiveness criteria.

**Results of Operations.**

The following table sets forth the results of operations for the periods presented expressed as a percentage of revenue.

(\$ in thousands)

	Years ended December 31,			
	2019	%	2018	%
Revenue	\$ 82,975	100.0%	\$ 92,249	100.0%
Cost of revenue	62,677	75.5%	69,119	74.9%
Gross profit	20,298	24.5%	23,130	25.1%
Operating expenses				
Selling, general and administrative	16,169	19.5%	17,469	18.9%
Research and development	710	0.9%	899	1.0%
Restructuring charges	2,478	3.0%	1,269	1.4%
Loss on impairment	5,597	6.7%	-	0.0%
Depreciation	363	0.4%	515	0.6%
Amortization of definite-lived intangible assets	2,400	2.9%	1,612	1.7%
Total operating expenses	27,717	33.4%	21,764	23.6%
Operating (loss) income	(7,419)	-8.9%	1,366	1.5%

Interest expense	(988)	-1.2%	(268)	-0.3%
Loss on derivative instruments	(13)	0.0%	(350)	(0.4%)
Other income (expense), net	2,068	2.5%	29	0.0%
Income (loss) before income taxes	(6,352)	-7.7%	777	0.8%
Provision (benefit) for income taxes	5,733	6.9%	1,131	1.2%
Net loss	\$ (12,085)	-14.6%	\$ (354)	(0.4%)

### Comparison of the Years Ended December 31, 2019 to December 31, 2018.

*Revenue.* Revenue for the year ended December 31, 2019, totaled \$83.0 million, which was 10.1% less than the \$92.2 million of revenue for the year ended December 31, 2018. The year over year decrease in revenue was attributable to the Nuclear Industry Training and Consulting segment:

(in thousands)

	Year ended December 31,	
	2019	2018
Revenue:		
Performance Improvement Solutions	\$ 45,776	\$ 42,954
Nuclear Industry Training and Consulting	37,199	49,295
Total revenue	\$ 82,975	\$ 92,249

Performance Improvement Solutions revenue increased 6.6% from \$43.0 million to \$45.8 million for the years ended December 31, 2018 and 2019, respectively. The increase in revenue for the year ended December 31, 2019 compared to the prior year was driven primarily by the acquisition of DP Engineering, which contributed \$8.2 million of revenue to the segment. This increase was offset by a decline of \$6.1 million in revenue from three major nuclear simulation projects. We recorded total Performance Improvement Solutions orders of \$27.4 million and \$42.6 million for the years ended December 31, 2019 and 2018, respectively. The decline in new orders is due to a combination of factors including expected new orders being delayed until the following year, the cyclical nature of our industry and business, and the re-establishment of our business development strategy in the first half of the year

For the year ended December 31, 2019, Nuclear Industry Training and Consulting revenue totaled \$37.2 million compared to revenue of \$49.3 million during the year ended December 31, 2018. The \$(12.1) million decrease was largely due to lower customer demand for staffing due to three major staff augmentation projects in 2018 coming to a close in the beginning of 2019 resulting in lower utilization during the year ended December 31, 2019. Nuclear Industry Training and Consulting orders totaled \$31.7 million and \$45.4 million for the years ended December 31, 2019 and 2018, respectively. The decline in new orders is due to a combination of factors including customer budget cuts and the cyclical nature of our industry and business.

At December 31, 2019, the Company's backlog was \$52.7 million: \$37.2 million for the Performance Improvement Solutions segment, \$1.7 million of which was attributable to DP Engineering and \$15.5 million for the Nuclear Industry Training and Consulting segment. At December 31, 2018, the Company's backlog was \$70.6 million: \$49.4 million for the Performance Improvement Solutions segment and \$21.2 million for the Nuclear Industry Training and Consulting segment. Nuclear Industry Training and Consulting segment's backlog decreased by \$5.7 million compared to December 31, 2018. The decrease in backlog is primarily due to 2018 backlog that was converted to revenues during 2019 and has only been partially replaced by new orders. Excluding DP Engineering, Performance Improvement Solutions segment's backlog decreased by \$13.9 million, primarily due to 2018 backlog that was converted to revenues during 2019 and has only been partially replaced by new orders.

*Gross profit.* Gross profit was \$20.3 million, or 24.5%, for the year ended December 31, 2019 compared to \$23.1 million, or 25.1%, for the year ended December 31, 2018.

(\$ in thousands)

	Years ended December 31,			
	2019	%	2018	%
Gross profit:				
Performance Improvement Solutions	\$ 15,231	33.3%	\$ 16,457	38.3%
Nuclear Industry Training and Consulting	5,067	13.6%	6,673	13.5%
Consolidated gross profit	\$ 20,298	24.5%	\$ 23,130	25.1%

As a percentage of revenue, the Performance Improvement Solutions segment's gross profit decreased from \$16.5 million, or 38.3% for the year ended December 31, 2018 to \$15.2 million, or 33.3%, for the year ended December 31, 2019. The decrease in gross profit percentage for Performance Improvement Solutions during 2019 was primarily driven by DP Engineering, which decreased Performance Improvement Solutions margin by 3.9%. The lower margin at DP Engineering in 2019 was driven by the adverse event at a significant customer.

For the years ended December 31, 2019 and 2018, the Nuclear Industry Training and Consulting segment had gross margin of 13.6% and 13.5%, respectively. The minor fluctuations in gross profit percentage for Nuclear Industry Training and Consulting for the periods presented were due to normal changes in the mix of projects with different margins.

*Selling, general and administrative expenses.* Selling, general and administrative (SG&A) expenses totaled \$16.2 million and \$17.5 million for the years ended December 31, 2019 and 2018, respectively. Fluctuations in the components of SG&A spending were as follows:

(\$ in thousands)

	Years ended December 31,			
	2019	%	2018	%
Selling, general and administrative expenses:				
Corporate charges	\$ 12,217	75.6%	\$ 12,826	73.4%
Business development	3,779	23.4%	3,478	19.9%
Facility operation & maintenance (O&M)	1,334	8.3%	866	5.0%
Contingent consideration	(1,200)	(7.4)%	-	0.0%
Bad debt expense	31	0.2%	294	1.7%
Other	8	0.0%	5	0.0%
Total	\$ 16,169	100.0%	\$ 17,469	100.0%

Corporate charges decreased \$(0.6) million in 2019 compared to 2018. The decrease was primarily due to a \$2.1 million reduction in incentive compensation, and \$0.1 million reduction in severance expense which was offset by the acquisition of DP Engineering and True North Consulting, which increased Corporate charges by \$1.3 million.

Business development charges increased \$0.3 million in 2019 compared to 2018. The minor fluctuations for the periods presented were due to the re-establishment of our business development strategy in the first half of 2019.

Facility O&M expenses increased \$0.5 million for the year ended December 31, 2019 compared to the year ended December 31, 2018. The increase in 2019 was mainly due to the acquisition of DP Engineering in February 2019, which resulted in the lease of additional office space in Fort Worth, Texas, Baton Rouge, Louisiana, and Russellville, Arkansas. At the end of 2019, only a portion of the Fort Worth, Texas office space remained.

As a result of the triggering event occurring at DP Engineering, the Company determined the fair value of the contingent consideration recorded in connection with the acquisition of DP Engineering in February 2019 was zero and recorded the reduction as an offset to selling, general and administrative expenses.

*Bad debt expense.* We recorded bad debt expense of \$31,000 and \$0.3 million for the years ended December 31, 2019 and December 31, 2018, respectively. GSE reserved the bad debt allowance based on historical trends of past due accounts, write-offs, and specific identification and review of customer accounts.

*Research and development.* Research and development costs consist primarily of software engineering personnel and other related costs. Research and development costs, net of capitalized software, totaled \$0.7 million and \$0.9 million for the years ended December 31, 2019 and 2018, respectively.

*Restructuring charges.* Restructuring charges totaled \$2.5 million and \$1.3 million for the years ended December 31, 2019 and 2018, respectively. On December 27, 2017, the Board of GSE approved an international restructuring plan to streamline and optimize the Company's global operations. Under the restructuring plan, we expect a total international restructuring charge of \$2.2 million, excluding any tax impacts and cumulative translation adjustments. We recorded a severance expense of \$0.4 million, lease termination fee of \$0.7 million and other costs of \$0.2 million for the year December 31, 2018. In the twelve months ending December 31, 2019, we recorded \$0.1 million relating to international restructuring. We expect to record the remaining restructuring charges in our 2020 Statement of Operations, along with the impact of amounts previously recorded as cumulative translation adjustments in accumulated comprehensive income and certain other tax impacts. The increase in our 2019 restructuring plan charges resulted, in part from the work suspension of DP Engineering's largest customer. We recorded \$1.6 million in lease abandonment and termination fees, and \$0.7 million related to employee termination benefits.

*Loss on impairment.* Loss on impairment totaled \$5.6 million for the year ended December 31, 2019. There was zero loss on impairment for the year ended December 31, 2018. The increase is due to the \$5.6 million impairment charge on the goodwill related to the acquisition of DP Engineering. See Note 7 for additional information regarding the impairment.

*Depreciation.* Depreciation expense totaled \$0.4 million and \$0.5 million for the years ended December 31, 2019 and 2018, respectively. The decrease was primarily due to the continued depreciation of our assets above the capital expenditures replacing them.

*Amortization of definite-lived intangible assets.* Amortization expense related to definite-lived intangible assets totaled \$2.4 million and \$1.6 million for the years ended December 31, 2019 and 2018, respectively. The increase in amortization expense was primarily due to the amortization expense of \$0.7 million related to assets held by DP Engineering.

*Interest expense.* Interest (expense) income net, totaled \$(1.0) million for the year ended December 31, 2019. Interest (expense) income totaled \$(0.3) million for year ended December 31, 2018. Through the Company's term loan facility with Citizen's Bank, a five-year term loan of \$14.3 million in February 2019 was issued to finance the acquisition of DP Engineering, and has recorded interest expense of \$1.0 million related to the DP Engineering and True North term loans for the year ended December 31, 2019.

*Loss on derivative instruments.* The Company periodically enters into forward foreign exchange contracts to manage market risks associated with the fluctuations in foreign currency exchange rates on foreign-denominated trade receivables. The Company had not designated the contracts as hedges and recognized a gain on the change in the estimated fair value of the contracts of \$6,000 for the year ended December 31, 2019, and a loss of \$(0.2) million for the year ended December 31, 2018.

The foreign currency denominated trade receivables, unbilled receivables, billings in excess of revenue earned and subcontractor accruals that are related to the outstanding foreign exchange contracts are remeasured at the end of each period into the functional currency using the current exchange rate at the end of the period. The gain or loss resulting from such remeasurement is also included in gain (loss) on derivative instruments net in the consolidated statements of operations. For the years ended December 31, 2019 and 2018, the Company incurred gain of \$38,000 and loss of \$(0.1) million, respectively, from the remeasurement of such assets and liabilities.

*Other income (expense), net.* The Company recognized \$2.1 million and \$29,000 of other income, net for the years ended December 31, 2019 and 2018, respectively. The Company entered into a settlement agreement pursuant to which the sellers of DP Engineering agreed to release the full escrow account balance to the Company and pay additional funds, in the total amount of \$2.0 million. The Company received these funds on December 31, 2019.



*Provision for Income Taxes.* The Company files tax returns in the United States federal jurisdiction and in several state and foreign jurisdictions. Because of the net operating loss carryforwards, the Company is subject to U.S. federal and state income tax examinations for tax years 2000, and forward, and is subject to foreign tax examinations by tax authorities for the years 2014 and forward. Open tax years related to state and foreign jurisdictions remain subject to examination but are not considered material to our financial position, results of operations or cash flows.

The Company's tax expense (benefit) in 2019 was \$5.7 million, representing an annual effective tax rate of (90.3)%, and consisted of \$0.4 million of current tax provision and \$5.3 million of deferred taxes. The Company's tax expense in 2018 was \$1.1 million, representing an annual effective rate of 145.6% and consisted of \$0.5 million of current tax provision and \$0.6 million of deferred taxes.

The significant change of \$4.7 million in deferred tax expense (benefits) was primarily driven the recognition of \$6.8 million of valuation allowance against the deferred tax assets related to the U.S. and foreign entities which was partially offset by the generation of a deferred tax asset related to the goodwill impairment in the U.S. entities. See Note 15 for additional information.

The difference between the effective rate and statutory rate primarily resulted from the recognition of a valuation allowance, permanent differences, accruals related to uncertain tax positions for certain foreign tax contingencies and revenue recognition, and return to provision true-ups. See Note 15 for additional information.

*Coronavirus Aid, Relief and Economic Security Act ("CARES")*

On March 27, 2020, the United States government enacted the CARES Act. The CARES Act is an emergency economic stimulus package that includes spending and tax breaks to strengthen the United States economy and fund a nationwide effort to curtail the effect of COVID-19. While the CARES Act provides sweeping tax changes in response to the COVID-19 pandemic, some of the more significant provisions which are expected to impact the Company's financial statements include removal of certain limitations on utilization of net operating losses and increasing the ability to deduct interest expense, as well as amending certain provisions of the previously enacted Tax Cuts and Jobs Act. Due to the recent enactment of the CARES Act, the Company is unable to fully quantify the impact, if any, that the CARES Act will have on its financial position, results of operations or cash flows.

## Critical Accounting Policies and Estimates.

In preparing the Company's consolidated financial statements, management makes several estimates and assumptions that affect the Company's reported amounts of assets, liabilities, revenues and expenses. Those accounting estimates that have the most significant impact on the Company's operating results and place the most significant demands on management's judgment are discussed below. For all of these policies, management cautions that future events rarely develop exactly as forecast, and the best estimates may require adjustment. Certain information and footnote disclosures normally included in financial statements prepared in accordance with U.S. generally accepted accounting principles ("U.S. GAAP") have been condensed or omitted.

*Revenue Recognition.* The Company derives its revenue through three broad revenue streams: 1) System Design and Build (SDB), 2) Software, and 3) Training and Consulting services. We recognize revenue from SDB and software contracts mainly through the Performance Improvement Solutions segment and the training and consulting service contracts through both the Performance Improvement Solutions segment and Nuclear Industry Training and Consulting segment.

The SDB contracts are typically fixed-price and consist of initial design, engineering, assembly and installation of training simulators which include hardware, software, labor, and post contract support (PCS) on the software. We generally have two main performance obligations for an SDB contract: the training simulator build and PCS. The training simulator build performance obligation generally includes hardware, software, and labor. The transaction price under the SDB contracts is allocated to each performance obligation based on its standalone selling price. We recognize the training simulator build revenue over the construction and installation period using the cost-to-cost input method as our performance creates or enhances assets with no alternative use to the Company, and we have an enforceable right to payment for performance completed to date. Cost-to-cost input method best measures the progress toward complete satisfaction of the performance obligation. PCS revenue is recognized ratably over the service period, as PCS is deemed as a stand-ready obligation.

In applying the cost-to-cost input method, we use the actual costs incurred to date relative to the total estimated costs to measure the work progress toward the completion of the performance obligation and recognize revenue accordingly. Estimated contract costs are reviewed and revised periodically as the work progresses, and the cumulative effect of any change in estimates is recognized in the period in which the change is identified. Estimated losses are recognized in the period such losses are identified. Uncertainties inherent in the performance of contracts include labor availability and productivity, material costs, change order scope and pricing, software modification and customer acceptance issues. The reliability of these cost estimates is critical to the Company's revenue recognition as a significant change in the estimates can cause the Company's revenue and related margins to change significantly from the amounts estimated in the early stages of the project.

The SDB contracts generally provide a one-year base warranty on the systems. The base warranty will not be accounted for as a separate performance obligation under the contract because it does not provide the customer with a service in addition to the assurance that the completed project complies with agreed-upon specifications. Warranties extended beyond our typical one-year period will be evaluated on a case by case basis to determine if it provides more than just assurance that the product operates as intended, which requires carve-out as a separate performance obligation.

Revenue from the sale of perpetual standalone and term software licenses, which do not require significant modification or customization, is recognized upon its delivery to the customer. Revenue from the sale of cloud based subscription applications is recognized ratably over the subscription period following delivery to the customer. Delivery is considered to have occurred when the customer receives access to the software or the cloud based application.

A software license sale contract with multiple performance obligations typically includes the following elements: license, installation and training services and PCS. The total transaction price of a software license sale contract is typically fixed, and is allocated to the identified performance obligations based on their relative standalone selling prices. Revenue is recognized as the performance obligations are satisfied. Specifically, license revenue is recognized when the software license is delivered to the customer; installation and training revenue is recognized when the installation and training is completed without regard to a detailed evaluation of the point in time criteria due to the short-term nature of the installation and training services (one to two days on average); and PCS revenue is recognized ratably over the service period, as PCS is deemed as a stand-ready obligation.

The contracts within the training and consulting services revenue stream are either time and materials (T&M) based or fixed-price based. Under a typical T&M contract, the Company is compensated based on the number of hours of approved time provided by workers and the bill rates which are fixed per type of work, as well as approved expenses incurred. The customers are billed on a regular basis, such as weekly, biweekly or monthly. In accordance with Accounting Standards Codification (ASC) 606-10-55-18, we elected to apply the "right to invoice" practical expedient, under which we recognize revenue in the amount to which we have the right to invoice. The invoice amount represents the number of hours of approved time worked by each worker multiplied by the bill rate for the type of work, as well as approved expenses incurred. Under a typical fixed-price contract, we recognize the revenue on a Percentage of Completion basis as it relates to GSE Construction Contracts with revenue recognized based on project delivery over time. Revenue from the sale of short-term contracts with a delivery period of one month or less is recognized in the month completed.

For contracts with multiple performance obligations, we allocate the contract price to each performance obligation based on its relative standalone selling price. We generally determine standalone selling prices based on the prices charged to customers.

*Impairment of Intangible Assets, including Goodwill.* We review goodwill for impairment annually as of December 31 and whenever events or changes in circumstances indicate the carrying value of an asset may not be recoverable. We test goodwill at the reporting unit level. A reporting unit is an operating segment, or one level below an operating segment, as defined by U.S. GAAP.

Accounting Standards Update (ASU) 2011-08, *Intangibles — Goodwill and Other (Topic 350): Testing Goodwill for Impairment* (ASU 2011-08) permits an entity to first assess qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount as a basis for determining whether it is necessary to perform the two-step goodwill impairment test. An entity is not required to perform step one of the goodwill impairment test for a reporting unit if it is more likely than not that its fair value is greater than its carrying amount (Step 0). If the Step 0 test indicates the fair value of a reporting unit is less than its carrying value, then additional impairment testing is required in accordance with the provisions of ASC 350, *Intangibles — Goodwill and Other*.

If it is determined that it is more likely than not that the fair value of a reporting unit is less than its carrying amount, a two-step impairment test is required. In the first step, we compare the fair value of each reporting unit to its carrying value. If the fair value of the reporting unit exceeds the carrying value of the net assets

assigned to that unit, goodwill is not impaired and we are not required to perform further testing. If the carrying value of the net assets assigned to the reporting unit exceeds the fair value of the reporting unit, then we must perform the second step of the impairment test in order to determine the implied fair value of the reporting unit's goodwill. The implied fair value of goodwill is determined by allocating the fair value of the reporting unit's assets and liabilities in a manner similar to a purchase price allocation, with any residual fair value allocated to goodwill. If the carrying value of a reporting unit's goodwill exceeds its implied fair value, then we record an impairment loss equal to the difference.

At December 31, 2019, we performed a quantitative step 1 analysis and have concluded that the estimated fair values of each of our reporting units as of December 31, 2019, exceeded their respective carrying values. At December 31, 2018, we performed a qualitative step 0 goodwill impairment test and concluded that the fair values of each of our reporting units exceeded their respective carrying values.

Determining the fair value of a reporting unit is judgmental in nature and involves the use of significant estimates and assumptions. These estimates and assumptions include revenue growth rates and operating margins used to calculate projected future cash flows, risk-adjusted discount rates, future economic and market conditions and determination of appropriate market comparables. We base our fair value estimates on assumptions we believe to be reasonable but that are unpredictable and inherently uncertain. Actual future results may differ from those estimates. In addition, we make certain judgments and assumptions in allocating shared assets and liabilities to determine the carrying values for each of our reporting units. The timing and frequency of our goodwill impairment tests are based on an ongoing assessment of events and circumstances that would indicate a possible impairment. We will continue to monitor our goodwill and intangible assets for impairment and conduct formal tests when impairment indicators are present.

*Capitalization of Computer Software Development Costs.* In accordance with U.S. GAAP, the Company capitalizes computer software development costs incurred after technological feasibility has been established, but prior to the release of the software product for sale to customers. Once the product is available to be sold, the Company amortizes the costs, on a straight line method, over the estimated useful life of the product, which is typically three years. As of December 31, 2019 and 2018, the Company has net capitalized software development costs of \$0.6 million. On an annual basis, and more frequently as conditions indicate, the Company assesses the recovery of the unamortized software development costs by estimating the net undiscounted cash flows expected to be generated by the sale of the product. If the undiscounted cash flows are not sufficient to recover the unamortized software costs, the Company will write-down the investment to its estimated fair value based on future discounted cash flows. The excess of any unamortized computer software costs over the related net realizable value is written down and charged to operations. Significant changes in the sales projections could result in an impairment with respect to the capitalized software that is reported on the Company's consolidated balance sheets.

*Valuation of Contingent Consideration for Business Acquisitions.* Acquisitions may include contingent consideration payments based on future financial measures of an acquired company. Contingent consideration is required to be recognized at fair value as of the acquisition date. We estimate the fair value of these liabilities based on financial projections of the acquired companies and estimated probabilities of achievement. We believe our estimates and assumptions are reasonable; however, there is significant judgment involved. At each reporting date, the contingent consideration obligation will be revalued to estimated fair value and changes in fair value subsequent to the acquisition will be reflected in income or expense in the consolidated statements of operations, and could cause a material impact to our operating results. Changes in the fair value of contingent consideration obligations may result from changes in discount periods and rates, changes in the timing and amount of revenue and/or earnings estimates and changes in probability assumptions with respect to the likelihood of achieving the various earn-out criteria.

*Deferred Income Tax Valuation Allowance.* Deferred income taxes arise from temporary differences between the tax basis of assets and liabilities and their reported amounts in the consolidated financial statements. Management makes a regular assessment of the realizability of the Company's deferred tax assets. In making this assessment, management considers whether it is more likely than not that some or all of the deferred tax assets will not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible. Management considers the scheduled reversal of deferred tax liabilities and projected future taxable income of the Company in making this assessment. A valuation allowance is recorded to reduce the total deferred income tax asset to its realizable value. At December 31, 2019, the Company's largest deferred tax asset was \$5.3 million of net operating losses, excluding the impact of uncertain tax positions. It primarily relates to a U.S. net operating loss carryforward of \$4.7 million; \$4.6 million of the net operating loss carryforward expires in various amounts between 2023 and 2037; \$0.1 million of the net operating loss carryforward is an indefinite lived deferred tax asset. The Company does not believe that it is more likely than not that it will be able to realize its deferred tax assets for its U.S. and foreign deferred tax assets at December 31, 2019, therefore, we have established a \$7.6 million valuation allowance for our net deferred tax assets.

## **Liquidity and Capital Resources.**

As of December 31, 2019, GSE had cash and cash equivalents of \$11.7 million compared to \$12.1 million at December 31, 2018.

*Cash provided by (used in) operating activities.* For the years ended December 31, 2019 and 2018, net cash (used in) provided by operating activities totaled \$4.0 million and \$(3.5) million, respectively. The year over year increase in cash provided by operating activities was largely driven by:

- A \$12.3 million increase in net inflows from changes in net working capital primarily due to significantly increased billing in 2019 and a lower accounts receivable balance as of December 31, 2019 compared to prior year.
- A \$0.3 million increase in operating expenses (excluding non-cash operating expenses) mainly driven by higher administrative cost due to recent acquisitions.
- The increase was partially offset by a \$2.8 million decrease in gross profit, primarily driven by decreased gross margin from DP Engineering and decreased revenues from the NITC business segment.

*Net cash used in investing activities.* For the year ended December 31, 2019, net cash used in investing activities was \$14.1 million compared to net cash of \$10.6 million used in investing activities in the prior year. The increase in cash outflow in 2019 was primarily due to the acquisition of DP Engineering, which resulted in a cash outflow of \$13.5 million, compared to the net cash outflow of \$9.6 million was primarily due to acquisition of True North in fiscal year 2018.

*Net cash provided by (used in) financing activities.* For the years ended December 31, 2019 and 2018, net cash provided by (used in) financing activities totaled \$9.7 million and \$6.5 million, respectively. The increase in the cash provided from financing activities in 2019 is largely driven by the proceeds from issuance of a term loan of \$14.3 million, net of discount and issuance costs, a decrease of \$0.1 million in the Company's withholding RSUs in order to pay employees' payroll withholding taxes on vested RSUs, partially offset by a \$4.3 million due to repayment of long-term debt.

## *Debt*

### *Citizen's Bank*

The Company entered into a three-year, \$5.0 million revolving line of credit facility (RLOC) with Citizen's Bank on December 29, 2016, to fund general working capital needs, including acquisitions. The Company is not required to maintain a restricted cash collateral account at Citizen's Bank for outstanding letters of credit and working capital advances. The credit facility agreement is subject to standard financial covenants and reporting requirements.

On May 11, 2018, the Company entered into an Amended and Restated Credit and Security Agreement (the Credit Agreement) with the Bank, amending and restating the Company's existing Credit and Security Agreement with the Bank, which included a \$5.0 million asset-based revolving credit facility between the Company and the Bank, to now include (a) a \$5.0 million revolving credit facility not subject to a borrowing base, including a letter of credit sub-facility, and (b) a \$25.0 million delayed draw term loan facility available to be drawn upon for up to 18 months and to finance certain permitted acquisitions by the Company. The credit facilities mature in five years and bear interest at LIBOR plus a margin that varies depending on the overall leverage ratio of the Company and its subsidiaries. Revolving loans are interest-only with principal due at maturity, while term loans require monthly payments of principal and interest based on an amortization schedule. The Company drew down \$10.3 million on the delayed draw term loan facility for the acquisition of True North, of which \$0.5 million was repaid to the bank on the same day.

Attendant to the Company's acquisition of DP Engineering, the Company and the Bank entered into a Third Amendment and Reaffirmation Agreement and a Fourth Amendment and Reaffirmation Agreement on February 15, 2019 and March 20, 2019, respectively. On June 28, 2019, the Company and the Bank entered into a Fifth Amendment and Reaffirmation Agreement, which changed the fixed charge coverage ratio from 1.25, to four different ratios ranging from 1.05 to 1.25 among different time periods and changed the leverage ratio to: (i) 2.75 to 1.00 for the periods ending on June 30, 2019, September 30, 2019, December 31, 2019 and March 31, 2020; (ii) 2.50 to 1.00 for the periods ending June 30, 2020 and September 30, 2020; (iii) 2.25 to 1.00 for the periods ending December 31st, March 31st, June 30th and September 30th thereafter. The Company drew down \$14.3 million on the delayed draw term loan facility to finance the acquisition of DP Engineering.

On January 8, 2020, the Company entered into a Sixth Amendment and Reaffirmation Agreement. The amendments contained therein relaxed the fixed charge coverage ratio and leverage ratio, as well as delayed testing of both financial covenants, but added a covenant requiring that the Company maintain a consolidated, Adjusted EBITDA target of \$4.25 million to be tested as of December 31, 2019, March 31, 2020, and June 30, 2020. Further, the Company agreed to maintain a minimum USA Liquidity of at least \$5.0 million in the aggregate, to be tested bi-weekly as of the fifteenth (15th) and the last day of each month beginning on December 31, 2019 and thereafter until June 30, 2020. In addition to the revised covenants, GSE was required to pay a \$20,000 bank fee and additional principal payments as follows: January 6, 2020 of \$3.0 million, March 31, 2020 of \$1.0 million, and June 30, 2020 of \$1.0 million.

On April 17, 2020, the Company entered into a Seventh Amendment and Reaffirmation Agreement. The Company shall maintain a minimum fixed charge coverage ratio of 1.25 to 1.00, to be tested quarterly as of the last day of each quarter beginning with the quarter ending June 30, 2021, on rolling four-quarter basis. The Company shall not exceed a maximum leverage ratio, to be tested quarterly as of the last day of each quarter beginning with the quarter ending September 30, 2020, on a rolling four-quarter basis as follows: (i) 3.00 to 1.00 for the period ending on September 30, 2020, (ii) 2.50 to 1.00 for the period ending on December 31, 2020, and (iii) 2.25 to 1.00 for the period ending on March 31, 2021 and for the periods ending on each December 31, March 31, June 30 and September 30 thereafter. In addition to the revised covenants, GSE was required to pay a \$50,000 bank fee and additional principal payments as follows: April 17, 2020 \$0.75 million, and June 30, 2020 \$0.5 million. The Company has the option to refinance the term loan facility if certain requirements are met, including meeting certain covenant thresholds.

Non-compliance with one or more of the covenants and restrictions after any applicable grace period could result in the obligations under the Credit Agreement becoming immediately due and payable and termination of the credit facilities. In addition to non-compliance with covenants and restrictions, the Credit Agreement also contains other customary events of default. If an event of default under the Credit Agreement occurs and is continuing, then the Bank may declare the obligations under the Credit Agreement to be immediately due and payable and may terminate the credit facilities.

### *RLOC*

We intend to continue using the RLOC for short-term working capital needs and the issuance of letters of credit in connection with business operations. Letter of credit issuance fees range between 1.25% and 2% depending on the Company's overall leverage ratio, and the Company pays an unused RLOC fee quarterly based on the average daily unused balance.

At December 31, 2019, there were no outstanding borrowings under the RLOC and four letters of credit totaling \$1.2 million were outstanding. The amount available at December 31, 2019, after consideration of the borrowing base, letters of credit and working capital advances was approximately \$3.8 million. At December 31, 2018, there were no outstanding borrowings on the RLOC and 5 letters of credit totaling \$2.3 million. See Note 13 for additional information.

### *Going Concern Consideration*

We are in compliance with the amended financial covenants contained in our debt agreement with Citizen's Bank at December 31, 2019 and in April 2020 entered into an amendment, which removes certain covenants through March 31, 2021.

We are experiencing, as a result of the COVID-19 pandemic a negative impact on our financial position and results of operations. We have, and are likely to continue to experience loss or delayed orders, disruption of business as a result of worker illness or mandated shutdowns, and this could impact our ability to maintain compliance with loan covenants, our ability to refinance existing indebtedness, and access to new capital. As part of our certification for the PPP we indicated without these funds, the risk of employee terminations, layoffs and other drastic cost reductions exists. While the PPP funds will provide sufficient

liquidity for the Company these funds will not prevent us from potentially not meeting the minimum EBITDA covenants and potentially not meeting the leverage ratio covenants in the future. Including the proceeds from our PPP loan, we believe we have sufficient cash to meet our operating requirement needs for at least the next twelve months, however since some of our loan covenants are related to operating performance, and our operating performance is being significantly impacted by COVID-19 we believe it is probable that we will not meet our debt covenants requirement during all of 2020. If our debt becomes due and payable as a result of a covenant violation, it calls into question our ability to continue as a going concern.

### *Liquidity*

At December 31, 2019, the Company's cash and cash equivalents totaled \$11.7 million.

As discussed above, the Company has a \$5.0 million RLOC with Citizen's Bank to fund general working capital needs, including acquisitions. At December 31, 2019, the amount available under this RLOC, after consideration of the borrowing base, letters of credit and working capital advances was approximately \$3.8 million. This credit facility provides the Company with additional flexibility to pursue its strategic initiatives and continue to expand the business.

On January 6, 2020, the Company entered into an Sixth Amendment and Reaffirmation Agreement. In addition to the revised covenants, GSE was required to pay a \$20,000 bank fee and additional principal payments as follows: January 6, 2020 of \$3.0 million, March 31, 2020 of \$1.0 million, and June 30, 2020 of \$1.0 million.

On April 10, 2020, the Company entered into the Seventh Amendment and Reaffirmation Agreement. In addition to the revised covenants, GSE was required to pay a \$50,000 bank fee and additional principal payments as follows: April 10, 2020 of \$0.75 million, and June 30, 2020 of \$0.5 million.

The Company entered 2020 with \$52.7 million of backlog; \$44.3 million of which is expected to convert to revenue in 2020. The Company anticipates that its normal operations will generate sufficient liquidity and working capital to fund its consolidated operations during the next twelve months without additional financing. However, any additional deterioration in the business would result in non-compliance with bank covenants.

The Company has applied for, and received, funds under the PPP after the period end in the amount of \$10.0 million serviced by Citizen's Bank. The application for these funds requires the Company to, in good faith, certify that the current economic uncertainty made the loan request necessary to support the ongoing operations of the Company. This certification further requires the Company to take into account our current business activity and our ability to access other sources of liquidity sufficient to support ongoing operations in a manner that is not significantly detrimental to the business. The receipt of these funds, and the forgiveness of the loan attendant to these funds, is dependent on the Company having initially qualified for the loan and qualifying for the forgiveness of such loan based on our future adherence to the forgiveness criteria.

### **Foreign Exchange.**

A portion of the Company's international sales revenue has been and may be received in a currency other than the currency in which the expenses relating to such revenue are paid. Accordingly, the Company periodically enters into forward foreign exchange contracts to manage the market risks associated with the fluctuations in foreign currency exchange rates. As of December 31, 2019, the Company did not hold a position in forward foreign exchange contracts.

### **Off-balance Sheet Obligations.**

The Company has no off-balance sheet obligations as of December 31, 2019, except for its operating lease commitments and outstanding letters of credit and surety bonds.

### **Other Matters.**

Management believes inflation has not had a material impact on the Company's operations.

**EBITDA and Adjusted EBITDA Reconciliation** *(in thousands)*

References to “EBITDA” mean net (loss) income, before taking into account interest expense (income), provision for income taxes, depreciation and amortization. References to Adjusted EBITDA exclude the impact of loss on impairment, gain from the change in fair value of contingent consideration, restructuring charges, stock-based compensation expense, impact of the change in fair value of derivative instruments, acquisition-related expense, acquisition-related legal settlement and bad debt expense due to customer bankruptcy. EBITDA and Adjusted EBITDA are not measures of financial performance under generally accepted accounting principles (GAAP). Management believes EBITDA and Adjusted EBITDA, in addition to operating profit, net income and other GAAP measures, are useful to investors to evaluate the Company’s results because it excludes certain items that are not directly related to the Company’s core operating performance that may, or could, have a disproportionate positive or negative impact on our results for any particular period. Investors should recognize that EBITDA and Adjusted EBITDA might not be comparable to similarly-titled measures of other companies. This measure should be considered in addition to, and not as a substitute for or superior to, any measure of performance prepared in accordance with GAAP. A reconciliation of non-GAAP EBITDA and Adjusted EBITDA to the most directly comparable GAAP measure in accordance with SEC Regulation G follows:

	<b>Three Months Ended</b>		<b>Twelve Months Ended</b>	
	<b>December 31,</b>		<b>December 31,</b>	
	<b>2019</b>	<b>2018</b>	<b>2019</b>	<b>2018</b>
Net loss	\$ (6,603)	\$ 679	\$ (12,085)	\$ (354)
Interest expense (income), net	176	115	988	268
Provision (benefit) for income taxes	6,607	1,007	5,733	1,131
Depreciation and amortization	986	776	3,129	2,634
<b>EBITDA</b>	<b>1,166</b>	<b>2,577</b>	<b>(2,235)</b>	<b>3,679</b>
Loss on impairment	133	-	5,597	-
Change in fair value of contingent consideration	-	-	(1,200)	-
Restructuring charges	1,736	92	2,478	1,269
Stock-based compensation expense	270	(9)	1,420	1,526
Impact of the change in fair value of derivative instruments	(56)	44	13	350
Acquisition-related expense	-	49	744	540
Acquisition-related legal settlement	(2,025)	-	(2,025)	-
Bad debt expense due to customer bankruptcy	-	20	-	85
<b>Adjusted EBITDA</b>	<b>\$ 1,224</b>	<b>\$ 2,773</b>	<b>\$ 4,792</b>	<b>\$ 7,449</b>

**Adjusted Net Income and Adjusted EPS Reconciliation** (in thousands, except per share amounts)

References to Adjusted net income exclude the impact of gain from the change in fair value of contingent consideration, loss on impairment, restructuring charges, stock-based compensation expense, impact of the change in fair value of derivative instruments, acquisition-related expense, acquisition-related legal settlement, amortization of intangible assets related to acquisitions, bad debt expense due to customer bankruptcy, release of valuation allowance, and income tax expense impact of adjustments. Adjusted Net Income and adjusted earnings per share (adjusted EPS) are not measures of financial performance under generally accepted accounting principles (GAAP). Management believes adjusted net income and adjusted EPS, in addition to other GAAP measures, are useful to investors to evaluate the Company's results because they exclude certain items that are not directly related to the Company's core operating performance and non-cash items that may, or could, have a disproportionate positive or negative impact on our results for any particular period. These measures should be considered in addition to, and not as a substitute for or superior to, any measure of performance prepared in accordance with GAAP. A reconciliation of non-GAAP adjusted net income and adjusted EPS to GAAP net income, the most directly comparable GAAP financial measure, is as follows:

	<b>Three Months ended</b>		<b>Twelve Months ended</b>	
	<b>December 31,</b>		<b>December 31,</b>	
	<b>2019</b>	<b>2018</b>	<b>2019</b>	<b>2018</b>
	<i>(unaudited)</i>	<i>(unaudited)</i>	<i>audited</i>	<i>audited</i>
Net loss	\$ (6,603)	\$ 679	\$ (12,085)	\$ (354)
Change in fair value of contingent consideration	-	-	(1,200)	-
Loss on impairment	133	-	5,597	-
Restructuring charges	1,736	92	2,478	1,269
Stock-based compensation expense	270	(9)	1,420	1,526
Impact of the change in fair value of derivative instruments	(56)	44	13	350
Acquisition-related expense	-	49	744	540
Acquisition-related legal settlement	(2,025)	-	(2,025)	-
Amortization of intangible assets related to acquisitions	595	518	2,400	1,612
Bad debt expense due to customer bankruptcy	-	20	-	85
Release of valuation allowance	6,820	(339)	6,820	(339)
Income tax expense impact of adjustments	5,138	(627)	3,851	(8,251)
Adjusted net (loss) income	\$ 6,008	\$ 427	\$ 8,013	\$ (3,562)
Diluted earnings (loss) per common share	<u>\$ (0.32)</u>	<u>\$ 0.03</u>	<u>\$ (0.60)</u>	<u>\$ (0.02)</u>
Adjusted earnings (loss) per common share – Diluted	<u>\$ 0.29</u>	<u>\$ 0.02</u>	<u>\$ 0.39</u>	<u>\$ (0.18)</u>
Weighted average shares outstanding – Diluted	<u>20,560,399</u>	<u>20,100,489</u>	<u>20,376,255</u>	<u>19,704,999</u>

**ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK.**

Not required of a smaller reporting company.



**ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA.**

**INDEX TO CONSOLIDATED FINANCIAL STATEMENTS**

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## Report of Independent Registered Public Accounting Firm

Shareholders and Board of Directors  
GSE Systems, Inc.  
Sykesville, Maryland

### Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of GSE Systems, Inc. (the “Company”) as of December 31, 2019 and 2018, the related consolidated statements of operations and comprehensive loss, stockholders’ equity, and cash flows for each of the two years in the period ended December 31, 2019, and the related notes (collectively referred to as the “consolidated financial statements”). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2019, in conformity with accounting principles generally accepted in the United States of America.

### Going Concern Uncertainty

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 1 to the consolidated financial statements, the Company has suffered recurring losses from operations and has negative working capital as of December 31, 2019. In addition, the risk of future covenant defaults under the Company’s credit agreement raises substantial doubt about the Company’s ability to continue as a going concern. Management’s plans in regard to these matters are also described in Note 1. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

### Basis for Opinion

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

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

Our audits included performing procedures to assess the risks of material misstatement of the consolidated 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 consolidated 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 consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ BDO USA, LLP

We have served as the Company’s auditor since 2014.

McLean, Virginia

June 11, 2020

**PART I - FINANCIAL INFORMATION**

**Item 1. Financial Statements**

**GSE SYSTEMS, INC. AND SUBSIDIARIES**

**CONSOLIDATED BALANCE SHEETS**

*(in thousands, except share data)*

ASSETS	December 31,	
	2019	2018
<b>ASSETS</b>		
Cash and cash equivalents	\$ 11,691	\$ 12,123
Contract receivables, net	17,207	21,077
Prepaid expenses and other current assets	1,880	1,800
Total current assets	<u>30,778</u>	<u>35,000</u>
Equipment, software and leasehold improvements	5,523	5,293
Accumulated depreciation	(4,584)	(4,228)
Equipment, software and leasehold improvements, net	<u>939</u>	<u>1,065</u>
Software development costs, net	641	615
Goodwill	13,339	13,170
Intangible assets, net	10,479	6,080
Deferred tax assets	57	5,461
Operating lease - right of use assets, net	2,215	-
Other assets	61	49
Total assets	<u>\$ 58,509</u>	<u>\$ 61,440</u>
<b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>		
Current liabilities:		
Current portion of long-term debt, net of debt issuance costs and original issue discount	\$ 18,481	\$ 1,902
Accounts payable	1,097	1,307
Accrued expenses	1,871	2,646
Accrued compensation	1,876	3,649
Billings in excess of revenue earned	7,613	10,609
Accrued warranty	921	981
Income taxes payable	1,341	1,176
Other current liabilities	1,234	60
Total current liabilities	<u>34,434</u>	<u>22,330</u>
Long-term debt, less current portion, net of debt issuance costs and original issue discount	-	6,610
Operating lease liabilities	3,000	-
Other liabilities	956	1,371
Total liabilities	<u>38,390</u>	<u>30,311</u>
Commitments and contingencies		
Stockholders' equity:		
Preferred stock \$0.01 par value; 2,000,000 shares authorized; no shares issued and outstanding	-	-
Common stock \$0.01 par value; 60,000,000 shares authorized, 21,838,963 shares issued, 20,240,052 shares outstanding as of December 31, 2019; 60,000,000 shares authorized, 21,485,445 shares issued, 19,886,534 shares outstanding as of December 31, 2018	218	214
Additional paid-in capital	79,400	78,118
Accumulated deficit	(54,654)	(42,569)
Accumulated other comprehensive loss	(1,846)	(1,635)
Treasury stock at cost, 1,598,911 shares	(2,999)	(2,999)
Total stockholders' equity	<u>20,119</u>	<u>31,129</u>
Total liabilities and stockholders' equity	<u>\$ 58,509</u>	<u>\$ 61,440</u>

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

**GSE SYSTEMS, INC. AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF OPERATIONS**  
*(in thousands, except per share data)*

	<b>Years ended December 31,</b>	
	<b>2019</b>	<b>2018</b>
Revenue	\$ 82,975	\$ 92,249
Cost of revenue	62,677	69,119
Gross profit	<u>20,298</u>	<u>23,130</u>
Operating expenses		
Selling, general and administrative	16,169	17,469
Research and development	710	899
Restructuring charges	2,478	1,269
Loss on impairment	5,597	-
Depreciation	363	515
Amortization of definite-lived intangible assets	2,400	1,612
Total operating expenses	<u>27,717</u>	<u>21,764</u>
Operating (loss) income	(7,419)	1,366
Interest expense	(988)	(268)
Loss on derivative instruments	(13)	(350)
Other income (expense), net	2,068	29
Income (loss) before income taxes	(6,352)	777
Provision (benefit) for income taxes	5,733	1,131
Net loss	<u>\$ (12,085)</u>	<u>\$ (354)</u>
Basic loss per common share	<u>\$ (0.60)</u>	<u>\$ (0.02)</u>
Diluted loss per common share	<u>\$ (0.60)</u>	<u>\$ (0.02)</u>
Weighted average shares outstanding - Basic	<u>20,062,021</u>	<u>19,704,999</u>
Weighted average shares outstanding - Diluted	<u>20,062,021</u>	<u>19,704,999</u>

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

**GSE SYSTEMS, INC. AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS**  
*(in thousands)*

	<b>Years ended December 31,</b>	
	<b>2019</b>	<b>2018</b>
Net loss	\$ (12,085)	\$ (354)
Foreign currency translation adjustment	<u>(211)</u>	<u>(164)</u>
Comprehensive loss	<u>\$ (12,296)</u>	<u>\$ (518)</u>

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

**GSE SYSTEMS, INC, AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY**  
*(in thousands)*

	<u>Common Stock</u>		<u>Additional Paid-in Capital</u>	<u>Accumulated Deficit</u>	<u>Accumulated Other Comprehensive Loss</u>	<u>Treasury Stock</u>		<u>Total</u>
	<u>Shares</u>	<u>Amount</u>				<u>Shares</u>	<u>Amount</u>	
<b>Balance, January 1, 2018</b>	21,024	\$ 210	\$ 76,802	\$ (42,870)	\$ (1,471)	(1,599)	\$ (2,999)	\$ 29,672
Cumulative effect of adopting ASC 606	-	-	-	655	-	-	-	655
Stock-based compensation expense	-	-	1,668	-	-	-	-	1,668
Common stock issued for options exercised	220	2	134	-	-	-	-	136
Common stock issued for RSUs vested	241	2	(2)	-	-	-	-	-
Shares withheld to pay taxes	-	-	(484)	-	-	-	-	(484)
Foreign currency translation adjustment	-	-	-	-	(164)	-	-	(164)
Net loss	-	-	-	(354)	-	-	-	(354)
<b>Balance, December 31, 2018</b>	21,485	\$ 214	\$ 78,118	\$ (42,569)	\$ (1,635)	(1,599)	\$ (2,999)	\$ 31,129
Stock-based compensation expense	-	-	1,513	-	-	-	-	1,513
Common stock issued for options exercised	9	1	-	-	-	-	-	1
Common stock issued for RSUs vested	345	3	(3)	-	-	-	-	-
Shares withheld to pay taxes	-	-	(228)	-	-	-	-	(228)
Foreign currency translation adjustment	-	-	-	-	(211)	-	-	(211)
Net loss	-	-	-	(12,085)	-	-	-	(12,085)
<b>Balance, December 31, 2019</b>	21,839	\$ 218	\$ 79,400	\$ (54,654)	\$ (1,846)	(1,599)	\$ (2,999)	\$ 20,119

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

**GSE SYSTEMS, INC. AND SUBSIDIARIES**  
**CONSOLIDATED STATEMENTS OF CASH FLOWS**  
*(in thousands)*

	<b>Years ended December 31,</b>	
	<b>2019</b>	<b>2018</b>
<b>Cash flows from operating activities:</b>		
Net loss	\$ (12,085)	\$ (354)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:		
Write-off of long-lived assets to be disposed of	5,597	-
Depreciation	363	515
Amortization of definite-lived intangible assets	2,400	1,612
Amortization of capitalized software development costs	366	507
Change in fair value of contingent consideration	(1,200)	-
Stock-based compensation expense	1,420	1,526
Bad debt expense	31	294
Loss on derivative instruments, net	13	350
Deferred income taxes	5,349	644
(Gain) on sale of equipment, software, and leasehold improvements	(66)	-
Changes in assets and liabilities:		
Contract receivables, net	6,754	(5,656)
Prepaid expenses and other assets	532	856
Accounts payable, accrued compensation and accrued expenses	(3,458)	(838)
Billings in excess of revenue earned	(3,051)	(2,984)
Accrued warranty	(294)	(322)
Other liabilities	1,333	367
<b>Net cash provided by (used in) operating activities</b>	<b>4,004</b>	<b>(3,483)</b>
<b>Cash flows from investing activities:</b>		
Capital expenditures	(131)	(513)
Proceeds from sale of assets	13	-
Capitalized software development costs	(392)	(432)
Acquisition of True North Consulting, net of cash acquired	-	(9,609)
Acquisition of DP Engineering, net of cash acquired	(13,542)	-
<b>Net cash used in investing activities</b>	<b>(14,052)</b>	<b>(10,554)</b>
<b>Cash flows from financing activities:</b>		
Proceeds from issuance of long-term debt, net of debt issuance costs and original issue discount	14,263	10,154
Repayment of long-term debt	(4,294)	(1,642)
Proceeds from issuance of common stock on the exercise of stock options	1	136
Shares withheld to pay taxes on stock based compensation	(228)	(484)
Contingent consideration payments to former Hyperspring, LLC owners	-	(1,701)
<b>Net cash provided by financing activities</b>	<b>9,742</b>	<b>6,463</b>
Effect of exchange rate changes on cash	(126)	(374)
Net decrease in cash and cash equivalents	(432)	(7,948)
Cash, cash equivalents and restricted cash at beginning of year	12,123	20,071
Cash, cash equivalents and restricted cash at end of year	<u>\$ 11,691</u>	<u>\$ 12,123</u>

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

**GSE SYSTEMS, INC. AND SUBSIDIARIES**  
**NOTES TO CONSOLIDATED FINANCIAL STATEMENTS**  
**December 31, 2019 and 2018**

## **1. Summary of Significant Accounting Policies**

### *Principles of consolidation*

GSE Systems, Inc. is a leading provider of professional and technical engineering, staffing services, and simulation software to clients in the power and process industries. References in this report to “GSE,” the “Company,” “we” and “our” are to GSE Systems and its subsidiaries, collectively. All intercompany balances and transactions have been eliminated in consolidation.

### *Accounting estimates*

The preparation of the consolidated financial statements in conformity with generally accepted accounting principles in the United States of America (“U.S. GAAP”) requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of revenue and expenses during the reporting period. On an ongoing basis, the Company evaluates the estimates used, including, but not limited to those related to revenue recognition on long-term contracts, allowance for doubtful accounts, product warranties, valuation of goodwill and intangible assets acquired, impairment of long-lived assets, valuation of contingent consideration issued in business acquisitions, valuation of stock based compensation awards and the recoverability of deferred tax assets. Actual results could differ from these estimates.

### *Business combinations*

Business combinations are accounted for in accordance with the Financial Accounting Standards Board (“FASB”) Accounting Standards Codification (“ASC”), ASC 805, *Business Combinations*, using the acquisition method. Under the acquisition method, the identifiable assets acquired, liabilities assumed and any non-controlling interest in the acquiree are recognized at fair value on the acquisition date, which is the date on which control is transferred to the Company. Any excess purchase price is recorded as goodwill. Transaction costs associated with business combinations are expensed as incurred.

Revenues and the results of operations of the acquired business are included in the accompanying consolidated statements of operations commencing on the date of acquisition.

Acquisitions may include contingent consideration payments based on future financial measures of an acquired company. Under ASC 805, contingent consideration is required to be recognized at fair value as of the acquisition date. We estimate the fair value of these liabilities based on financial projections of the acquired companies and estimated probabilities of achievement. At each reporting date, the contingent consideration obligation is revalued to estimated fair value, and changes in fair value subsequent to the acquisition are reflected in income or expense in the consolidated statements of operations, and could cause a material impact to our operating results. Changes in the fair value of contingent consideration obligations may result from changes in discount periods and rates, changes in the timing and amount of revenue and/or earnings estimates, and changes in probability assumptions with respect to the likelihood of achieving the various earn-out criteria.

### *Revenue recognition*

The Company derives its revenue through three broad revenue streams: 1) System Design and Build (SDB), 2) Software, and 3) Training and Consulting services. We recognize revenue from SDB and software contracts mainly through the Performance Improvement Solutions segment and the training and consulting service contracts through both the Performance Improvement Solutions segment and Nuclear Industry Training and Consulting segment.

The SDB contracts are typically fixed-price and consist of initial design, engineering, assembly and installation of training simulators which include hardware, software, labor, and post contract support (PCS) on the software. We generally have two main performance obligations for an SDB contract: the training simulator build and PCS. The training simulator build performance obligation generally includes hardware, software, and labor. The transaction price under the SDB contracts is allocated to each performance obligation based on its standalone selling price. We recognize the training simulator build revenue over the construction and installation period using the cost-to-cost input method as our performance creates or enhances assets with no alternative use to the Company, and we have an enforceable right to payment for performance completed to date. Cost-to-cost input method best measures the progress toward complete satisfaction of the performance obligation. PCS revenue is recognized ratably over the service period, as PCS is deemed a stand-ready obligation.

In applying the cost-to-cost input method, we use the actual costs incurred to date relative to the total estimated costs to measure the work progress toward the completion of the performance obligation and recognize revenue accordingly. Estimated contract costs are reviewed and revised periodically as the work progresses, and the cumulative effect of any change in estimates is recognized in the period in which the change is identified. Estimated losses are recognized in the period such losses are identified. Uncertainties inherent in the performance of contracts include labor availability and productivity, material costs, change order scope and pricing, software modification and customer acceptance issues. The reliability of these cost estimates is critical to the Company’s revenue recognition as a significant change in the estimates can cause the Company’s revenue and related margins to change significantly from the amounts estimated in the early stages of the project.

The SDB contracts generally provide a one-year base warranty on the systems. The base warranty will not be accounted for as a separate performance obligation under the contract because it does not provide the customer with a service in addition to the assurance that the completed project complies with agreed-upon specifications. Warranties extended beyond our typical one-year period will be evaluated on a case by case basis to determine if it provides more than just assurance that the product operates as intended, which requires carve-out as a separate performance obligation.

Revenue from the sale of perpetual standalone and term software licenses, which do not require significant modification or customization, is recognized upon its delivery to the customer. Revenue from the sale of cloud based subscription applications is recognized ratably over the subscription period following delivery to the customer. Delivery is considered to have occurred when the customer receives access to the software or the cloud based application.



A software license sale contract with multiple deliverables typically includes the following elements: license, installation and training services, and PCS. The total transaction price of a software license sale contract is typically fixed, and is allocated to the identified performance obligations based on their relative standalone selling prices. Revenue is recognized as the performance obligations are satisfied. Specifically, license revenue is recognized when the software license is delivered to the customer; installation and training revenue is recognized when the installation and training is completed without regard to a detailed evaluation of the point in time criteria due to the short-term nature of the installation and training services (one to two days on average); and PCS revenue is recognized ratably over the service period, as PCS is deemed as a stand-ready obligation.

The contracts within the training and consulting services revenue stream are either time and materials (T&M) based or fixed-price based. Under a typical T&M contract, the Company is compensated based on the number of hours of approved time provided by temporary workers and the bill rates which are fixed by type of work, as well as approved expenses incurred. The customers are billed on a regular basis, such as weekly, biweekly or monthly. In accordance with ASC 606-10-55-18, *Revenue from contracts with customers*, we elected to apply the “right to invoice” practical expedient, under which we recognize revenue in the amount to which we have the right to invoice. The invoice amount represents the number of hours of approved time worked by each temporary worker multiplied by the bill rate for the type of work, as well as approved expenses incurred. Under a typical fixed-price contract, we recognize the revenue on a Percentage of Completion basis as it relates to GSE Construction Contracts with revenue recognized based on project delivery over time. Revenue from the sale of short-term contracts with a delivery period of one month or less is recognized in the month completed.

For contracts with multiple performance obligations, we allocate the contract price to each performance obligation based on its relative standalone selling price. We generally determine standalone selling prices based on the prices charged to customers.

#### *Cash and cash equivalents*

Cash and cash equivalents represent cash and highly liquid investments including money market accounts with maturities of three months or less at the date of purchase.

#### *Contract receivables, net*

Contract receivables include recoverable costs and accrued profit not billed which represents revenue recognized in excess of amounts billed. Billings in excess of costs and estimated earnings on uncompleted contracts in the accompanying consolidated balance sheets represent advanced billings to clients on contracts in advance of work performed. Generally, such amounts will be earned and recognized over the next twelve months.

Billed receivables are recorded at invoiced amounts. The allowance for doubtful accounts is based on historical trends of past due accounts, write-offs, specific identification and review of customer accounts.

#### *Impairment of long-lived assets*

Long-lived assets, such as equipment, purchased software, capitalized software development costs, and intangible assets subject to amortization, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to estimated undiscounted future cash flows expected to be generated by the asset. If the carrying amount of an asset exceeds its estimated undiscounted future cash flows, an impairment charge is recognized at the amount by which the carrying amount of the asset exceeds its fair value. Assets to be disposed of would be separately presented in the consolidated balance sheets and reported at the lower of the carrying amount or fair value less costs to sell, and would no longer be depreciated.

#### *Development expenditures*

Development expenditures incurred to meet customer specifications under contracts are charged to contract costs. Company sponsored development expenditures are either charged to operations as incurred and are included in research and development expenses or are capitalized as software development costs. The amounts incurred for Company sponsored development activities relating to the development of new products and services or the improvement of existing products and services, were approximately \$1.1 million and \$1.3 million for the years ended December 31, 2019 and 2018, respectively. Of this amount, the Company capitalized approximately \$0.4 million for the years ended December 31, 2019 and 2018.

#### *Equipment, software and leasehold improvements, net*

Equipment and purchased software are recorded at cost and depreciated using the straight-line method with estimated useful lives ranging from three years to ten years. Leasehold improvements are amortized over the life of the lease or the estimated useful life, whichever is shorter, using the straight-line method. Upon sale or retirement, the cost and related depreciation are eliminated from the respective accounts and any resulting gain or loss is included in operations. Maintenance and repairs are charged to expense as incurred.

#### *Software development costs*

Certain computer software development costs, including direct labor cost, are capitalized in the accompanying consolidated balance sheets. Capitalization of computer software development costs begins upon the establishment of technological feasibility. Capitalization ceases and amortization of capitalized costs begins when the software product is commercially available for general release to customers. Amortization of capitalized computer software development costs is included in cost of revenue and is determined using the straight-line method over the remaining estimated economic life of the product, typically three years. On an annual basis, or more frequently as conditions indicate, the Company assesses the recovery of the unamortized software development costs by estimating the net undiscounted cash flows expected to be generated by the sale of the product. If the undiscounted cash flows are not sufficient to recover the unamortized software costs the Company will write-down the carrying amount of such asset to its estimated fair value based on the future discounted cash flows. The excess of any unamortized computer software costs over the related fair value is written down and charged to operations.

#### *Goodwill and intangible assets*

The Company's intangible assets include amounts recognized in connection with business acquisitions, including customer relationships, trade names, non-compete agreements and alliance agreements. Intangible assets are initially valued at fair value using generally accepted valuation methods appropriate for the type of intangible asset. Amortization is recognized on a straight-line basis over the estimated useful life of the intangible assets, except for contract backlog and contractual customer relations, which are recognized in proportion to the related project revenue streams. Intangible assets with definite lives are reviewed for impairment if indicators of impairment arise. The Company does not have any intangible assets with indefinite useful lives.

Goodwill represents the excess of costs over fair value of assets of businesses acquired. The Company reviews goodwill for impairment annually as of December 31 and whenever events or changes in circumstances indicate the carrying value of goodwill may not be recoverable in accordance with Accounting Standards Update ("ASU") 2011-08, *Intangibles - Goodwill and Other (Topic 350): Testing Goodwill for Impairment*. The Company tests goodwill at the reporting unit level.

ASU 2011-08 permits an entity to first assess qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount as a basis for determining whether it is necessary to perform the two-step goodwill impairment test. Under ASU 2011-08, an entity is not required to perform step one of the goodwill impairment test for a reporting unit if it is more likely than not that its fair value is greater than its carrying amount.

On February 15, 2019, we acquired DP Engineering (as described in Note 4) and preliminarily recorded goodwill and identified intangible assets as part of the acquisition. On February 23, 2019, an unexpected event occurred at one of DP Engineering's significant customers and all pending work for that customer was suspended pending a root cause analysis on February 28, 2019. On May 10, 2019, the Company determined that a material impairment had occurred, requiring an assessment for impairment to be completed related to \$5.8 million of goodwill recorded in the acquisition. See Note 7.

For the annual goodwill impairment test as of December 31, 2019, the Company performed a quantitative step 1 goodwill impairment analysis and have concluded that the estimated fair values of each of the reporting units exceeded their respective carrying values. No further goodwill impairment was recorded during 2019. At December 31, 2018, we performed a qualitative step 0 goodwill impairment test and concluded that the fair values of each of our reporting units exceeded their respective carrying values.

#### *Foreign currency translation*

The United States Dollar ("USD") is the functional currency of GSE and our subsidiaries operating in the United States. Our subsidiaries' financial statements are maintained in their functional currencies. The functional currency of each of our foreign subsidiaries is the currency of the economic environment in which the subsidiary primarily does business. Our foreign subsidiaries' financial statements are translated into USD using the exchange rates applicable to the dates of the financial statements. Assets and liabilities are translated into USD using the period-end spot foreign exchange rates. Income and expenses are translated at the average exchange rate for the year. Equity accounts are translated at historical exchange rates. The effects of these translation adjustments are cumulative translation adjustments, which are reported as a component of accumulated other comprehensive income (loss) included in the consolidated statements of changes in stockholders' equity.

For any business transaction that is in a currency different from the entity's functional currency, we record a gain or loss based on the difference between the exchange rate at the transaction date and the exchange rate at the transaction settlement date (or rate at period end, if unsettled) to foreign currency realized gain (loss) account, net gain (loss) on derivative instruments in the consolidated statements of operations.

#### *Income taxes*

Income taxes are provided under the asset and liability method. Under this method, deferred income taxes are determined based on the differences between the consolidated financial statements and tax bases of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse. Valuation allowances are established, when necessary, to reduce deferred tax assets to the amounts expected to be realized. A provision is made for the Company's current liability for federal, state and foreign income taxes and the change in the Company's deferred income tax assets and liabilities.

We establish accruals for uncertain tax positions taken or expected to be taken in a tax return when it is not more likely than not (i.e., a likelihood of more than fifty percent) that the position would be sustained upon examination by tax authorities that have full knowledge of all relevant information. A recognized tax position is then measured at the largest amount of benefit that is greater than fifty percent likely of being realized upon ultimate settlement. Favorable or unfavorable adjustment of the accrual for any particular issue would be recognized as an increase or decrease to income tax expense in the period of a change in facts and circumstances. Interest and penalties related to income taxes are accounted for as income tax expense.

#### *Stock-based compensation*

Share-based compensation expense is based on the grant-date fair value estimated in accordance with the provisions of ASC 718, *Compensation-Stock Compensation*. Compensation expense related to share based awards is recognized on a pro rata straight-line basis based on the value of share awards that are scheduled to vest during the requisite service period.

#### *Significant customers and concentration of credit risk*

For the year ended December 31, 2019, we have a concentration of revenue from one individual customer, which accounted for 27.8% of our consolidated revenue. For the year ended December 31, 2018, we have a concentration of revenue from two customers, which accounted for 14.3% and 26.9% of our consolidated revenue, respectively. These customers are part of both Performance and NITC segments. No other individual customer accounted for more than 10% of our consolidated revenue in 2019 or 2018.

As of December 31, 2019, we have two customers that accounted for 10.3% and 12.6% of the Company's consolidated contract receivables. As of December 31, 2018, the Company had one customer that accounted for 16.8% of the Company's consolidated contract receivables. No other individual customer accounted for more than 10% of our consolidated revenue in 2019 or 2018.

#### *Fair values of financial instruments*

The carrying amounts of current assets and current liabilities reported in the consolidated balance sheets approximate fair value due to their short term duration.

*Derivative instruments*

The Company utilizes forward foreign currency exchange contracts to manage market risks associated with the fluctuations in foreign currency exchange rates. It is the Company's policy to use such derivative financial instruments to protect against market risk arising in the normal course of business in order to reduce the impact of these exposures. The Company minimizes credit exposure by limiting counterparties to nationally recognized financial institutions.

## Earnings per share

Basic loss per share is computed by dividing our net loss available to common shareholders by the weighted average number of shares of common stock outstanding during the period. Diluted loss per share is computed by dividing our net loss available to common shareholders by the diluted weighted average number of shares of common stock during the period. Since we experienced a net loss for all periods presented, basic and diluted net loss per share are the same. As such, diluted loss per share for the years ended December 31, 2019 and 2018 excludes the impact of potentially dilutive common shares since those shares would have an anti-dilutive effect on loss per share.

The number of common shares and common share equivalents used in the determination of basic and diluted (loss) earnings per share were as follows:

(in thousands, except for per share data)

	Years ended December 31,	
	2019	2018
Numerator:		
Net (loss) income attributed to common stockholders	\$ (12,085)	\$ (354)
Denominator:		
Weighted-average shares outstanding for basic earnings per share	20,062,021	19,704,999
Effect of dilutive securities:		
Employee stock options and warrants	-	-
Adjusted weighted-average shares outstanding and assumed conversions for diluted earnings per share	20,062,021	19,704,999
Shares related to dilutive securities excluded because inclusion would be anti-dilutive	314,234	217,152

Conversion of certain outstanding stock options was not assumed for the years ended December 31, 2019 and 2018 because the impact would have been anti-dilutive.

## Going Concern Consideration

We are in compliance with the amended financial covenants contained in our debt agreement with Citizen's Bank at December 31, 2019 and in April 2020 entered into an amendment, which removes certain covenants through March 31, 2021.

We are experiencing, as a result of the COVID-19 pandemic a negative impact on our financial position and results of operations. We have, and are likely to continue to experience loss or delayed orders, disruption of business as a result of worker illness or mandated shutdowns, and this could impact our ability to maintain compliance with loan covenants, our ability to refinance existing indebtedness, and access to new capital. As part of our certification for the Paycheck Protection Program ("PPP") we indicated without these funds, the risk of employee terminations, layoffs and other drastic cost reductions exists. While the PPP funds will provide sufficient liquidity for the Company these funds will not prevent us from potentially not meeting the minimum EBITDA covenants and potentially not meeting the leverage ratio covenants in the future. Including the proceeds from our PPP loan, we believe we have sufficient cash to meet our operating requirement needs for at least the next twelve months, however since some of our loan covenants are related to operating performance, and our operating performance is being significantly impacted by COVID-19 we believe it is probable we will not meet our debt covenants requirement during all of 2020. If our debt becomes due and payable as a result of a covenant violation, it calls into question our ability to continue as a going concern.

## 2. Recent Accounting Pronouncements

### Accounting pronouncements recently adopted

In February 2016, the Financial Accounting Standards Board ("FASB") issued ASU No. 2016-02, *Leases (Topic 842)*, a new standard related to leases to increase transparency and comparability among organizations by requiring the recognition of right-of-use ("ROU") assets and lease liabilities on the balance sheet. Most prominent among the changes in the standard is the recognition of ROU assets and lease liabilities by lessees for those leases classified as operating leases under current U.S. GAAP. Under the standard, disclosures are required to meet the objective of enabling users of financial statements to assess the amount, timing, and uncertainty of cash flows arising from leases. The new standard is effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. A modified retrospective transition approach is required for lessees with capital and operating leases existing at, or entered into after, the beginning of the earliest applicable period presented in the consolidated financial statements, with certain practical expedients available.

The Company adopted the new standard using the modified retrospective approach effective on January 1, 2019. The Company's adoption included lease codification improvements that were issued by the FASB through June 2019.

The FASB made available several practical expedients in adopting the new lease accounting guidance. The Company elected the package of practical expedients permitted under the transition guidance within the amended guidance, which among other things, allowed registrants to carry forward historical lease classification. The Company elected the practical expedient that allows the combination of both lease and non-lease components as a single component and account for it as a lease for all classes of underlying assets. The Company elected not to apply the new guidance to short term leases with an initial term of twelve months or less. The Company recognizes those lease payments in the consolidated statements of operations on a straight-line basis over the lease term. The Company elected to use a single discount rate for a portfolio of leases with reasonably similar characteristics.

The most significant impact was the recognition of ROU assets and related lease liabilities for operating leases on the consolidated balance sheets. The Company recognized ROU assets and related lease liabilities of \$2.7 million and \$3.0 million respectively, related to operating lease commitments, as of January 1, 2019. The operating lease ROU asset represents the lease liability, plus any lease payments made at or before the commencement date, less any lease incentives received.

The new guidance did not have a material impact on the Company's cash flows or results of operations. See Note 18 of the consolidated financial statements.

*Accounting pronouncements not yet adopted*

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments – Credit Losses*, which introduces new guidance for credit losses on instruments within its scope. The new guidance introduces an approach based on expected losses to estimate credit losses on certain types of financial instruments, including, but not limited to, trade and other receivables, held-to-maturity debt securities, loans and net investments in leases. The new guidance also modifies the impairment model for available-for-sale debt securities and requires the entities to determine whether all or a portion of the unrealized loss on an available-for-sale debt security is a credit loss. The standard also indicates that entities may not use the length of time a security has been in an unrealized loss position as a factor in concluding whether a credit loss exists. The ASU is effective for public companies for fiscal years beginning after December 15, 2019, and interim periods within those fiscal years. Early adoption is permitted for all entities for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years. On October 16, 2019 the FASB voted to defer the deadlines for private companies and certain small public companies, including smaller reporting companies, to implement the new accounting standards on credit losses. The new effective date is January 1, 2023. The Company is currently evaluating the effects, if any, that the adoption of this guidance will have on the Company's consolidated financial position, results of operations and cash flows.

In January 2017, the FASB issued ASU 2017-04, *Simplifying the Test for Goodwill Impairment*. ASU 2017-04 simplifies the accounting for goodwill impairment by eliminating Step 2 of the current goodwill impairment test, which required a hypothetical purchase price allocation. Goodwill impairment will now be the amount by which the reporting unit's carrying value exceeds its fair value, limited to the carrying value of the goodwill. ASU 2017-04 is effective for financial statements issued for fiscal years, and interim periods beginning after December 15, 2019. We are currently evaluating the potential impact of the adoption of ASU 2017-04 on our consolidated financial statements.

**3. Revision and Immaterial Correction of an Error in Previously Issued Financial Statements**

During the quarter ended December 31, 2019, we identified errors related to the impairment of intangibles we acquired as part of our acquisition of DP Engineering. In our March 31, 2019 interim unaudited financial statements we recorded an impairment charge to both our definite-lived intangible assets (customer relationships) of \$3.4 million and goodwill of \$2.2 million. Subsequently, we concluded no impairment of the definite-lived intangibles was necessary and the entire impairment amount should have been allocated to goodwill. The revision had no overall impact on the amount of the total impairment but did impact the allocation of impairment between definite-lived intangibles and goodwill. This revision results in additional amortization of the definite-lived intangible asset. In accordance with ASC 250, *Accounting Changes and Error Corrections*, we evaluated the materiality of the errors from quantitative and qualitative perspectives and concluded that the errors were immaterial to the Company's prior 2019 interim unaudited financial statements. Since these revisions were not material to any prior period interim financial statements, no amendments to previously filed interim periodic reports are required. Consequently, the Company has adjusted for these errors by revising our historical unaudited financial statements presented herein. The Company corrected this immaterial error by revising the March 30, 2019, June 30, 2019 and September 30, 2019 unaudited financial statements included herein.

The tables below present the effect of the financial statement adjustments related to the revision discussed above of the Company's previously reported financial statements as of and for the periods ended March 31, June 30, and September 30, 2019. The cumulative tax effect of the revision is reflected in the twelve months ended December 31, 2019 financial statements. This misstatement had no net impact on the Company's consolidated statements of cash flows.

The effect of the immaterial correction of an error on our previously filed unaudited consolidated financial statements as of and for the three months ended March 31, 2019 is as follows:

**Consolidated balance sheets**

*(in thousands)*

	<b>Three months ended March 31, 2019</b>		
	<b>As reported</b>	<b>Adjustment</b>	<b>As revised</b>
Goodwill	\$ 16,709	\$ (3,370)	\$ 13,339
Intangible assets, net	8,999	3,309	12,308
Total assets	\$ 71,424	\$ (61)	\$ 71,363
Accumulated deficit	(46,805)	(61)	(46,866)
Total liabilities and stockholders' equity	\$ 71,424	\$ (61)	\$ 71,363

**Consolidated statement of operations**

	<b>Three months ended March 31, 2019</b>		
	<b>As reported</b>	<b>Adjustment</b>	<b>As revised</b>
Amortization of definite-lived intangible assets	\$ 509	\$ 61	\$ 570
Loss before income taxes	(6,084)	(61)	(6,145)
Net loss	\$ (4,236)	\$ (61)	\$ (4,297)
Basic loss per common share	\$ (0.21)	\$ (0.01)	\$ (0.22)
Diluted loss per common share	\$ (0.21)	\$ (0.01)	\$ (0.22)

**Consolidated statement of stockholders' equity**

	<b>Three months ended March 31, 2019</b>		
	<b>As reported</b>	<b>Adjustment</b>	<b>As revised</b>
Net loss	\$ (4,236)	\$ (61)	\$ (4,297)

The effect of the immaterial correction of an error on our previously filed unaudited consolidated financial statements as of and for the six months ended June 30, 2019 is as follows:

**Consolidated balance sheets***(in thousands)*

	<b>Six months ended June 30, 2019</b>		
	<b>As reported</b>	<b>Adjustment</b>	<b>As revised</b>
Goodwill	\$ 16,709	\$ (3,370)	\$ 13,339
Intangible assets, net	8,454	3,218	11,672
Total assets	\$ 68,996	\$ (152)	\$ 68,844
Accumulated deficit	\$ (46,930)	\$ (152)	\$ (47,082)
Total liabilities and stockholders' equity	\$ 68,996	\$ (152)	\$ 68,844

**Consolidated statement of operations**

	<b>Six months ended June 30, 2019</b>		
	<b>As reported</b>	<b>Adjustment</b>	<b>As revised</b>
Amortization of definite-lived intangible assets	\$ 1,056	\$ 152	\$ 1,208
Loss before income taxes	(5,803)	(152)	(5,955)
Net loss	\$ (4,361)	\$ (152)	\$ (4,513)
Basic loss per common share	\$ (0.22)	\$ (0.01)	\$ (0.23)
Diluted loss per common share	\$ (0.22)	\$ (0.01)	\$ (0.23)

**Consolidated statement of stockholders' equity**

	<b>Six months ended June 30, 2019</b>		
	<b>As reported</b>	<b>Adjustment</b>	<b>As revised</b>
Net loss	\$ (4,361)	\$ (152)	\$ (4,513)

The effect of the immaterial correction of an error on our previously filed unaudited consolidated financial statements as of and for the nine months ended September 30, 2019 is as follows:

**Consolidated balance sheets***(in thousands)*

	<b>Nine months ended September 30, 2019</b>		
	<b>As reported</b>	<b>Adjustment</b>	<b>As revised</b>
Goodwill	\$ 16,709	\$ (3,370)	\$ 13,339
Intangible assets, net	7,960	3,116	11,076
Total assets	\$ 63,859	\$ (254)	\$ 63,605
Accumulated deficit	\$ (48,050)	\$ (254)	\$ (48,304)
Total liabilities and stockholders' equity	\$ 63,859	\$ (254)	\$ 63,605

**Consolidated statement of operations**

	<b>Nine months ended September 30, 2019</b>		
	<b>As reported</b>	<b>Adjustment</b>	<b>As revised</b>
Amortization of definite-lived intangible assets	\$ 1,550	\$ 254	\$ 1,804
Loss before income taxes	(6,356)	(254)	(6,610)
Net loss	\$ (5,482)	\$ (254)	\$ (5,736)
Basic loss per common share	\$ (0.27)	\$ (0.01)	\$ (0.28)
Diluted loss per common share	\$ (0.27)	\$ (0.01)	\$ (0.28)

**Consolidated statement of stockholders' equity**

	<b>Nine months ended September 30, 2019</b>		
	<b>As reported</b>	<b>Adjustment</b>	<b>As revised</b>
Net loss	\$ (5,482)	\$ (254)	\$ (5,736)

**4. Acquisitions***DP Engineering*

On February 15, 2019, the Company through its wholly-owned subsidiary GSE Performance Solutions, Inc. (Performance Solutions), entered into a membership interest purchase agreement (the "DP Engineering Purchase Agreement") with Steven L. Pellerin, Christopher A. Davenport, and DP Engineering to purchase 100% of the membership interests in DP Engineering for \$13.5 million. The acquisition of DP Engineering was completed on an all-cash transaction basis. The acquisition was completed through the draw down of \$14.3 million (including transaction costs) of the term loan. During the transaction, GSE incurred and paid \$0.7 million of transaction cost. The purchase price was subject to customary pre- and post-closing working capital adjustments, plus an additional earn-out amount not to exceed \$5 million, potentially payable in 2020 and 2021 depending on DP Engineering's satisfaction of certain targets for Adjusted EBITDA in calendar years 2019 and 2020, respectively. An escrow of approximately \$1.7 million was funded at the closing and was released in full to the Company in December 2019 as part of a negotiated settlement of certain Company claims for indemnification pursuant to the DP Engineering Purchase Agreement.

DP Engineering is a provider of value-added technical engineering solutions and consulting services to nuclear power plants with an emphasis on preparation and implementation of design modifications during plant outages. Located in Fort Worth, Texas, DP Engineering is well-regarded as a leading service provider to the nuclear power industry, having been designated an “engineer of choice” by several of the largest power generation companies.

Based on preliminary forecasted adjusted EBITDA of DP Engineering for the years 2019 and 2020, as of the acquisition date, the estimated fair value of the total earn-out amount was \$1.2 million and was recorded as contingent consideration. Subsequent to the acquisition, it was determined that the conditions related to the contingent consideration would not be met and hence \$1.2 million was recorded to income in the first quarter of 2019.

The following table summarizes the calculation of adjusted purchase price as of the acquisition date (in thousands):

Base purchase price per agreement	\$ 13,500
Pre closing working capital adjustment	155
Fair value of contingent consideration	1,200
Total purchase price	<u>\$ 14,855</u>

The following table summarizes the consideration paid to acquire DP Engineering and the fair value of the assets acquired and liabilities assumed at the date of the transaction. The following amounts except for cash are all reflected in the consolidated statement of cash flows within the “Acquisition of DP Engineering, net of cash acquired” line caption.

(in thousands)

Total purchase price	<u>\$ 14,855</u>
Purchase price allocation:	
Cash	134
Contract receivables	2,934
Prepaid expenses and other current assets	209
Property, and equipment, net	98
Intangible assets	6,798
Other assets	1,806
Accounts payable and accrued expenses	(1,396)
Other liabilities	(1,494)
Total identifiable net assets	9,089
Goodwill	5,766
Net assets acquired	<u>\$ 14,855</u>

The fair value of the assets acquired includes gross trade receivables of \$2.9 million, of which the Company has collected in full. GSE did not acquire any other class of receivable as a result of the acquisition of DP Engineering.

The goodwill is primarily attributable to value-added technical engineering solutions and consulting services to nuclear power plants with an emphasis on preparation and implementation of design modification during plant outages, the workforce of the acquired business and the significant synergies expected to arise after the acquisition of DP Engineering. The total amount of goodwill is expected to be tax deductible. All of the \$5.8 million of goodwill was assigned to our Performance Improvement Solutions segment.

Approximately one week following our acquisition of DP Engineering, an adverse event occurred at one of DP Engineering’s major customer’s location that affected plant operations. This incident adversely impacted the relationship between DP Engineering and its customer. The Company determined this represented a triggering event requiring an interim assessment for impairment. As a result of the impairment analysis, we recognized an impairment charge of \$5.6 million on goodwill related to the acquisition of DP Engineering during the quarter ended March 31, 2019. On August 6, 2019, following the Notice of Suspension, the Company received a Notice of Termination from this customer, notifying the Company that they were terminating their Engineer of Choice consulting service agreement with DP Engineering. See Note 7 for further analysis on the carrying amount change due to impairment on goodwill and definite-lived intangible assets during the year ended December 31, 2019. As described in Note 3, a revision was made to prior periods regarding the impairment of DP Engineering.

On August 27, 2019, the Company made a demand for indemnification pursuant to the DP Engineering Purchase Agreement and on December 30, 2019, the Company entered into a settlement agreement pursuant to which the sellers agreed to release the full escrow account balance to the Company and pay additional funds, in the total amount of \$2.0 million. The Company received these funds on December 31, 2019.

The following table summarizes the fair value of intangible assets acquired at the date of acquisition and the related weighted average amortization period:

Intangible Assets	Weighted average amortization period <i>(in years)</i>	Fair Value <i>(in thousands)</i>
Customer relationships	15	\$ 4,898
Tradename	10	1,172
Non-compete agreements	5	728
Total		<u>\$ 6,798</u>

DP Engineering contributed revenue of \$8.2 million to GSE for the period from February 15, 2019 to December 31, 2019.

*True North*

On May 11, 2018, GSE, through Performance Solutions, entered into a membership interest purchase agreement with Donald R. Horn, Jenny C. Horn, and True North Consulting LLC (the True North Purchase Agreement) to purchase 100% of the membership interests in True North Consulting LLC (True North) for \$9.8 million. The purchase price was subject to customary pre- and post-closing working capital adjustments, resulting in total consideration of \$9.9 million. The True North Purchase Agreement contains customary representations, warranties, covenants, and indemnification provisions subject to certain limitations. An escrow of \$1.5 million was funded from the cash paid to the sellers of True North at the closing and was available to GSE to promote retention of key personnel and satisfy indemnification claims for 18 months after the closing, but no claims were made pursuant to the membership interest purchase agreement and all funds were related to the sellers prior to December 31, 2019. The acquisition of True North was completed on an all-cash transaction basis. In connection with the acquisition, we drew down a \$10.3 million term loan to finance the transaction (including the transaction costs). See Note 13 for further information on the loan.

True North is a provider of technical engineering solutions to nuclear and fossil fuel power plants with an emphasis on regulatory-driven ASME code programs. Located in Montrose, Colorado, True North is a well-regarded service provider to leading companies in the power industry. The acquisition of True North has broadened our engineering services offering, expanded our relationships with several of the largest nuclear energy providers in the United States, and has added a highly specialized, complementary talent pool to our employee base.

The following table summarizes the consideration paid to acquire True North and the fair value of the assets acquired and liabilities assumed at the date of the transaction. As of December 31, 2019, the Company had finalized the determination of the fair value allocated to various assets and liabilities.

(in thousands)

Total purchase price	\$ 9,915
Purchase price allocation:	
Cash	306
Contract receivables	1,870
Prepaid expenses and other current assets	8
Property, and equipment, net	1
Intangible assets	5,088
Accounts payable, accrued expenses	(1,744)
Accrued compensation	(353)
Total identifiable net assets	5,176
Goodwill	4,739
Net assets acquired	\$ 9,915

The fair value of the assets acquired includes gross trade receivables of \$1.9 million, of which the Company has collected in full. GSE did not acquire any other class of receivable as a result of the acquisition of True North.

True North contributed revenue of \$8.0 million to GSE for the period from May 11, 2018 to December 31, 2018. For the year ended December 31, 2019, True North contributed revenue of \$9.8 million to GSE.

The goodwill is primarily attributable to broader engineering service offering to new and existing customers, the workforce of the acquired business and the significant synergies expected to after since the acquisition of True North. The total amount of goodwill is expected to be tax deductible. All of the \$4.7 million of goodwill was assigned to our Performance Improvement Solutions segment.

The Company identified other intangible assets of \$5.1 million, including customer contracts and relationships, tradename, non-compete agreements, and alliance agreements, with amortization periods of four years to fifteen years

The following table summarizes the fair value of intangible assets acquired at the date of acquisition and the related weighted average amortization period:

Intangible Assets	Weighted Average Amortization Period	Fair Value
	(in years)	(in thousands)
Customer relationships	15	\$ 3,758
Tradename	10	582
Alliance agreements	5	527
Non-compete agreements	4	221
Total		\$ 5,088

#### Unaudited Pro Forma Financial Information

The unaudited pro forma financial information in the table below summarizes the combined results of operations for GSE, True North and DP Engineering as if the business combinations had occurred on January 1, 2018, in thousands.

	Years ended December 31,	
	2019	2018
Revenue	\$ 85,959	\$ 120,373
Net loss	(4,805)	(274)



The pro forma financial information for all periods presented has been calculated after applying GSE's accounting policies and has also included pro forma adjustments resulting from these acquisitions, including amortization charges of the intangible assets identified from these acquisitions, interest expenses related to the financing transaction in connection with the acquisition of DP Engineering, and the related tax effects as if aforementioned companies were combined as of January 1, 2018.

For the year ended December 31, 2019 the Company has incurred \$0.7 million of selling, general and administrative costs related to the acquisition of DP Engineering. Due to a triggering event described in Note 7, an impairment test was conducted, which resulted in substantially writing down the estimated fair value of goodwill initially recognized upon the acquisition. These expenses are included in general and administrative expense on GSE's consolidated statements of operations and are reflected in pro forma loss for the year ended December 31, 2019, in the table above.

For the year ended December 31, 2018 the Company incurred \$0.5 million of selling, general and administrative costs related to the acquisition of True North. These expenses are included in general and administrative expense on GSE's consolidated statements of operations and are reflected in pro forma loss for the year ended December 31, 2018, in the table above.

The pro forma financial information is not intended to reflect the actual results of operations that would have occurred if the acquisition had been completed on January 1, 2018, nor is it intended to be an indication of future operating results.

## 5. Revenue

We account for revenue in accordance with ASC 606, *Revenue from Contracts with Customers*, upon the adoption of ASU 2014-09, *Revenue from Contracts with Customers*, and all the related updates (collectively, the new revenue standard) on January 1, 2018, using the modified retrospective transition method.

We generate revenue primarily through three broad revenue streams: 1) SDB, 2) Software, and 3) Training and Consulting Services. We recognize revenue from SDB and software contracts mainly through the Performance Improvement Solutions segment and the training and consulting service contracts through both the Performance Improvement Solutions segment and Nuclear Industry Training and Consulting segment.

The following table represents a disaggregation of revenue by type of goods or services for the years ended December 31, 2019 and 2018, along with the reportable segment for each category:

(in thousands)

	<b>Twelve Months Ended December 31,</b>	
	<b>2019</b>	<b>2018</b>
<b>Performance Improvement Solutions segment</b>		
System Design and Build	\$ 19,574	\$ 25,948
Software	2,883	2,883
Training and Consulting Services	23,320	14,123
<b>Nuclear Industry Training and Consulting segment</b>		
Training and Consulting Services	37,199	49,295
<b>Total revenue</b>	<b>\$ 82,976</b>	<b>\$ 92,249</b>

SDB contracts are typically fixed-priced, and we receive payments based on a billing schedule as established in our contracts. The transaction price for software contracts is generally fixed. Fees for software are normally due in advance of or shortly after delivery of the software. Fees for PCS are normally paid in advance of the service period. For Training and Consulting Services, the customers are generally billed on a regular basis, such as weekly, biweekly or monthly, for services provided. Contract liability, which we classify as billing in excess of revenue earned, relates to payments received in advance of performance under the contract. Contract liabilities are recognized as revenue as performance obligations are satisfied.

The following table reflects the balance of contract liabilities and the revenue recognized in the reporting period that was included in the contract liabilities from contracts with customers:

(in thousands)

	<b>December 31, 2019</b>	<b>December 31, 2018</b>
Billings in excess of revenue earned (BIE)	\$ 7,613	\$ 10,609
Revenue recognized in the period from amounts included in BIE at the beginning of the period	\$ 9,089	11,275

For an SDB contract, we generally have two main performance obligations: the training simulator build and PCS. The training simulator build generally includes hardware, software, and labor. We recognize the training simulator build revenue over the construction and installation period using the cost-to-cost input method. In applying the cost-to-cost input method, we use the actual costs incurred to date relative to the total estimated costs to measure the work progress toward the completion of the performance obligation and recognize revenue accordingly. Estimated contract costs are reviewed and revised periodically as the work progresses, and the cumulative effect of any change in estimates is recognized in the period in which the change is identified. Estimated losses are recognized in the period such losses are identified. Uncertainties inherent in the performance of contracts include labor availability and productivity, material costs, change order scope and pricing, software modification and customer acceptance issues. The reliability of these cost estimates is critical to the Company's revenue recognition as a significant change in the estimates can cause the Company's revenue and related margins to change significantly from the amounts estimated in the early stages of the project.

For the year ended December 31, 2019, the Company recognized revenue of \$2.5 million related to performance obligations satisfied in previous periods.

As of December 31, 2019, the aggregate amount of transaction price allocated to the remaining performance obligations of SDB, software and fixed-price training and consulting services contracts is \$28.0 million. The Company will recognize the revenue as the performance obligations are satisfied, which is expected to occur over the next twelve months.

Part of the training and consulting services contracts are T&M based. Under a typical T&M contract, the Company is compensated based on the number of hours of approved time provided by temporary workers and the bill rates, which are fixed by type of work, as well as approved expenses incurred. As part of our adoption of ASU 2014-09, we have elected to use the optional exemption under ASC 606-10-50-14(b), pursuant to which we have excluded disclosures of transaction prices allocated to remaining performance obligations under such contracts and when we expect to recognize the revenue.

## 6. Restructuring expenses

### *International Restructuring*

On December 27, 2017, the Board of the Company approved an international restructuring plan to streamline and optimize the Company's global operations. Beginning in December 2017, GSE has been in the process of consolidating its engineering services and R&D activities to Maryland and ceasing an unprofitable non-core business in the United Kingdom (UK). As a result, the Company closed its offices in Nyköping, Sweden; Chennai, India; and Stockton-on-Tees, UK. These actions are designed to improve Company productivity by eliminating duplicate employee functions, increasing GSE's focus on its core business, improving efficiency and maintaining the full range of engineering capabilities while reducing costs and organizational complexity.

GSE eliminated approximately 40 positions due to these changes, primarily in Europe and India, and will undertake other cost-savings measures. As a result of these efforts, as shown in the table below, GSE expects to record a restructuring charge of approximately \$2.2 million in total, primarily related to workforce reductions, contracts termination costs and asset write-offs due to the exit activities. We recorded a restructuring charge of \$1.3 million for the year ended December 31, 2018. In addition to the restructuring costs in the table below, the Company has an estimated \$1.3 million of cumulative translation adjustments that will be charged against net income (loss) and an estimated \$1.0 million of tax benefits that will be realized upon liquidation of these foreign entities. GSE expects to recognize the remaining restructuring costs, currency translation adjustments and tax benefits in 2020.

For the year ended December 31, 2019, we made payments related to our international restructuring for employee termination benefits and other legal expenses in the amount of \$54,000 that had been previously accrued.

### *DP Engineering Restructuring*

During the third quarter of 2019, the Company implemented a restructuring plan as a result of the work suspension of DP Engineering's largest customer and subsequent notification on August 6, 2019 that the Engineer of Choice contract was being terminated. Accordingly, the Company took the necessary measures to reduce DP's workforce by approximately 12 FTE's and in addition terminated one of its office leases early resulting in one-time costs of \$0.3 million being paid in the third quarter. This reduction in force aligns the workforce to the current level of business going forward.

### *Lease abandonment*

As of December 31, 2019, management decided to abandon a portion of several operating lease right of use lease assets in long idled space in our Sykesville office and in DP Engineering's Fort Worth office. This was decided as part of the on-going restructuring plans to right size the organization. Management determined the square footage which would remain in use and took steps to insure the abandoned space was separated from the remaining in use space, end access of all employees to the abandoned sections, and remove any remaining office furniture assets. We applied the abandonment guidance in ASC 360-10-35. We believe "abandonment" means ceasing to use the underlying asset and lacking either the intent or the ability to sublease the underlying asset. Accordingly, lease abandonment restructuring charges incurred relating to the right of use assets for the year ended December 31, 2019 totaled \$1.5 million.

The following table shows the abandoned square footage and right of use asset details:

	<u>Sykesville</u>	<u>DP Engineering</u>	<u>Total</u>
Square Ft in use December 1, 2019	36,549	19,871	56,420
Square Ft in use December 31, 2019	14,636	9,936	24,572
Abandoned Square Ft	21,913	9,936	31,849
<i>(in thousands)</i>			
Pre-Abandonment ROU Balance	\$ 1,474	\$ 1,291	\$ 2,765
Post-Abandonment Balance	590	646	1,236
Abandonment ROU	<u>884</u>	<u>646</u>	<u>1,529</u>

Collectively, for the year ended December 31, 2019, the Company recorded restructuring charges of approximately \$2.5 million, of which \$0.3 million related to DP Engineering severance and lease termination, and \$1.5 million lease abandonment charges, and \$0.5 million related to an executive departure related to the suspension of the Company's acquisition strategy.

The following table shows the total restructuring costs:

	<u>Total Expected Restructuring Costs</u>	<u>Total 2019 Restructuring Costs</u>
<i>Restructuring Costs</i>		
Lease Abandonment	\$ 1,529	\$ 1,529

Lease Abandonment costs	57	57
Lease termination costs	39	39
International Restructuring	106	106
Employee termination benefits	747	747
Total	<u>\$ 2,478</u>	<u>\$ 2,478</u>

## 7. Goodwill and Intangible Assets

### *Intangible Assets Subject to Amortization*

Amortization of intangible assets other than goodwill is recognized on a straight-line basis over the estimated useful life of the intangible assets, except for customer relationships which are recognized in proportion to the related projected revenue streams. Intangible assets with definite lives are reviewed for impairment if indicators of impairment arise. The Company does not have any intangible assets with indefinite useful lives, other than goodwill.

As discussed in Note 4, we recognized definite-lived intangible assets of \$6.8 million upon acquisition of DP Engineering on February 15, 2019, including customer contracts and relationships, trademarks and non-compete agreements, with amortization periods of 5 to 15 years. Amortization of our definite-lived intangible assets is recognized on a straight-line basis over the estimate useful life of the associated assets.

Following the February 23, 2019 event occurring at a DP Engineering customer location and subsequent receipt of the Notice of Suspension on February 28, 2019, the Company concluded that DP Engineering's relationship with its largest customer has been adversely impacted. The DP Engineering customer contracts and relationships were the major component of the definite-lived intangible assets recognized in connection with the acquisition of DP Engineering. Accordingly, the Company determined that a triggering event had occurred requiring an interim assessment of whether a potential impairment of definite-lived intangible asset impairment test was necessary.

Therefore, the impairment test of the definite-lived intangible assets recognized upon the acquisition of DP Engineering was also conducted according to ASC 350, *Intangibles-Goodwill and other*.

The interim impairment test was based on the present value of revised cash flow projected for 5 to 15 years. The result of the impairment test concluded no impairment of the definite-lived intangibles was necessary because the undiscounted cash flow of the asset group exceeds the adjusted carrying value. Due to the August 6, 2019 Notice of Termination of the Engineer of Choice agreement with DP Engineering, the Company performed an additional interim impairment test as of September 30, 2019 and determined no further impairment testing is needed.

As described in Note 3, a revision was made to prior periods regarding the impairment of DP Engineering.

The following table shows the gross carrying amount and accumulated amortization of definite-lived intangible assets:

*(in thousands)*

	As of December 31, 2019		
	Gross Carrying Amount	Accumulated Amortization	Net
<i>Amortized intangible assets:</i>			
Customer relationships	\$ 11,730	\$ (4,079)	\$ 7,651
Trade names	2,467	(727)	1,740
Developed technology	471	(471)	-
Non-contractual customer relationships	433	(433)	-
Noncompete agreement	949	(217)	732
Alliance agreement	527	(171)	356
Others	167	(167)	-
Total	<u>\$ 16,744</u>	<u>\$ (6,265)</u>	<u>\$ 10,479</u>

*(in thousands)*

	As of December 31, 2018		
	Gross Carrying Amount	Accumulated Amortization	Net
<i>Amortized intangible assets:</i>			
Customer relationships	\$ 6,831	\$ (2,375)	\$ 4,456
Trade names	1,295	(318)	977
Developed technology	471	(471)	-
Non-contractual customer relationships	433	(433)	-
Noncompete agreement	221	(35)	186
Alliance agreement	527	(66)	461
Noncompete agreement	167	(167)	-
Total	<u>\$ 9,945</u>	<u>\$ (3,865)</u>	<u>\$ 6,080</u>

Amortization expense related to definite-lived intangible assets totaled \$2.4 million and 1.6 million for the years ended December 31, 2019 and 2018, respectively. The following table shows the estimated amortization expense of the definite-lived intangible assets for the next five years:

*(in thousands)*

Years ended December 31:

2020	\$ 2,808
2021	2,143
2022	1,626
2023	1,199
Thereafter	2,703
	<u>\$ 10,479</u>

### Goodwill

The Company reviews goodwill for impairment annually as of December 31 and whenever events or changes in circumstances indicate the carrying value of an asset may not be recoverable. The Company tests goodwill at the reporting unit level. A reporting unit is an operating segment, or one level below an operating segment, as defined by U.S. GAAP. After the acquisition of Hyperspring on November 14, 2014, the Company determined that it had two reporting units, which are the same as our two operating segments: (i) Performance Improvement Solutions; and (ii) Nuclear Industry Training and Consulting (which includes Hyperspring and Absolute).

On February 15, 2019, we acquired DP Engineering (as described in Note 4) and preliminarily recorded goodwill and identified intangible assets as part of the acquisition. On February 23, 2019, an unexpected event occurred at one of DP Engineering's significant customers and all pending work for that customer was suspended on February 28, 2019 pending a root cause analysis. While that analysis is now complete, and virtually all of the suspended projects have been restarted, the customer terminated the existing contract on August 6, 2019. The Company determined that the notice of suspension was a triggering event necessitating a goodwill impairment test.

On May 10, 2019, the Company determined that a triggering event had occurred, requiring an assessment for impairment to be completed. The impairment test used an income-based approach with discounted cash flow method, and market-based approach including both guideline public company method and merger and acquisition method.

The impairment test results indicated that the current estimated fair value of goodwill recorded from the acquisition of DP Engineering had declined below its initial estimated fair value at the acquisition date. As a result, the Company recognized an impairment charge of \$5.6 million to write down the goodwill on DP Engineering. The Company determined that the impact of the suspension of obtaining new contracts from that customer resulted in a material downward revision to DP Engineering's revenue and profitability forecasts when compared to the acquisition date valuation. The impairment charge on goodwill was recorded within "Loss on impairment" in our consolidated statements of operations. Due to the August 6, 2019 Notice of Termination of the Engineer of Choice agreement with DP Engineering, the Company performed, under ASC 350 guidance, additional impairment testing as of September 30, 2019 and at this time have determined no further impairment is needed. As described in Note 3, a revision was made to prior periods regarding the impairment of DP Engineering.

For the annual goodwill impairment test as of December 31, 2019, the Company performed a quantitative step 1 goodwill impairment analysis and have concluded that the estimated fair values of each of the reporting units exceeded their respective carrying values. No additional goodwill impairment was recorded at year end 2019.

As of December 31, 2019 and 2018, goodwill of \$13.3 million and \$13.2 million, respectively, related to the acquisitions of Hyperspring, Absolute, True North Consulting, and DP Engineering. \$5.6 million impairment of goodwill was recorded in 2019.

The change in the net carrying amount of goodwill from January 1, 2018 through December 31, 2019 was comprised of the following items:

(in thousands)

	<b>Performance Improvement Solutions</b>	<b>Nuclear Industry Training and Consulting</b>	<b>Total</b>
Net book value at January 1, 2018	\$ -	\$ 8,431	\$ 8,431
Acquisition	4,739	-	4,739
Dispositions	-	-	-
Goodwill impairment loss	-	-	-
Net book value at December 31, 2018	<u>\$ 4,739</u>	<u>\$ 8,431</u>	<u>\$ 13,170</u>
Acquisition	5,766	-	5,766
Dispositions	-	-	-
Goodwill impairment loss	(5,597)	-	(5,597)
Net book value at December 31, 2019	<u>\$ 4,908</u>	<u>\$ 8,431</u>	<u>\$ 13,339</u>

### 8. Contract Receivables

Contract receivables represent the Company's unconditional rights to considerations due from a broad base of both domestic and international customers. All contract receivables are considered to be collectible within twelve months.

Recoverable costs and accrued profit not billed represent costs incurred and associated profit accrued on contracts that will become billable upon future milestones or completion of contracts. The components of contract receivables are as follows:

(in thousands)

	December 31,	
	2019	2018
Billed receivables	\$ 11,041	\$ 15,998
Unbilled receivables	6,624	5,506
Allowance for doubtful accounts	(458)	(427)
Total contract receivables, net	\$ 17,207	\$ 21,077

Management reviews collectability of receivables periodically and records an allowance for doubtful accounts to reduce our receivables to their net realizable value when it is probable that the Company will not be able to collect all amounts due according to the contractual terms of the receivable. The allowance for doubtful accounts is based on historical trends of past due accounts, write-offs, and specific identification and review of customer accounts. During the years ended December 31, 2019 and 2018, the Company recorded bad debt expense of \$31,000 and \$294,000, respectively.

During January 2020, the Company invoiced \$3.8 million of the unbilled amounts related to the balance at December 31, 2019.

The activity in the allowance for doubtful accounts is as follows:

(in thousands)

	As of and for the	
	Years ended December 31,	
	2019	2018
Beginning balance	\$ 427	\$ 137
Current year provision	31	294
Current year write-offs	-	-
Currency adjustment	-	(4)
Ending balance	\$ 458	\$ 427

## 9. Prepaid Expenses and Other Current Assets

Prepaid expenses and other current assets consist of the following:

(in thousands)

	December 31,	
	2019	2018
Inventory	\$ -	\$ 139
Income tax receivable	237	310
Prepaid expenses	861	556
Other current assets	782	795
Total	\$ 1,880	\$ 1,800

Inventory composed of raw material, is being purchased to support the construction of three major nuclear simulation projects related to a significant contract that was executed during the first quarter of 2016. The construction was completed in the first quarter of 2019. Inventory is recorded at the lower of cost or net realizable value in accordance with ASC 330, *Inventory*. Cost is determined using specific identification.

Other current assets primarily include value-added tax receivables and cash deposited in a Swedish tax account. Prepaid expenses primarily include prepayment for insurance and other subscription based services.

## 10. Equipment, Software and Leasehold Improvements

Equipment, software and leasehold improvements, net consist of the following:

(in thousands)

	December 31,	
	2019	2018
Computer and equipment	\$ 2,266	\$ 2,178
Software	1,693	1,682
Leasehold improvements	664	619
Furniture and fixtures	900	814
	5,523	5,293
Accumulated depreciation	(4,584)	(4,228)
Equipment, software and leasehold improvements, net	\$ 939	\$ 1,065

Depreciation expense was \$0.4 million and \$0.5 million for the years ended December 31, 2019 and 2018, respectively.

## 11. Product Warranty

*Accrued warranty*

For contracts that contain a warranty provision, the Company provides an accrual for estimated future warranty costs based on historical experience and projected claims. The Company's contracts may contain warranty provisions ranging from one year to five years. The current portion of the accrued warranty is presented separately on the consolidated balance sheets within current liabilities whereas the noncurrent portion is included in other liabilities.

In the final quarter of 2019 management reassessed the warranty percentage used in determining project budgets for warranty projects which were active at the end of 2019 and used in project budgets for non-warranty projects active at the end of 2019. In 2018 and prior periods, the GSE standard warranty was 4% of non-physical material cost of an individual project. Physical material is excluded from this target as the associated vendor typically provides their own warranty. Based on historical warranty costs, trends in actual expenses incurred and discussions with sales managers, it is management's determination that a 3% warranty provision is a conservative estimate for all warranty costs both for active warranty projects and active non-warranty projects. The adjustment of this change resulted in a \$0.2 million decrease in warranty provision.

The activity in the accrued warranty accounts is as follows:

(in thousands)

	As of and for the years ended December 31,	
	2019	2018
Beginning balance	\$ 1,621	\$ 1,953
Current year provision	(133)	(107)
Current year claims	(164)	(215)
Currency adjustment	(1)	(10)
Ending balance	<u>\$ 1,323</u>	<u>\$ 1,621</u>

The current and non-current warranty balance is as follows:

	Years ended December 31,	
	2019	2018
Current	\$ 921	\$ 981
Non-current	402	640
Total Warranty	<u>\$ 1,323</u>	<u>\$ 1,621</u>

## 12. Fair Value of Financial Instruments

ASC 820, *Fair Value Measurement* (ASC 820) defines fair value as the exchange price that would be received for an asset or paid to transfer a liability (an exit price) in the principle or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. ASC 820 also establishes a fair value hierarchy which requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value.

The levels of the fair value hierarchy established by ASC 820 are:

Level 1: inputs are quoted prices, unadjusted, in active markets for identical assets or liabilities that the reporting entity has the ability to access at the measurement date.

Level 2: inputs are other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. A Level 2 input must be observable for substantially the full term of the asset or liability. The Monte Carlo model was used to calculate the fair value of level 2 instruments. The inputs used are current stock price, expected term, risk-free rate, number of trials, volatility and interest rates.

Level 3: inputs are unobservable and reflect the reporting entity's own assumptions about the assumptions that market participants would use in pricing the asset or liability. The contingent consideration was based on EBITDA.

The Company considers the recorded value of certain of its financial assets and liabilities, which consist primarily of cash equivalents, accounts receivable and accounts payable, to approximate the fair value of the respective assets and liabilities at December 31, 2019 and 2018 based upon the short-term nature of the assets and liabilities.

As of December 31, 2019, the Company had four standby letters of credit totaling \$1.2 million which represent performance bonds on three contracts.

The following table presents assets and liabilities measured at fair value at December 31, 2019:

	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total
	(in thousands)			
Money market funds	\$ 434	\$ -	\$ -	\$ 434

Foreign exchange contracts	-	49	-	49
Total assets	<u>\$ 434</u>	<u>\$ 49</u>	<u>\$ -</u>	<u>\$ 483</u>
Liability awards	-	(9)	-	(9)
Interest rate swap contract	-	(160)	-	(160)
Total liabilities	<u>\$ -</u>	<u>\$ (169)</u>	<u>\$ -</u>	<u>\$ (169)</u>

The following table presents assets and liabilities measured at fair value at December 31, 2018:

<i>(in thousands)</i>	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Total
Money market funds	\$ 824	\$ -	\$ -	\$ 824
Foreign exchange contracts	-	43	-	43
Total assets	<u>\$ 824</u>	<u>\$ 43</u>	<u>\$ -</u>	<u>\$ 867</u>
Liability awards	\$ -	\$ (118)	\$ -	\$ (118)
Interest rate swap contract	-	(103)	-	(103)
Total liabilities	<u>\$ -</u>	<u>\$ (221)</u>	<u>\$ -</u>	<u>\$ (221)</u>

During the years ended December 31, 2019 and 2018, the Company did not have any transfers into or out of Level 3.

The following table provides a roll-forward of the fair value of the contingent consideration categorized as Level 3 for the year ended December 31, 2019:

<i>(in thousands)</i>	
Balance, January 1, 2019	\$ -
Issuance of contingent consideration in connection with acquisitions	1,200
Change in fair value	(1,200)
Balance, December 31, 2019	<u>\$ -</u>

### 13. Debt

#### Citizen's Bank

The Company entered into a three-year, \$5.0 million revolving line of credit facility (RLOC) with Citizen's Bank (the "Bank") on December 29, 2016, to fund general working capital needs, including acquisitions. The Company is not required to maintain a restricted cash collateral account at the Bank for outstanding letters of credit and working capital advances. The credit facility agreement is subject to standard financial covenants and reporting requirements.

On May 11, 2018, the Company entered into an Amended and Restated Credit and Security Agreement (the Credit Agreement) with the Bank, amending and restating the Company's existing Credit and Security Agreement with the Bank, which included a \$5.0 million asset-based revolving credit facility between the Company and the Bank, to now include (a) a \$5.0 million revolving credit facility not subject to a borrowing base, including a letter of credit sub-facility, and (b) a \$25.0 million delayed-draw term loan facility available to be drawn upon for up to 18 months and to finance certain permitted acquisitions by the Company. The credit facilities mature in five years and bear interest at LIBOR plus a margin that varies depending on the overall leverage ratio of the Company and its subsidiaries. Revolving loans are interest-only with principal due at maturity, while term loans require monthly payments of principal and interest based on an amortization schedule.

The Company's obligations under the Credit Agreement are guaranteed by GSE's wholly-owned subsidiaries Hyperspring, Absolute, and True North and by any future material domestic subsidiaries (collectively, the Guarantors). Attendant to the Company's acquisition of DP Engineering, the Company and the Bank entered into a Third Amendment and Reaffirmation Agreement and a Fourth Amendment and Reaffirmation Agreement on February 15, 2019 and March 20, 2019, respectively. On June 28, 2019, the Company and the Bank entered into a Fifth Amendment and Reaffirmation Agreement, which changed the fixed charge coverage ratio from 1.25, to four different ratios ranging from 1.05 to 1.25 among different time periods and changed the leverage ratio to: (i) 2.75 to 1.00 for the periods ending on June 30, 2019, September 30, 2019, December 31, 2019 and March 31, 2020; (ii) 2.50 to 1.00 for the periods ending June 30, 2020 and September 30, 2020; (iii) 2.25 to 1.00 for the periods ending December 31st, March 31st, June 30th and September 30th thereafter.

On January 8, 2020, the Company entered into a Sixth Amendment and Reaffirmation Agreement. The amendments contained therein relaxed the fixed charge coverage ratio and leverage ratio, as well as delayed testing of both financial covenants, but added a covenant requiring that the Company maintain a consolidated, Adjusted EBITDA target of \$4.25 million to be tested as of December 31, 2019, March 31, 2020, and June 30, 2020. Further, the Company agreed to maintain a minimum USA Liquidity of at least \$5.0 million in the aggregate, to be tested bi-weekly as of the fifteenth (15th) and the last day of each month beginning on December 31, 2019 and thereafter until June 30, 2020. In addition to the revised covenants, GSE was required to pay a \$20,000 bank fee and additional principal payments as follows: January 6, 2020 of \$3.0 million, March 31, 2020 of \$1.0 million, and June 30, 2020 of \$1.0 million.

On April 17, 2020, the Company entered into a Seventh Amendment and Reaffirmation Agreement. The Company shall maintain a minimum fixed charge coverage ratio of 1.25 to 1.00, to be tested quarterly as of the last day of each quarter beginning with the quarter ending June 30, 2021, on rolling four-quarter basis. The Company shall not exceed a maximum leverage ratio, to be tested quarterly as of the last day of each quarter beginning with the quarter ending September 30, 2020, on a rolling four-quarter basis as follows: (i) 3.00 to 1.00 for the period ending on September 30, 2020, (ii) 2.50 to 1.00 for the period ending on December 31, 2020, and (iii) 2.25 to 1.00 for the period ending on March 31, 2021 and for the periods ending on each December 31, March 31, June 30 and September 30 thereafter. In addition to the revised covenants, GSE was required to pay a \$50,000 bank fee and additional principal payments as follows: April 17, 2020 \$0.75, and June 30, 2020 \$0.5 million. The Company has the option to refinance the term loan facility if certain requirements are met, including meeting certain covenant thresholds.

#### RLOC

The Company entered into a three-year, \$5.0 million revolving line of credit facility with the Bank on December 29, 2016, to fund general working capital needs. We intend to continue using the RLOC for short-term working capital needs and the issuance of letters of credit in connection with business operations. Letter of credit issuance fees range between 1.25% and 2% depending on the Company's overall leverage ratio, and the Company pays an unused RLOC fee quarterly based on the average daily unused balance.

At December 31, 2019, there were no outstanding borrowings under the RLOC and four letters of credit totaling \$1.2 million. The amount available at December 31, 2019, after consideration of the letters of credit was approximately \$3.8 million. At December 31, 2018, there were no outstanding borrowings on the RLOC and 5 letters of credit totaling \$2.3 million.

#### Term Loan

As discussed in Note 4, we acquired DP Engineering on February 15, 2019 for approximately \$13.5 million in cash. The purchase price was subject to customary pre- and post-closing working capital adjustments plus an additional earn-out amount not to exceed \$5.0 million potentially payable in 2020 and 2021. We drew down \$14.3 million to finance the acquisition of DP Engineering. The loan bears interest at the adjusted LIBOR plus a margin ranging between 2% and 2.75% depending on the overall leverage ratio of the Company and matures in five years. There were no debt issuance costs and loan origination fees associated with the loan related for our acquisition of DP Engineering.

Additionally, as discussed in Note 4, we acquired True North on May 11, 2018 for total consideration of approximately \$9.9 million in cash. We drew down \$10.3 million to finance the acquisition of True North, \$0.5 million of which was repaid to the Bank on the same day. The loan bears interest at the adjusted one month-LIBOR plus a margin ranging between 2% and 2.75% depending on the overall leverage ratio of the Company and matures in five years on May 11, 2023. We also incurred \$70,000 debt issuance costs and \$75,000 loan origination fees related to the Credit Agreement. Debt issuance costs and loan origination fees are reported as a direct deduction from the carrying amount of the loan and are amortized over the term of the loan using the effective interest method.

At December 31, 2019, the outstanding debt under the delayed draw term loan facility was as follows:



Long-term debt, net of discount	\$ 18,481
Less: current portion of long-term debt	18,481
Long-term debt, less current portion	<u>\$ -</u>

As discussed in Note 1, substantial doubt has been raised regarding the Company's ability to continue as a going concern due to a probable covenant violation. As such, the classification of our debt is current.

The Credit Agreement contains customary covenants and restrictions typical for a financing of this type that, among other things, require the Company to satisfy certain financial covenants and restrict the Company's ability to incur additional debt, pay dividends and make distributions, make certain investments and acquisitions, repurchase its stock and prepay certain indebtedness, create liens, enter into agreements with affiliates, modify the nature of its business, enter into sale-leaseback transactions, transfer and sell material assets and merge or consolidate. Non-compliance with one or more of the covenants and restrictions after any applicable grace period could result in the obligations under the Credit Agreement becoming immediately due and payable and termination of the credit facilities. In addition to non-compliance with covenants and restrictions, the Credit Agreement also contains other customary events of default. If an event of default under the Credit Agreement occurs and is continuing, then the Bank may declare the obligations under the Credit Agreement to be immediately due and payable and may terminate the credit facilities.

#### 14. Derivative Instruments

In the normal course of business, our operations are exposed to fluctuations in foreign currency values and interest rate changes. We may seek to control a portion of these risks through a risk management program that includes the use of derivative instruments.

##### *Foreign Currency Risk Management*

The Company utilizes forward foreign currency exchange contracts to manage market risks associated with the fluctuations in foreign currency exchange rates and minimize credit exposure by limiting counterparties to nationally recognized financial institutions.

As of December 31, 2019, the Company had foreign exchange contracts outstanding of approximately 1.0 million Euro, which will be valid through March 2020. At December 31, 2018, the Company had contracts outstanding of approximately 3.2 million Euro at fixed rates. The contracts outstanding at December 31, 2019 have expired on various dates from January through March 2020.

##### *Interest Rate Risk Management*

As discussed in Note 13, the Company entered into a term loan to finance the acquisition of True North in May 2018, and subsequently DP Engineering, which was later amended on June 28, 2019, January 7, 2020 and April 17, 2020. The loan bears interest at adjusted one-month LIBOR plus a margin ranging between 2% and 2.75% depending on the overall leverage ratio of the Company. As part of our overall risk management policies, in June 2018, the Company entered into a pay-fixed, receive-floating interest rate swap contract with a notional amount of \$9.0 million to reduce the impact associated with interest rate fluctuations. The notional value amortizes monthly in equal amounts based on the five-year principal repayment terms. The terms of the swap require the Company to pay interest on the basis of a fixed rate of 3.02%, and GSE will receive interest on the basis of one-month USD LIBOR.

The Company reports all derivatives at fair value. These contracts are recognized as either assets or liabilities, depending upon the derivative's fair value. The estimated net fair values of the derivative contracts on the consolidated balance sheets are as follows:

<i>(in thousands)</i>	<b>December 31,</b>	
	<b>2019</b>	<b>2018</b>
<i>Asset derivatives</i>		
Prepaid expenses and other current assets	\$ 49	\$ 43
	<u>49</u>	<u>43</u>
<i>Liability derivatives</i>		
Other liabilities	(160)	(103)
	<u>(160)</u>	<u>(103)</u>
Net fair value	<u>\$ (111)</u>	<u>\$ (60)</u>

The Company has not designated the derivative contracts as hedges. The changes in the fair value of the derivative contracts are included in (loss) gain on derivative instruments, net, in the consolidated statements of operations.

The foreign currency denominated contract receivables, billings in excess of revenue earned, and subcontractor accruals that are related to the outstanding foreign exchange contracts are remeasured at the end of each period into the functional currency using the current exchange rate at the end of the period. The gain or loss resulting from such remeasurement is also included in (loss) gain on derivative instruments, net, in the consolidated statements of operations.

For the years ended December 31, 2019 and 2018, the Company recognized a net (loss) gain on its derivative instruments as outlined below:

<i>(in thousands)</i>	<b>Years ended December 31,</b>	
	<b>2019</b>	<b>2018</b>
Foreign exchange contracts- change in fair value	\$ 6	\$ (150)

Interest rate swap - change in fair value	(57)	(103)
Remeasurement of related contract receivables and billings in excess of revenue earned	38	(97)
	<u>\$ (13)</u>	<u>\$ (350)</u>

## 15. Income Taxes

The consolidated income before income taxes, by domestic and foreign sources, is as follows:

(in thousands)

	Years ended December 31,	
	2019	2018
Domestic	\$ (6,671)	\$ 2,512
Foreign	319	(1,735)
Total	<u>\$ (6,352)</u>	<u>\$ 777</u>

The provision for income taxes is as follows:

(in thousands)

	Years ended December 31,	
	2019	2018
Current:		
Federal	\$ (30)	\$ (6)
State	60	259
Foreign	354	234
Subtotal	<u>384</u>	<u>487</u>
Deferred:		
Federal	4,686	600
State	663	67
Foreign	-	(23)
Subtotal	<u>5,349</u>	<u>644</u>
Total	<u>\$ 5,733</u>	<u>\$ 1,131</u>

The effective income tax rate for the years ended December 31, 2019 and 2018 differed from the statutory federal income tax rate as presented below:

	Effective Tax Rate percentage	
	Years ended December 31,	
	2019	2018
Statutory federal income tax rate	21.0%	21.0%
State income taxes, net of federal tax benefit	(12.1)%	30.1%
Effect of foreign operations	(0.3)%	(2.1)%
Change in valuation allowance	(93.1)%	(43.6)%
Meals and Entertainment	(1.4)%	10.0%
Stock based compensation	(1.4)%	(6.9)%
Other permanent differences	(0.6)%	0.4%
Uncertain Tax Positions	0.9%	46.3%
Change in tax rate	0.0%	(2.8)%
Expired stock options	0.0%	50.7%
Change in APB 23	0.0%	(4.4)%
Prior year reconciling items	(3.3)%	(2.4)%
Expiration of capital Loss	0.0%	49.3%
Effective tax rate	<u>(90.3)%</u>	<u>145.6%</u>

The difference between the effective rate and statutory rate in 2019 primarily resulted from the recognition of a valuation allowance, permanent differences, accruals related to uncertain tax positions for certain foreign tax contingencies and revenue recognition, and return to provision true-ups. The difference between the effective tax rate and statutory rate in 2018 primarily resulted from permanent differences, the write-off of the stock option deferred tax asset due to expirations, accruals related to uncertain tax positions for certain foreign tax contingencies and revenue recognition, expiration of capital loss, and return to provision true-ups.

Deferred income taxes arise from temporary differences between the tax bases of assets and liabilities and their reported amounts in the consolidated financial statements. A summary of the tax effect of the significant components of the deferred income tax assets and liabilities is as follows:

(in thousands)

	As of December 31,	
	2019	2018
Deferred tax assets:		
Net operating loss carryforwards	\$ 4,396	\$ 4,074
Accruals	247	760
Reserves	408	479

Alternative minimum tax credit carryforwards	126	213
Stock-based compensation expense	539	563
Intangible assets	1,021	674
Goodwill	1,037	-
Operating lease liabilities	998	-
Other	464	324
Total deferred tax assets	9,236	7,087
Valuation allowance	(7,576)	(756)
Total deferred tax assets less valuation allowance	1,660	6,331
Deferred tax liabilities:		
Undistributed earnings of foreign subsidiary	-	(103)
Software development costs	(161)	(163)
Fixed assets	(7)	(44)
Intangible assets	(22)	-
Indefinite-lived intangibles	(728)	(525)
Operating lease - right of use assets	(510)	-
Other	(175)	(138)
Total deferred tax liabilities	(1,603)	(973)
Net deferred tax assets	\$ 57	\$ 5,358

Deferred tax liabilities are included in “Other Liabilities” on the consolidated balance sheets. As of December 31, 2018, there was a deferred tax liability related to the operations in India. As a result of the sale of the India subsidiary during 2019, there is no longer a deferred tax liability as of December 31, 2019.

The Company files tax returns in the United States federal jurisdiction and in several state and foreign jurisdictions. Because of the net operating loss carryforwards, the Company is subject to U.S. federal and state income tax examinations for tax years 2000, and forward, and is subject to foreign tax examinations by tax authorities for the years 2014 and forward. Open tax years related to state and foreign jurisdictions remain subject to examination but are not considered material to our financial position, results of operations or cash flows.

In assessing the realizability of deferred tax assets, management considers whether it is more likely than not that some or all of the deferred tax assets will not be realized. The Company’s ability to realize its deferred tax assets depends primarily upon the preponderance of positive evidence that could be demonstrated by three year cumulative positive earnings, reversal of existing deferred temporary differences, and generation of sufficient future taxable income to allow for the utilization of deductible temporary differences.

As of each reporting date, the Company’s management considers new evidence, both positive and negative, that could impact management’s view with regard to the future realization of deferred tax assets to estimate if sufficient future taxable income will be generated to use the existing deferred tax assets. The analysis is performed on a jurisdiction by jurisdiction basis. The Company provides forward forecasting which is incorporated into the scheduling analysis to support realization of the deferred tax assets.

The Company performed a detailed analysis of the valuation allowance position for its worldwide deferred tax assets. Both objectively verifiable positive and negative evidence are considered in the analysis. When analyzing the need for a valuation allowance, the Company first looks to the history of cumulative income or losses and three years is generally considered a reliable measure of historical earnings.

At September 30, 2019, the Company relied upon the strength of its three year cumulative positive core earnings and the projection of future taxable income in the U.S., both of which supported the realization of all of the U.S. deferred tax assets. At this time, the Company determined that a valuation allowance in the U.S. was not appropriate.

Since the third quarter analysis, the U.S. three year cumulative positive core earnings has decreased substantially. Furthermore, due to substantial doubt about the entity’s ability to continue as a going concern, the Company no longer feels that it can rely upon forecasted future earnings and its impact on future taxable income in the valuation allowance analysis. Accordingly, the Company has determined that it does not have sufficient positive, objectively verifiable evidence to substantiate the realizability of the U.S. deferred tax assets at December 31, 2019 and therefore a valuation allowance is appropriate at this time on its U.S. deferred tax assets in the amount of \$6.9 million, with the exception of its alternative minimum tax credit that will be refunded at the filing of its 2019 U.S. income tax return.

Due to a history of losses in the U.K. and Sweden and the inability to rely upon forecasted future earnings in China and Slovakia due to the going concern opinion, the Company does not have sufficient positive, objectively verifiable evidence to substantiate the recovery of the deferred tax assets for its U.K., Swedish, and Chinese deferred tax assets at December 31, 2019. Accordingly, a full valuation allowance of \$0.7 million has been established on these deferred tax assets, predominantly comprised of net operating losses.

At December 31, 2019, the Company’s largest consolidated deferred tax asset was \$5.3 million of net operating losses, excluding the impact of uncertain tax provisions. It primarily relates to a U.S. Federal net operating loss carryforward of \$4.0 million net (\$19.2 million gross). \$3.9 million net (\$18.5 million gross) of the net operating loss carryforward expires in various amounts between 2023 and 2037; \$0.1 million net (\$0.7 million gross) of the net operating loss carryforward is an indefinite lived deferred tax asset. The net operating loss deferred tax asset also includes \$0.7 million net of state net operating losses. \$0.5 million net of the state net operating loss carryforwards expire in various amounts through 2039; \$0.2 million of the state net operating loss is an indefinite lived deferred tax asset.

The net operating loss deferred tax asset also includes \$0.6 million net (\$2.8 million gross) of net operating losses from international operations which is an indefinite lived deferred tax asset.

As of December 31, 2019 and 2018, the Company's consolidated cash and cash equivalents totaled \$11.7 million and \$12.1 million, respectively, including cash and cash equivalents held at non-U.S. entities totaling \$4.4 million and \$4.7 million, respectively. The non-U.S. entities include operating subsidiaries located in China, United Kingdom, Sweden and Slovakia. Of these, the Company does not assert permanent reinvestment in the UK, Sweden or Slovakia. Accordingly, the Company analyzed the cumulative earnings and profits and determined no US deferred liability exists given aggregated accumulated deficits. Undistributed earnings in China are considered indefinitely reinvested as of December 31, 2019, to fund the Company's ongoing international operations. If the Company were to repatriate funds from China, the Company would not incur any tax due to an accumulated earnings and profits deficit.

The Company has made an entity classification (CTB) election to treat GSE UK as a disregarded entity effective January 1, 2018. Therefore, as of January 1, 2018, GSE UK is treated as a branch of the US for tax purposes. Accordingly, GSE UK's 2019 activity has been included in the US Company's income tax provision.

#### Uncertain Tax Positions

During 2019 and 2018, the Company recorded tax liabilities for certain foreign tax contingencies. The Company recorded these uncertain tax positions in other current liabilities on the consolidated balance sheets.

During 2018, the Company recorded a tax liability for an uncertain tax position related to revenue recognition in the US. The uncertain tax position is recorded as a component of current and deferred liability. An accounting method change was filed with the 2018 tax return, accordingly, the uncertain tax position related to revenue recognition has been reversed in 2019.

The following table outlines the Company's uncertain tax liabilities, including accrued interest and penalties for each jurisdiction:

(in thousands)	China		Ukraine		South Korea		U.S.		Total
	Tax	Interest and Penalties	Tax	Interest and Penalties	Tax	Interest and Penalties	Tax	Interest and Penalties	
Balance, January 1, 2018	\$ 216	\$ 262	\$ 100	\$ 28	\$ 341	\$ 45	\$ 833	-	\$ 1,825
Increases	-	23	-	44	120	66	163	4	420
Decreases	12	-	18	-	-	-	-	-	30
Balance, December 31, 2018	\$ 204	\$ 285	\$ 82	\$ 72	\$ 461	\$ 111	\$ 996	\$ 4	\$ 2,215
Increases	-	33	-	-	93	67	-	2	195
Decreases	3	-	4	12	-	-	203	-	222
Balance, December 31, 2019	\$ 201	\$ 318	\$ 78	\$ 60	\$ 554	\$ 178	\$ 793	\$ 6	\$ 2,188

## 16. Capital Stock

The Company's charter authorizes 62,000,000 total shares of stock, of which 60,000,000 shares have been designated as common stock and 2,000,000 are designated as preferred stock. The Board of Directors has the authority to establish one or more classes of preferred stock and to determine, within any class of preferred stock, the preferences, rights and other terms of such class.

As of December 31, 2019, the Company has reserved 5,900,759 shares of common stock for issuance; 5,000 are reserved for shares upon exercise of outstanding stock options and 1,951,208 are reserved for shares upon vesting of restricted stock units. The Company has 1,599,241 shares available for future grants under the Company's 1995 Long-Term Incentive Plan.

## 17. Stock-Based Compensation

### Long-term incentive plan

During 1995, the Company established the 1995 Long-Term Incentive Stock Option Plan (the Plan), which permits the granting of stock options (including incentive stock options and nonqualified stock options) stock appreciation rights, restricted or unrestricted stock awards, phantom stock, performance awards or any combination of these to employees, directors or consultants. The Plan expires on April 21, 2026; the total number of shares that could be issued under the Plan is 7,500,000. As of December 31, 2019, 4,174,981 shares have been issued under the Plan, 5,000 stock options and 1,951,208 restricted stock units (RSUs) were outstanding under the Plan, while 1,599,241 shares remain for future grants under the Plan.

The Company recognizes compensation expense on a pro rata straight-line basis over the requisite service period for stock-based compensation awards with both graded and cliff vesting terms. The Company recognizes the cumulative effect of a change in the number of awards expected to vest in compensation expense in the period of change. The Company has not capitalized any portion of its stock-based compensation. The Company's forfeiture rate is based on actuals.

During the years ended December 31, 2019 and 2018, the Company recognized \$1.4 million and \$1.5 million, respectively, of stock-based compensation expense under the fair value method. Accordingly, the Company recognized associated deferred income tax expense (benefits) of \$86,000 and \$(53,000), respectively, during the years ended December 31, 2019 and 2018. During the years ended December 31, 2019 and 2018, there were approximately \$93,000 and \$142,000 of stock-based compensation expense related to the change in fair value of cash-settled RSUs, which the Company accounts for as a liability.

### Stock options

Options to purchase shares of the Company's common stock under the Plan expire in either seven years or ten years from the date of grant and become exercisable in three, five, or seven installments with a certain percentage of options vesting on the first anniversary of the grant date and additional options vesting on each of the subsequent anniversaries of the grant date, subject to acceleration under certain circumstances.

Information with respect to stock option activity as of and for the year ended December 31, 2019 is as follows:

	Number of Shares	Weighted Average Exercise Price	Aggregate Intrinsic Value (in thousands)	Weighted Average Remaining Contractual Life (Years)
Options outstanding at January 1, 2019	55,000	\$ 1.87		
Options granted	-	-		
Options exercised	(50,000)	1.89		
Options forfeited	-	-		
Options outstanding at December 31, 2019	<u>5,000</u>	1.65	\$ -	0.87
Options expected to vest	<u>-</u>	-	\$ -	-
Options exercisable at December 31, 2019	<u>5,000</u>	\$ -	\$ -	-

Information with respect to stock option activity as of and for the year ended December 31, 2018 is as follows:

	Number of Shares	Weighted Average Exercise Price	Aggregate Intrinsic Value (in thousands)	Weighted Average Remaining Contractual Life (Years)
Options outstanding at January 1, 2018	1,046,833	\$ 3.33		
Options granted	-	-		
Options exercised	(486,500)	1.88		
Options forfeited	(505,333)	4.89		
Options outstanding at December 31, 2018	<u>55,000</u>	1.87	\$ 17	2.08
Options expected to vest	<u>-</u>	-	\$ -	-
Options exercisable at December 31, 2018	<u>55,000</u>	\$ -	\$ -	-

The Company did not grant stock options during the years ended December 31, 2019, and 2018, and the number of options vested were zero and 24,000 respectively.

The Company received cash for the exercise price associated with stock options exercised of \$127,000 and \$136,000 during the years ended December 31, 2019 and 2018, respectively. The total intrinsic value realized by participants on stock options exercised was \$0 and \$701,318 during the years ended December 31, 2019 and 2018, respectively.

### Restricted Stock Units

During the years ended December 31, 2019 and 2018, the Company issued RSUs to employees which vest upon the achievement of specific market-based or time-based measures. The fair value for RSU's is calculated based on the stock price on the grant date and expensed ratably over the requisite service period, which ranges between one year and five years. The following table summarizes the information about vested and unvested restricted stock units for the years ended December 31, 2019 and 2018.

	Number of Shares	Weighted Average Fair Value
Nonvested RSUs at January 1, 2018	1,634,663	\$ 1.96
RSUs granted	428,526	3.23
RSUs forfeited	(140,997)	2.47
RSUs vested	(350,667)	3.30
Nonvested RSUs at December 31, 2018	<u>1,571,525</u>	<u>\$ 1.96</u>
Nonvested RSUs at January 1, 2019	1,571,525	\$ 1.96
RSUs granted	918,459	2.56
RSUs forfeited	(64,172)	3.12
RSUs vested	(452,087)	3.30
Nonvested RSUs at December 31, 2019	<u>1,973,725</u>	<u>\$ 1.49</u>

As of December 31, 2019, the Company had \$0.5 million of unrecognized compensation expense related to the RSUs expected to be recognized on a pro-rata straight line basis over a weighted average remaining service period of approximately 0.98 years.

### 18. Leases

The Company maintains leases of office facilities and equipment. Leases generally have remaining terms of one year to five years, whereas leases with an initial term of twelve months or less are not recorded on the consolidated balance sheets. The Company recognizes lease expense for minimum lease payments on a straight-line basis over the term of the lease. Certain leases include options to renew or terminate. Renewal options are exercisable per the discretion of the Company and vary based on the nature of each lease, with renewal periods generally ranging from one year to five years. The term of the lease includes renewal periods only if the Company is reasonably certain that it will exercise the renewal option. When determining if a renewal option is reasonably certain of being exercised, the Company considers several factors, including but not limited to, the cost of moving to another location, the cost of disruption to operations, whether the purpose or location of the leased asset is unique and the contractual terms associated with extending the lease.

Upon the adoption of the new lease standard ASU 2016-02, on January 1, 2019, the Company elected the package of practical expedients permitted under the transition guidance within the amended guidance, which among other things, allowed registrants to carry forward historical lease classification. Accordingly, all existing leases that were classified as operating leases by the Company historically, were classified as operating leases.

Operating lease ROU assets and operating lease liabilities are recognized based on the present value of the future minimum lease payments over the lease term at commencement date. The operating lease ROU assets represent the lease liability, plus any lease payments made at or before the commencement date, less any lease incentives received. The Company's real estate leases, which are comprised primarily of office spaces, represent a majority of the lease liability. The majority of our lease payments are fixed, although an immaterial portion of payments are variable in nature. Variable lease payments vary based on changes in facts and circumstances related to the use of the ROU assets and are recorded as incurred. The Company uses an incremental borrowing rate based on rates available at commencement in determining the present value of future payments.

The Company has lease agreements with lease and non-lease components, which are accounted for as a single lease component. The Company applies a portfolio approach to effectively account for the operating lease ROU assets and liabilities.

#### Lease abandonment

As discussed in Note 6, as of December 31, 2019, management decided to abandon, a portion of several operating lease right of use lease assets in long idled space in our Sykesville office and in DP Engineering's Fort Worth office. This was decided as part of the on-going restructuring plans to right size the organization. Management took steps to insure the abandoned space was separated from the remaining in use space, end access of all employees to the abandoned sections, and remove any remaining office furniture assets. We applied the abandonment guidance in ASC 360-10-35. We believe "abandonment" means ceasing to use the underlying asset and lacking either the intent or the ability to sublease the underlying asset. Accordingly, lease abandonment restructuring charges incurred relating to the ROU assets for the year ended December 31, 2019 totaled \$1.5 million.

Lease contracts are evaluated at inception to determine whether they contain a lease, where the Company obtains the right to control an identified asset. The following table summarizes the classification of operating ROU assets and lease liabilities on the consolidated balance sheets (in thousands):

Operating Leases Leased Assets	Classification	<u>December 31, 2019</u>
-----------------------------------	----------------	------------------------------

Operating lease - right of use assets	Long term assets	\$ 2,215
<b>Lease Liabilities</b>		
Operating lease liabilities - Current	Other current liabilities	1,153
Operating lease liabilities	Long term liabilities	3,000
		<u>\$ 4,153</u>

The Company executed a sublease agreement with a tenant to rent out 3,650 square feet from the lease at its Sykesville office on May 1, 2019. This agreement is in addition to the 3,822 of square feet previously subleased, which was entered into on April 1, 2017. The sublease does not relieve the Company of its primary lease obligation. The sublease agreements are both considered operating leases, maintaining the historical classification of the underlying lease. The Company does not recognize any underlying assets for the subleases as a lessor of operating leases. The net amount received from the sublease is recorded within selling, general and administrative expenses.

The table below summarizes the lease income and expenses recorded in the consolidated statements of operations incurred year to date ended December 31, 2019, (in thousands):

			<b>Twelve months ended December 31, 2019</b>
	<b>Lease Cost</b>	<b>Classification</b>	
Operating lease cost (1)		Selling, general and administrative expenses	\$ 1,112
Short-term leases costs (2)		Selling, general and administrative expenses	121
Sublease income (3)		Selling, general and administrative expenses	(107)
Net lease cost			<u>\$ 1,126</u>

(1) Includes variable lease costs which are immaterial.

(2) Include leases maturing less than twelve months from the report date.

(3) Sublease portfolio consists of 2 tenants, which sublease parts of our office located at 1332 Londontown Blvd, Suite 200, Sykesville, MD.

The Company is obligated under certain noncancelable operating leases for office facilities and equipment. Future minimum lease payments under noncancelable operating leases as of December 31, 2019 are as follows:

	<b>Gross Future Minimum Lease Payments</b>
2020	\$ 1,335
2021	1,293
2022	1,184
2023	622
2024	106
Thereafter	-
Total	<u>\$ 4,540</u>
Less: Interest	387
Present value of lease payments	<u>\$ 4,153</u>

The Company has calculated the weighted-average remaining lease term, presented in years below, and the weighted-average discount rate for our operating leases. As noted in our lease accounting policy, the Company uses the incremental borrowing rate as the lease discount rate:

<b>Lease Term and Discount Rate</b>	<b>Twelve months ended December 31, 2019</b>
Weighted-average remaining lease term (years)	
Operating leases	3.51
Weighted-average discount rate	
Operating leases	5.00%

The table below sets out the classification of lease payments in the consolidated statement of cash flows. The ROU assets obtained in exchange for operating lease liabilities represent new operating leases obtained through our business combination during the year to date ended December 31, 2019:

	<b>Twelve months ended December 31, 2019</b>
<b>Other Information</b>	
- Operating cash flows used in operating leases	\$ 1,275
Cash paid for amounts included in measurement of liabilities	<u>1,275</u>



## 19. Employee Benefits

The Company has a qualified defined contribution plan that covers all U.S. employees under Section 401(k) of the Internal Revenue Code. Under this plan, the Company's stipulated basic contribution matches a portion of the participants' contributions based upon a defined schedule for GSE Performance Improvement Solutions employees. The Company's contributions to the plan were approximately \$290,000 and \$309,000 for the years ended December 31, 2019 and 2018, respectively.

## 20. Segment Information

The Company has two reportable business segments.

The Performance Improvement Solutions segment provides simulation, training and engineering products and services delivered across the breadth of industries we serve. Solutions include simulation for both training and engineering applications. Example engineering services include, but are not limited to, plant design verification and validation, thermal performance evaluation and optimization programs, and engineering programs for plants for ASME code and ASME Section XI. The Company provides these services across all market segments. Example training applications include turnkey and custom training services. Contract terms are typically less than two years.

The Nuclear Industry Training and Consulting segment provides specialized workforce solutions primarily to the nuclear industry, working at clients' facilities. This business is managed through our Hyperspring and Absolute subsidiaries. The business model, management focus, margins and other factors clearly separate this business line from the rest of the GSE product and service portfolio.

On February 15, 2019, through our wholly-owned subsidiary GSE Performance Solutions, Inc., the Company entered into the DP Engineering Purchase Agreement, to purchase 100% of the membership interests in DP Engineering. DP Engineering is a provider of value-added technical engineering solutions and consulting services to nuclear power plants with an emphasis on preparation and implementation of design modifications during plant outages. For reporting purposes, DP Engineering is included in our Performance Improvement Solutions segment due to similarities in services provided including engineering solutions and implementation of design modifications to the nuclear power sector.

On May 11, 2018, GSE, through Performance Solutions acquired True North. True North is a provider of technical engineering solutions to nuclear and fossil fuel power plants with an emphasis on regulatory-driven ASME code programs. The acquisition of True North is expected to broaden our engineering services offering, expand our relationships with several of the largest nuclear energy providers in the United States, and add a highly specialized, complementary talent pool to our employee base. For reporting purposes, True North is included in our Performance Improvement Solutions segment due to similarities in services provided including technical engineering solutions to the nuclear and fossil fuel power sector.

In September 20, 2017, the Company acquired Absolute. Absolute is a provider of technical consulting and staffing solutions to the global nuclear power industry and employs approximately 160 professionals with expertise in procedures writing, engineering, technical support, project management, training, project controls, and corrective actions. This acquisition brings a natural adjacency to GSE, fits well with our growth strategy, and benefits our customers from expanded capabilities and offerings. For reporting purposes, Absolute was aggregated with Hyperspring into our Nuclear Industry Training and Consulting segment due to similarities in services provided including training and staff augmentation to the nuclear energy sector. In addition, both entities report to the same management team and share support staff such as sales, recruiting and business development. As such, 100% of the goodwill acquired was allocated to the Nuclear Industry Training and Consulting segment.

The following table sets forth the revenue and operating results attributable to each reportable segment and includes a reconciliation of segment revenue to consolidated revenue and operating results to consolidated income before income tax expense (benefit). Inter-segment revenue is eliminated in consolidation and is not significant.

(in thousands)

	<b>Years ended December 31,</b>	
	<b>2019</b>	<b>2018</b>
Revenue:		
Performance Improvement Solutions	\$ 45,776	\$ 42,954
Nuclear Industry Training and Consulting	37,199	49,295
	<u>\$ 82,975</u>	<u>\$ 92,249</u>
Depreciation:		
Performance Improvement Solutions	\$ 345	\$ 385
Nuclear Industry Training and Consulting	18	130
	<u>\$ 363</u>	<u>\$ 515</u>
Amortization of definite-lived intangible assets:		
Performance Improvement Solutions	\$ 1,871	\$ 898
Nuclear Industry Training and Consulting	529	714
	<u>\$ 2,400</u>	<u>\$ 1,612</u>
Operating (loss) income		
Performance Improvement Solutions	\$ (5,802)	\$ 2,640
Nuclear Industry Training and Consulting	(1,617)	(1,274)
Operating (loss) income	<u>\$ (7,419)</u>	<u>\$ 1,366</u>

Interest expense	(988)	(268)
Loss on derivative instruments	(13)	(350)
Other income (expense), net	2,068	29
Income (loss) before income taxes	<u>\$ (6,352)</u>	<u>\$ 777</u>

Additional information relating to segments is as follows:

(in thousands)

	December 31,	
	2019	2018
Performance Improvement Solutions	\$ 41,550	\$ 40,353
Nuclear Industry Training and Consulting	16,959	21,087
Total assets	<u>\$ 58,509</u>	<u>\$ 61,440</u>

For the years ended December 31, 2019 and 2018, 90% and 91%, respectively, of the Company's consolidated revenue was from customers in the nuclear power industry. The Company designs, develops and delivers business and technology solutions to the energy industry worldwide. Revenue, operating income (loss) and total assets for the Company's United States, European, and Asian subsidiaries as of and for the years ended December 31, 2019 and 2018 are as follows:

(in thousands)

	Year ended December 31, 2019				
	United States	Europe	Asia	Eliminations	Consolidated
Revenue	\$ 81,597	\$ -	\$ 1,378	\$ -	\$ 82,975
Transfers between geographic locations	623	-	124	(747)	-
Total revenue	<u>\$ 82,220</u>	<u>\$ -</u>	<u>\$ 1,502</u>	<u>\$ (747)</u>	<u>\$ 82,975</u>
Operating income (loss)	<u>\$ (7,710)</u>	<u>\$ 54</u>	<u>\$ 237</u>	<u>\$ -</u>	<u>\$ (7,419)</u>
Total assets, at December 31	<u>\$ 184,115</u>	<u>\$ 3,526</u>	<u>\$ 2,805</u>	<u>\$ (131,937)</u>	<u>\$ 58,509</u>

(in thousands)

	Year ended December 31, 2018				
	United States	Europe	Asia	Eliminations	Consolidated
Revenue	\$ 88,979	\$ 2,150	\$ 1,120	\$ -	\$ 92,249
Transfers between geographic locations	2,046	-	199	(2,245)	-
Total revenue	<u>\$ 91,025</u>	<u>\$ 2,150</u>	<u>\$ 1,319</u>	<u>\$ (2,245)</u>	<u>\$ 92,249</u>
Operating income (loss)	<u>\$ 2,902</u>	<u>\$ (1,116)</u>	<u>\$ (420)</u>	<u>\$ -</u>	<u>\$ 1,366</u>
Total assets, at December 31	<u>\$ 171,206</u>	<u>\$ 3,893</u>	<u>\$ 3,592</u>	<u>\$ (117,251)</u>	<u>\$ 61,440</u>

Revenues by geographic location above are attributed to the contracting entity. Therefore, revenues from a foreign customer that contracted directly with our U.S. entity are included in revenues from the United States. All revenues in Asia were attributable to our Chinese subsidiary. In Europe, total revenues for the year ended December 31, 2019 were zero due to the Sweden and UK office closures in 2018.

Alternatively, revenues from customers domiciled in foreign countries were approximately 16% and 15%, of the Company's consolidated 2019 and 2018 revenue, respectively. Revenues from foreign countries where our customers reside were all individually less than 10% of the Company's consolidated revenues during 2019 and 2018.

## 21. Supplemental Disclosure of Cash Flow Information

(in thousands)

	Year ended December 31,	
	2019	2018
Cash paid:		
Interest	\$ 989	\$ 278
Income taxes	<u>\$ 489</u>	<u>\$ 187</u>

## 22. Non-consolidated Variable Interest Entity

The Company, through its wholly owned subsidiary DP Engineering, effectively holds a 48% membership interest in DP-NXA Consultants LLC ("DP-NXA").

DP-NXA was established to provide industrial services that include civil, structural, architectural, electrical, fire protection, plumbing, mechanical consulting engineering services to customers. DP-NXA sub-contracts their work to its two owners, NXA Consultants LLC ("NXA"), which owns 52% of the entity, and DP Engineering. DP Engineering and NXA contributed \$48,000 and \$52,000, respectively, for 48% and 52% interest in DP-NXA. DP Engineering recorded the contributed cash as an equity investment.

The Company evaluated the nature of DP Engineering's investment in DP-NXA and determined that DP-NXA is a variable interest entity ("VIE"). Since the Company does not have the power to direct activities that most significantly impact DP-NXA, it cannot be DP-NXA's primary beneficiary. Furthermore, the Company concluded that it did not hold a controlling financial interest in DP-NXA since NXA, the VIE's majority owner, makes all operation and business

decisions. The Company accounts for its investment in DP-NXA using the equity method of accounting due to the fact the Company exerts significant influence with its 48% of membership interest, but does not control the financial and operating decisions.

The Company's maximum exposure to any losses incurred by DP-NXA is limited to its investment. As of December 31, 2019, the Company has not made any additional contributions to DP-NXA and believes its maximum exposure to any losses incurred by DP-NXA was not material. As of December 31, 2019, the Company does not have existing guarantee with or to DP-NXA, or any third-party work contracted with it.

For the year ended December 31, 2019, the carrying value of the investment in DP-NXA was zero. We do not have any investment income or loss from DP-NXA for the year to date ended December 31, 2019.

### **23. Commitments and Contingencies**

#### *Contingencies*

On March 29, 2019, a former employee of Absolute Consulting, Inc., filed a putative class action against Absolute and the Company, *Joyce v. Absolute Consulting Inc.*, case number 1:19 cv 00868 RDB, in the United States District Court for the District of Maryland. The lawsuit alleges that plaintiff was not properly compensated for overtime hours that he worked. The Company has been dismissed from the case, but Absolute intends to vigorously defend this litigation with the Company's assistance and support. The Company is unable to conclude that the likelihood of an unfavorable outcome in this matter is remote or probable, but Absolute continues to deny the allegations and defend the case. Legal defense costs are expensed as incurred.

Per ASC 450 *Accounting for Contingencies* guidance, the Company reviewed potential items and areas where a loss contingency could arise. In the opinion of management, the Company is not a party to any legal proceeding, the outcome of which, in management's opinion, individually or in the aggregate, would have a material effect on the Company's consolidated results of operations, financial position or cash flows. Legal defense costs are expensed as incurred.

### **24. Contingent Consideration**

Acquisitions may include contingent consideration payments based on future financial measures of an acquired company. Under ASC 805, contingent consideration is required to be recognized at fair value as of the acquisition date. We estimate the fair value of these liabilities based on financial projections of the acquired companies and estimated probabilities of achievement. At each reporting date, the contingent consideration obligation is revalued to estimated fair value and changes in fair value subsequent to the acquisition are reflected in income or expense in the consolidated statements of operations and could cause a material impact to our operating results. Changes in the fair value of contingent consideration obligations may result from changes in discount periods and rates, changes in the timing and amount of revenue and/or earnings estimates and changes in probability assumptions with respect to the likelihood of achieving the various earn-out criteria.

In connection with the acquisition of DP Engineering on February 15, 2019, the Company recognized the estimated fair value of contingent consideration for \$1.2 million. During the year ended December 31, 2019, as a result of the triggering event described in Note 7, an impairment test was conducted on DP Engineering's goodwill and definite-lived intangible assets and the Company determined the \$1.2 million of contingent consideration recognized upon acquisition of DP Engineering reduced to zero since the related earn-out payment is no longer expected to be paid. We have recorded this reduction as an offset to selling, general and administrative expenses in unaudited consolidated statements of operations. There was zero contingent liability as of December 31, 2019.

### **25. Subsequent Events**

In December 2019, a novel strain of coronavirus, the COVID-19 virus, was reported in Wuhan, China. On January 30, 2020, the World Health Organization ("WHO") announced a global health emergency because of the COVID-19 virus. On March 11, 2020, the WHO declared the COVID-19 a global pandemic and on March 13, 2020, President Donald J. Trump declared the virus a national emergency in the United States.

As of the date of this report, both the health and economic aspects of COVID-19 are highly fluid and the future course of each is uncertain. As such, the ultimate impact the pandemic will have on the Company's financial condition, liquidity, and future results of operations is highly uncertain and subject to change. Management is actively monitoring the situation on its financial condition, liquidity, operations, industry, supplies, and workforce. Given the highly fluid situation of COVID-19 and the global response to prevent the spread, the Company is unable to estimate the impact of COVID-19 on our business operations, revenues and financial condition in fiscal year 2020.

The outbreak could have a continued material adverse impact on economic and market conditions and trigger a period of global economic slowdown, which could impact the Company's performance and trigger impairment of the Company's goodwill and intangible assets.

The Company is dependent on its workforce being deployed to deliver its services. Social distancing and shelter-in-place directives may impact the Company's ability to deploy its workforce effectively. With regard to our Nuclear Industry Training and Consulting ("NITC") business segment, because of the embedded presence of our on-site workforce, if COVID-19 or a similar outbreak of infectious disease were to prevent our workers from being deployed to the applicable customer site. While expected to be temporary, it may disrupt our NITC service offerings, interrupt performance on our NITC contracts with clients and negatively impact our business, financial condition and results of operations. The safety of our employees, their families and our customers are of primary concern to GSE. The company operates consistent with Federal and State guidelines. As a result, employees almost entirely work from home for the Performance Solutions segment, but for when required to be at the client site for essential project work. When at the client site, employees are required to become thoroughly familiar with client safety guidelines including COVID-19 guidelines. Performance Projects, since they are essential, for the most part continue without pause. For our staff augmentation, we have seen certain contract for NITC customers paused and or delayed as clients shrink their own on-premise workforces to the bare minimum in response to the pandemic; as a result the NITC business has seen its deployed billable employee base contract since the start of the pandemic. NITC still has a meaningful deployment of billable employees at client sites delivering essential services working at the direction of our customers. While we are still receiving new orders, we are experiencing a significant decline in the volume of new orders compared to prior periods. The COVID-19 crisis is still an evolving situation and we are unable to predict when it will end or the future impact it will have on the business and our operations will be. We have experienced current projects in our Performance Solutions and NITC segments being delayed or paused. The Company has been designated as an essential services provider for certain nuclear power and defense customers, which constitute greater than 90% of our business.

We have significant debt principal payments on our term loan due in June 2020, which a decline in sales due to the impact of COVID-19 on consumers, our customers, or our ability to satisfy performance obligations, may lead to the Company seeking debt restructuring and additional sources financing. Additionally, it is probable we fail to meet certain covenant provisions in our debt arrangements due to the impact of COVID-19. On April 17, 2020 the Company entered into an Amendment and Reaffirmation Agreement with the Bank granting certain waivers and improved leverage ratios. We have made principal payments of \$3.0 million in January 2020, \$1.0 million March 2020, and \$0.75 million April 2020 with a scheduled \$1.5 million payment in June 2020.

Although the Company cannot estimate the length or gravity of the impact of the COVID-19 outbreak at this time, as described above, for these reasons and other reasons that may come to light if the pandemic and associated protective or preventative measures expand, we may experience a material adverse effect on our business operations, revenues and financial condition in fiscal year 2020. The Company expects that financial results for the fiscal year 2020 will be lower as a result of COVID-19.

#### *CARES Act*

On March 27, 2020, the CARES Act was enacted. The CARES Act is an emergency economic stimulus package that includes spending and tax breaks to strengthen the United States economy and fund a nationwide effort to curtail the effect of COVID-19. While the CARES Act provides sweeping tax changes in response to the COVID-19 pandemic, some of the more significant provisions which are expected to impact the Company's financial statements include removal of certain limitations on utilization of net operating losses and increasing the ability to deduct interest expense, as well as amending certain provisions of the previously enacted Tax Cuts and Jobs Act. Due to the recent enactment of the CARES Act, the Company is unable to fully quantify the impact, if any, that the CARES Act will have on its financial position, results of operations or cash flows.

The Company has applied for, and has received, funds under the Paycheck Protection Program after the period end in the amount of \$10.0 million serviced by Citizens Bank. The application for these funds requires the Company to, in good faith, certify that the current economic uncertainty made the loan request necessary to support the ongoing operations of the Company. This certification further requires the Company to take into account our current business activity and our ability to access other sources of liquidity sufficient to support ongoing operations in a manner that is not significantly detrimental to the business. The receipt of these funds, and the forgiveness of the loan attendant to these funds, is dependent on the Company having initially qualified for the loan and qualifying for the forgiveness of such loan based on our future adherence to the forgiveness criteria.

**ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE.**

None.

**ITEM 9A. CONTROLS AND PROCEDURES.**

**(a) Evaluation of Disclosure Controls and Procedures**

The Company maintains disclosure controls and procedures that are designed to ensure that information required to be disclosed by it in its reports filed or submitted pursuant to the Securities Exchange Act of 1934, as amended (the Exchange Act), is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms and that information required to be disclosed by the Company in its Exchange Act reports is accumulated and communicated to management, including the Company's Chief Executive Officer (CEO), who is its principal executive officer, and Chief Financial Officer (CFO), who is its principal financial officer, to allow timely decisions regarding required disclosure. Based on an evaluation of our disclosure controls and procedures as of December 31, 2019, our CEO and CFO concluded that, as of such date, our disclosure controls and procedures were effective.

**(b) Management's Annual Report on Internal Control over Financial Reporting**

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Our internal control over financial reporting is a process designed by, or under the supervision of, our CEO and CFO, 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.

Management, including our CEO and CFO, assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2019. In making this assessment, management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control-Integrated Framework (2013). Based on management's assessment, management has concluded that the Company's internal control over financial reporting was not effective as of December 31, 2019 due to the existence of the material weaknesses in internal control over financial reporting described below from management.

*Material Weaknesses Identified*

1. Misapplication of U.S. GAAP guidance in our evaluation of significant or unusual transactions, resulting in a correction of an error in previously issued interim financial statements regarding the calculation and recognition of an impairment charge, creating the risk that the misapplication of other guidance could give rise to material errors;
2. Controls over financial reporting close process including: journal entry review and approval, balance sheet reconciliation preparation and review, and monthly flux variance analysis controls.

Management realizes that two material weaknesses in our internal controls surrounding the evaluation of significant or unusual transactions and financial reporting close process are serious matters and require thoughtful responses. To address the control environment surrounding the evaluation of significant or unusual transactions and application of guidance, management has focused on: (i) hiring dedicated staffing and (ii) revision of controls in application of guidance. Management has hired key management level staffing, a permanent Controller with a background in remediating control environments, and a permanent SEC reporting manager. The Company is performing a review of its controls surrounding the application of guidance with experts in control environments in order to remediate its controls to prevent the misapplication of guidance in the future.

To address the control environment surrounding the financial reporting process, management has implemented substantial remedial measures focusing on four key areas: (i) hiring of dedicated staffing, (ii) shortening the close process, (iii) new revenue process tools and controls, (iv) and expanding its mitigating controls. Management has redesigned the tools used in its monthly flux reviews to evaluate differences at a more precise level in order to identify and prevent errors in the financial close process. In addition to addressing accounting resource turnover, management added additional staffing at the level which will provide the necessary support required to observe all accounting controls and workflow processes to perform the financial reporting controls. Furthermore, management has realigned its accounting resources to optimize workflows and has set in motion a plan to shorten the close cycle. A plan management believes, with the additional staffing resources, will allow for increased time spent on performing analytics and using newly implemented tools to observe control activities necessary to identify errors in our financial statements. Additionally, management has redesigned revenue process controls and the tools used in its monthly reviews to evaluate differences at a more precise level to identify and prevent errors in the financial close process.

**(c) Changes in Internal Control over Financial Reporting**

Other than described above in Item 9A, Controls and Procedures, there were no changes in our internal control over financial reporting identified in connection with the evaluation required by Rule 13a-15(d) and 15d-15(d) of the Exchange Act that occurred during the quarter ended December 31, 2019 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

**ITEM 9B. OTHER INFORMATION.**

Not applicable.

**ITEM 10. DIRECTORS, EXECUTIVE OFFICERS, AND CORPORATE GOVERNANCE**

## INFORMATION ABOUT DIRECTORS AND EXECUTIVE OFFICERS

### Independent Directors

<u>Name</u>		<u>Age</u>	<u>Title(s)</u>
John D. (“Jack”) Fuller	(1)	69	Director, Chairman of the Board of Directors
James H. Stanker	(1)	62	Director, Chair of the Audit Committee
Suresh Sundaram	(1)	55	Director, Chair of the Compensation Committee
J. Bernie Beasley	(1)	68	Director, Chair of the Nominating & Governance Committee
Kathryn O’Connor Gardner	(1)	44	Director

(1) Member of Audit Committee, Compensation Committee, and Nominating & Governance Committee

### Directors who are also Executive Officers

<u>Name</u>	<u>Age</u>	<u>Titles</u>
Kyle J. Loudermilk	52	Chief Executive Officer, President, Director

### Executive Officers

<u>Name</u>	<u>Age</u>	<u>Title(s)</u>
Paul T. Abbott	53	President, Nuclear Industry Training & Consulting Division
Emmett A. Pepe	55	Chief Financial Officer, Treasurer
Daniel W. Pugh	54	Chief Legal and Risk Officer, Secretary

### Background of Directors and Executive Officers and Qualifications of Directors

Biographical information with respect to the directors and executive officers of GSE Systems is set forth below. There are no familial relationships between any directors or executive officers.

#### Independent Directors

**J. Bernie Beasley** – Mr. Beasley has served as an independent director of GSE Systems since June 2018. He currently serves on the Boards of Directors of American Electric Power (NYSE:AEP), one of the largest electric utilities in the United States, delivering electricity to nearly 5.4 million customers in 11 states, and of KCI Technologies, Inc., a privately held engineering services company. His AEP director responsibilities include a five-year membership on the Audit Committee and membership on the Policy Committee, Human Resources and Compensation Committee, and the Nuclear Oversight Committee, of which he is Chairman. On the KCI Technologies board Mr. Beasley serves as Chairman of the Compensation Committee and as a member of the Audit Committee and the Nominating and Governance Committee. He also served from 2014 to 2019 as an independent consultant to Energy Solutions, an international nuclear services company. In this consulting role he served as Chairman of the Nuclear Safety Review Board for the nuclear power stations being decommissioned by Energy Solutions.

Mr. Beasley retired in 2008 as Chairman, President, and Chief Executive Officer of Southern Nuclear Operating Company, the subsidiary of the Southern Company that operates and maintains Southern Company’s nuclear power plants. Mr. Beasley’s career with Southern Nuclear Operating Company began in 1997, where he served as Vice President and later as Executive Vice President and Chief Nuclear Officer before becoming Chairman, President, and CEO. Prior to Southern Nuclear, Mr. Beasley spent 27 years in various roles with Georgia Power Company including Plant General Manager of the Vogtle Nuclear Generating Station.

Mr. Beasley served for five years on the Board of Directors of Energy Solutions (NYSE:ES), a public international nuclear services company with operations throughout the United States, Canada, the United Kingdom, and other countries. As a director on the Energy Solutions board, he served on the Audit Committee and the Compensation Committee, and was involved in the company’s successful sale in 2013 to a private equity group. He also served for three years as an independent nuclear safety and operations expert advising the Tennessee Valley Authority (TVA) Board of Directors. Mr. Beasley’s prior board service also includes the National Nuclear Accrediting Board, the Board of Directors and Executive Committee of the Nuclear Energy Institute (NEI), the Board of Directors of the Foundation for Nuclear Studies, and the Board of Directors of the Southeastern Electric Exchange.

Mr. Beasley graduated from the University of Georgia with a B.S. degree in Engineering. He has held a Senior Reactor Operator’s license from the U.S. Nuclear Regulatory Commission, and he currently holds a Professional Engineering License in the State of Georgia. He served for ten years as a member of the College of Engineering Advisory Board at the University of Georgia for which he also served as its inaugural Chairman. He is a member of both the Georgia Society and the National Society of Professional Engineers.

Mr. Beasley’s extensive experience working in the nuclear power industry enables him to make valuable contributions of business and strategic insight to GSE’s executive leadership team and the Company’s Board of Directors. Mr. Beasley’s broad career experience in corporate, governance, and financial roles enables him to provide leadership expertise as a member of the Board, in the area of corporate governance as Chair of the Company’s Nominating Committee, as a financial expert on the Company’s Audit Committee, and as a member of the Compensation Committee of the Board.

**John D. (“Jack”) Fuller** – Mr. Fuller has served as an independent director of GSE Systems since June 2017 and as Chairman of the Board of Directors since June 2018. Mr. Fuller retired as Chairman of the Board of GE Hitachi Nuclear Energy (“GEH”), a global alliance that is headquartered in Wilmington, North Carolina, in July 2011. Mr. Fuller has two decades of experience in the nuclear industry serving in senior leadership positions covering new power plant development, nuclear services, fuels, enrichment and related nuclear technologies. He previously served as President and CEO of the GEH alliance, CEO of Global Nuclear Fuels and as the CFO for nuclear business of General Electric Company. Mr. Fuller’s previous assignments with GE were in multiple business disciplines of the

Aircraft Engine business, the Aerospace business, and the Information Technology and Energy segments. He initially joined GE in 1972. Mr. Fuller also spent a few years as Corporate Controller of Mead Corporation. In his 40-year career, Mr. Fuller held senior leadership assignments in general management, business development, strategic planning, finance, product development and plant operations.

Mr. Fuller also currently serves as Chairman of the Board of Plantation Village, a non-profit senior living community organization located in Wilmington, North Carolina. Until recently he served as an independent member of the Board of Directors of PaR Systems, LLC, a privately held automation and robotics applications company based in Minneapolis, Minnesota, and on the boards of both the Nuclear Energy Institute in Washington, DC, and the World Nuclear Association in London, England. Prior to his retirement, he was actively engaged in supporting nuclear industry initiatives on a global basis. Mr. Fuller's for-profit and not for profit board roles over the past 16 years have included committee assignments in the areas of finance, audit, quality, compensation development, strategic planning, executive development, and board leadership including service as Chairman of several of these boards. He is a native of northern Ohio, and earned a Bachelor degree in Aeronautics/Math from Miami University, Oxford, Ohio.

Mr. Fuller's broad and deep experience in the nuclear industry enable him to contribute meaningful insight into the Company's business and experience-based strategic guidance to the executive team and his fellow directors. He currently serves as a member of the Audit, Compensation, and Nominating Committees of the Board.

**Kathryn O'Connor Gardner** – Ms. Gardner most recently was a Senior Vice President and Corporate Credit Research Analyst within AllianceBernstein's high-yield research group, focusing on the energy sector. In this role, she oversaw all energy-related investments for traditional high yield portfolios with roughly \$35 billion in assets under management. She was also an Investment Committee Member for the Energy Opportunity Funds at AllianceBernstein. Prior to joining AllianceBernstein in 2016, Ms. Gardner was a Managing Director on the sell-side at Deutsche Bank where she covered industries including energy, automotive and aerospace & defense. Ms. Gardner's Wall Street experience spans more than 20 years, and she also has experience serving as an advisor for startups on strategy, financial analysis and capital market transactions.

Ms. Gardner is a Founding Board Member of the Haas Center for Gender, Equity & Leadership, which seeks to build the economic case for supporting workplace diversity, and is a member of the Haas Dean's Advisory Board, which brings together the school's next generation of leaders. Finally, she sits on the board of the CSNK2A1 Foundation, which is focused on finding a cure for an ultra-rare genetic disorder called Okur-Chung Neurodevelopmental Syndrome. Ms. Gardner holds a BS in economics and a BA in business administration (Walter A. Haas School of Business) from the University of California, Berkeley.

**James H. Stanker** – Mr. Stanker has served as a director of the Company since August 2016. Mr. Stanker has more than 30 years of strategic audit expertise and financial leadership with multinational corporations in the technology, manufacturing, and commercial product industries. Since September 1, 2018, he has served as the chief financial officer of Procesa Pharmaceuticals, Inc., and is currently a visiting professor in the George B. Delaplaine School of Business at Hood College. On August 1, 2016, Mr. Stanker concluded a sixteen-year career at Grant Thornton LLP, where he served in various leadership capacities, including audit partner, professional practice director for the Atlantic Coast market, and global head of audit quality for the Firm's international organization. Prior to Grant Thornton, Mr. Stanker served terms as the Chief Financial Officer of a Nasdaq-listed technology company and as the Chief Financial Officer of a privately-held life science startup. He started his career as an auditor with Touche Ross in the early 1980s. Mr. Stanker earned a Master of Business Administration from California State University, East Bay, and a B.S. degree in Aeronautics from San Jose State University. He is a Certified Public Accountant.

Mr. Stanker's career accomplishments in financial services and audit enables him to provide broad financial expertise and technology leadership as a member of the Board and the Audit, Compensation, and Nominating Committees of the Board, and to play a critical role as a financial expert on, and as Chair of, the Company's Audit Committee.

**Suresh Sundaram, Ph.D.** – Dr. Sundaram has served as a director of the Company since September 2016. Dr. Sundaram has more than 25 years of experience in product development, sales, and marketing, focused on simulation technology. He is currently a GM at Trimble Inc., a publicly traded (Nasdaq: TRMB) positioning, modeling, connectivity, and data analytics technology provider. Prior to Trimble, he was the Chief Product and Marketing Officer at CiBO Technologies, a Cambridge, Massachusetts based startup bringing simulation and data science technology to the agriculture industry; the Senior Vice President – Products and Marketing at Exa Corporation, a publicly-traded simulation software company focused on product engineering solutions, serving as part of the executive management team that successfully sold Exa to Dassault Systèmes in 2017; and held a variety of leadership roles during a twenty-year career at Aspen Technology, a publicly-traded process software company, where most recently he was Senior Vice President of Products and Market Strategy. Dr. Sundaram earned his Master of Science and Ph.D. degrees in Chemical Engineering from the Massachusetts Institute of Technology (MIT) and a Bachelor of Science degree in Chemical Engineering from the Indian Institute of Technology (IIT), Bombay.

Dr. Sundaram brings a wide range of applicable experience and knowledge to his role as a member of the Board, particularly with respect to providing strategic guidance on product development and marketing, and as a member of the Audit, Compensation, and Nominating Committees of the Board. He also contributes his expertise in executive and board compensation and leadership as Chair of the Company's Compensation Committee.

#### **Directors who are also Executive Officers**

**Kyle J. Loudermilk** – Mr. Loudermilk joined the Company in August 2015 as the CEO and President and also serves as a member of the Board of Directors. He is a technology executive whose 25-year career has focused on growing technology companies through organic growth, geographic expansion and acquisitions, creating significant stockholder value along the way.

Mr. Loudermilk was the VP of Operations – Technology from 2013 to 2015 and VP of Corporate Development from 2005 to 2009 at MicroStrategy, a company focused on business intelligence, big data, and mobile identity solutions. From 2009 to 2012 he was the VP of Product Management at Datatel, now known as Ellucian, a firm focused on higher education solutions, growing the company significantly through new product introduction during his tenure. Mr. Loudermilk held management roles including VP of the Design and Simulation Business Unit and VP of R&D/Operations at Aspen Technology. He began his career as a Process Engineer for Mobil Oil Corporation. He earned his B.S. and M.S. from Columbia University in chemical engineering, and is an alumnus of Harvard Business School having completed The General Manager Program.

Mr. Loudermilk's extensive experience in leading and providing strategic guidance to technology driven organizations enables him to contribute valuable perspective and first-hand knowledge as a Board member.

## **Executive Officers**

**Paul T. Abbott** – Mr. Abbott is the President of the Company’s Nuclear Industry Training & Consulting Division. He was a principal of Hyperspring LLC, helping grow that business since 2007, and assumed the role of divisional President in November 2017. Prior to joining Hyperspring, he was a senior reactor operator at two different U.S. nuclear facilities and served in the U.S. Navy. He earned his B.S. in Nuclear Engineering Technology from Excelsior College.

**Emmett A. Pepe** – Mr. Pepe has served as the Company’s Chief Financial Officer and Treasurer since July 2016. From 2012 to 2016, Mr. Pepe had served as Senior Vice President – Finance and worldwide Controller of MicroStrategy, Inc., a publicly-traded enterprise-analytics, mobile, and security software company, overseeing that company’s financial activities including accounting, financial reporting, tax, and treasury. From 2007 to 2012, Mr. Pepe served as Vice President – Accounting and Corporate Controller at BroadSoft, Inc., a software and services company that enables telecommunications service providers to deliver hosted, cloud-based unified communications to their enterprise customers. While at BroadSoft, Mr. Pepe was responsible for overall global accounting, SEC reporting, tax, treasury, human resources, and facilities, and was part of the executive management team that took BroadSoft public in 2010. Mr. Pepe also has held a number of senior financial leadership positions with various other companies including Software AG, webMethods, Inc., British Telecom Inc., Concert Communications Company, and MCI Communications Corporation. Mr. Pepe has a B.S. degree in Accounting from Penn State University and is a Certified Public Accountant.

**Daniel W. Pugh** – Mr. Pugh joined the Company in February 2016 and serves as its Chief Legal and Risk Officer and Corporate Secretary. He is a business attorney with more than 25 years of experience working with technology-enabled software and service companies. Mr. Pugh’s core areas of expertise include operations, transactions, risk management, technology development and commercialization, intellectual property protection, and corporate practices improvement. From October 2010 through January 2016, Mr. Pugh served as General Counsel of ANCILE Solutions, Inc., a leading workforce performance improvement enterprise software company, where he was responsible for all legal and corporate matters and operational risk management. Prior to that he served as General Counsel of Synthetic Genomics, Inc., a biotechnology and biofuels research and development company, and as Counsel to other public and private businesses. His degrees include a S.B. from the Massachusetts Institute of Technology, a J.D. from the University of Maryland Carey School of Law, where he served as Executive Editor of the Maryland Law Review, and a M.B.A. from the University of Maryland Smith School of Business. Mr. Pugh also is a Certified Financial Risk Manager (FRM).

## **CORPORATE GOVERNANCE**

### **The Board of Directors**

The Board oversees the business affairs of the Company, while Management carries out the daily processes, controls and execution of the Company’s long-term strategy. Among the Board’s most significant responsibilities are the oversight of the Company’s long-term strategy, the selection and support of the CEO of the Company, and the annual election of the Company’s executive officers. The Board has the responsibility for establishing broad corporate policies and for the overall performance of the Company. The Board recognizes the importance of ensuring that the Company’s overall business strategy is designed to create long-term value for Company stockholders. As a result, the Board maintains an active oversight role in formulating, planning and implementing the Company’s long-term strategy and has sought to align compensation incentives with that vision. Members of the Board are kept informed of the Company’s business and progress in relation to this long-term strategy by regular communications with the CEO, various reports and documents sent to them, and by way of operating and financial reports made at Board and Committee meetings. The Board regularly considers the progress of and challenges to the Company’s strategy and related risks throughout the year. At each regularly-scheduled Board meeting, the Chairman leads an executive session with the non-employee members of the Board to discuss executive officer performance, the Company’s long-term plans, and strategic and other significant business developments since the last meeting.

In terms of the structure of the Board, the Company’s Certificate of Incorporation provides that the Board is divided into three classes, as nearly equal in number as possible, that serve staggered three-year terms. The stockholders elect at least one class of directors annually. The term of the incumbent Class I directors, John D. (“Jack”) Fuller and James H. Stanker, will conclude at the 2020 annual meeting or when their successors are duly elected and qualify; provided, however, that each of Mr. Fuller and Mr. Stanker have advised the Company that they do not intend to stand for re-election and, in the event that a successor is not duly elected and qualified at the Annual Meeting, each intends to resign effective as of such date. Class II directors (Suresh Sundaram and J. Barnie Beasley) serve until the 2021 annual meeting and their successors are duly elected and qualified, and Class III directors (Kathryn O’Connor Gardner and Kyle J. Loudermilk) serve until the 2022 annual meeting and their successors are duly elected and qualified. The Board believes that the Company continues to be best served by a staggered or classified board as it promotes continuity as the Company pursues its business strategy. Nevertheless, the Board is aware of the concerns related to a staggered Board and, in recent years, has promoted Board refreshment and revitalization.

### **Independence**

The Board has adopted specific director independence criteria, consistent with the NASDAQ listing standards, to assist it in making determinations regarding the independence of its members. The Board considers the independence of its members at least annually. No directors will be deemed to be independent unless the Board affirmatively determines that the director in question has no material relationship with the Company, directly or as an officer, stockholder, member or partner of an organization that has a material relationship with the Company. The Board has determined that no director other than Mr. Loudermilk has a direct or indirect material relationship with the Company, nor does any other director have a direct or indirect material interest in any transaction involving the Company. Every director other than Mr. Loudermilk satisfies the Company’s independence criteria. The Board has further determined that all of the members of the Audit Committee (Messrs. Stanker, Sundaram, Fuller, and Beasley, and Ms. Gardner) meet the applicable heightened standards for audit committee independence.

### **Board Leadership Structure**

Mr. Fuller currently serves as Chairman of the Board of Directors. Mr. Loudermilk currently serves as Chief Executive Officer and President of the Company. The Company believes it is the Chairman’s responsibility to lead the Board of Directors and the Chief Executive Officer’s responsibility to lead the day-to-day operations of the Company. As directors continue to have more oversight responsibility than ever before, the Company believes it is beneficial to have a Chairman whose focus and responsibility is to lead the Board, which allows the Chief Executive Officer to focus on running the Company. This separation of responsibilities ensures that there is no duplication of effort between the Chairman and the Chief Executive Officer. The Company believes this separation of leadership provides strong leadership for its Board, while also positioning its Chief Executive Officer as the leader of the Company in the eyes of customers, employees, and



stockholders.

### **Board's Role in Oversight**

While the Board oversees risk management, Company management is charged with managing risk. The Board and the Audit Committee monitor and evaluate the effectiveness of the Company's internal controls at least annually. Management communicates with the Board, committees, and individual directors on the significant risks identified and how they are being managed. Directors are free to, and indeed often do, communicate directly with senior management. The Board implements its risk oversight function both as a whole and through Committees. The Audit Committee oversees risks related to the Company's financial statements, the financial reporting process, and accounting matters. The Audit Committee oversees the audit function and the Company's ethics programs. The Audit Committee members meet separately with representatives of the Company's independent registered public accounting firm. The Compensation Committee evaluates the risks and rewards associated with the Company's compensation philosophy and programs. The Nominating Committee selects and recommends to the full Board nominees for election as directors. The Nominating Committee also bears responsibility for overseeing corporate governance matters.

### **Board of Director Attendance**

The Board held thirteen meetings during the fiscal year ended December 31, 2019. During the 2019 fiscal year, no director attended less than seventy-five percent (75%) of the aggregate of (1) the total number of meetings of the Board (held during the period for which he or she was a director) and (2) the total number of meetings held by all committee(s) of the Board on which he or she served (during the periods that he or she served on those committees). The Company encourages, but does not require, all of its directors to attend the Annual Meeting of Stockholders, and all directors attended the Annual Meeting in 2019.

### **Committees of the Board of Directors**

The Board has three standing committees: the Audit Committee, the Compensation Committee, and the Nominating and Governance Committee. As a Nasdaq Capital Market listed company, we are subject to the NASDAQ listing standards. The Company is required under the NASDAQ listing standards to have a majority of independent directors and all of the members of the Audit Committee are required to comply with additional, heightened independence standards applicable to a director's service on such committee.

**Audit Committee** – The Audit Committee consists of Ms. Gardner and Messrs. Fuller, Sundaram, Beasley, and Stanker (Chair), each of whom meets the general as well as the heightened independence standards set by applicable SEC rules and the NASDAQ listing standards. In addition, the Board has determined that Mr. Stanker, Ms. Gardner, and Mr. Beasley are “audit committee financial experts” as defined by applicable SEC and NASDAQ rules. The Audit Committee operates under a written charter adopted by the Board. Management is responsible for the Company's internal controls and preparing the Company's consolidated financial statements. The Company's independent registered public accounting firm is responsible for performing an independent audit of the consolidated financial statements in accordance with the standards of the Public Company Accounting Oversight Board and issuing a report thereon and the Committee is responsible for overseeing the conduct of these activities. The Audit Committee appoints and engages the independent registered public accounting firm, reviews with the independent registered public accounting firm the plans and results of the audit engagement, approves professional services provided by the independent registered public accounting firm, reviews the independence of the independent registered public accounting firm and reviews the adequacy of the Company's internal accounting controls. The Audit Committee met nine times during fiscal year 2019. See “Audit Committee Report” below. The Audit Committee Charter is available on our website at [www.gses.com](http://www.gses.com).

**Compensation Committee** – The Compensation Committee consists of Dr. Sundaram (Chair), Mr. Stanker, Mr. Fuller, Mr. Beasley, and Ms. Gardner. Dr. Sundaram, Mr. Stanker, Mr. Fuller, Mr. Beasley, and Ms. Gardner are all “independent” directors as that term is defined by applicable NASDAQ listing standards. The Compensation Committee is responsible for recommending to the full Board the compensation for the Company's executive officers, including the granting of awards under the Company's 1995 Long-Term Incentive Plan, as amended (the “Long-Term Incentive Plan”). The Compensation Committee met five times during fiscal year 2019, and members of the Compensation Committee provided further advice and recommendations to the Board as a whole on Compensation Committee matters at Board meetings. The Compensation Committee operates pursuant to a written Charter which is available on our website at [www.gses.com](http://www.gses.com).

**Nominating and Governance Committee** – The Nominating and Governance Committee consists of Mr. Fuller, Mr. Stanker, Dr. Sundaram, Ms. Gardner, and Mr. Beasley (Chair). All five members are “independent” directors as that term is defined by applicable NASDAQ listing standards. The Nominating Committee selects and recommends to the full Board nominees for election as directors and oversees the Company's corporate governance generally. The Nominating Committee met five times during fiscal year 2019, and members of the Nominating and Governance Committee provided further advice and recommendations to the Board as a whole on Committee matters at Board meetings. The Nominating Committee operates pursuant to a written Charter which is available on our website at [www.gses.com](http://www.gses.com).

### **Enhancements to Corporate Governance**

Led by the Nominating and Governance Committee, the Board of Directors is committed to best practices in corporate governance. The Board believes that good governance enhances stockholder value and goes beyond simply complying with the basic requirements of state law and NASDAQ and SEC rules and regulations. Good governance means taking thoughtful approach to promote integrity, accountability, transparency, and the highest ethical standards. The Board and its Nominating and Governance Committee are committed to having an engaged and independent Board that upholds the strictest ethical standards. During 2019, the Board continued its efforts to analyze existing practices, evaluate best practices, and make improvements through adoption of revised policies and practices to ensure effective governance. The Board anticipates that these efforts will continue to include the following:

**Development of a Board Skills Matrix** – When evaluating each director nominee and the potential needs and composition of the Board as a whole, the Nominating and Governance Committee looks for individuals with the potential to make significant contributions that will enhance the Board's ability to continue to serve the long-term interests of the Company and its stockholders. The Board also self-assesses its own strengths and weaknesses to identify skills that individuals may add to the Board. To that end, the Nominating and Governance Committee has undertaken an effort to identify critical attributes, experiences, qualifications, and skills required of members of the Board to deliver long-term value to the stockholders of the Company. From that list, the Board develops a matrix to ensure each of the identified critical attributes, experiences, qualifications, and skills are adequately represented among the Company's directors. The Nominating and Governance Committee and the Board will regularly review this skills matrix to confirm that it appropriately supports the Company's long-term strategy.

**Board Tenure and Diversity** – As a key component of ensuring that the Board reflects an appropriate mix of attributes, experiences, qualifications, and skills, the Nominating and Governance Committee regularly reviews director diversity, tenure, and succession. In recent years, the Board has experienced significant refreshment as a result of this process, adding new directors each of the past three years. The Committee believes that in future years the Company will benefit from the deep Company knowledge and continuity of longer-tenured directors complemented by the fresh perspectives of newer directors. In future years, relying in part on its developing skills matrix, the Company intends to pursue diversity in all forms to enhance the long-term value of the Company for its stockholders.

**Self-Evaluation** – Beginning in 2019, the Nominating and Governance Committee led an enhanced annual performance evaluation of the Board. Board members completed questionnaires that collected information about the overall effectiveness of the Board and each Board committee together with specific commentary on strengths and weaknesses of these groups. The evaluations were compiled and analyzed both quantitatively and qualitatively, and then discussed in detail within each Board committee and among the full Board. Next, each director was asked to complete a questionnaire assessing the effectiveness of the individual Board members; following compilation and analysis, the Board chairman discussed these results individually with each director as a tool for self-analysis and improvement. The positive outcomes of the 2019 self-evaluation process confirm the Board’s view that self-evaluation of Board and committee performance is an integral part of its commitment to continuous improvement.

**Whistleblower Policies and Ombudsman** – The Board’s enhanced internal reporting and whistleblower mechanisms continued to operate during 2019, providing alternative outlets for complaints within the Company. The Board has taken these steps to ensure that employee concerns and complaints reach the Board, and the Board receives reports from the Company Ethics and Compliance Officer on a quarterly basis.

### **Communications with the Board of Directors**

The Board desires to foster open communications with its stockholders regarding issues of a legitimate business purpose affecting the Company. Under the Board’s supervision, the Company makes a concerted effort to engage with stockholders to ensure that the Board considers their views and address their interests. In addition to meeting with stockholders to discuss performance, strategy, and operations, the Company also engages with its stockholders to solicit their views on matters of corporate governance and other topics. In addition to communicating with stockholders during our proxy season, Mr. Loudermilk, Mr. Pepe, and Mr. Fuller engage with many of our major stockholders to promote a constructive dialogue.

To this end, the Board has adopted policies and procedures to facilitate written communications by stockholders to the Board. Persons wishing to write to our Board, a specific director, a committee of the Board, the Chairman of the Board of Directors, or the non-management directors as a group, should send correspondence to the Corporate Secretary at 1332 Londontown Blvd., Suite 200, Sykesville, Maryland 21784.

The Corporate Secretary will forward to the directors all communications that, in his judgment, are appropriate for consideration by the directors. Examples of communications that would not be appropriate for consideration by the directors include commercial solicitations and matters not relevant to the stockholders, to the functioning of the Board, or to the affairs of the Company. Any correspondence received that is addressed generically to the Board will be forwarded to the Chairman of the Board, with a copy to the Chair of the Audit Committee.

## **CODE OF BUSINESS CONDUCT AND ETHICS**

The Company has adopted a Code of Ethics for the directors, Principal Executive Officers, and Senior Financial Officers of the Company and its subsidiaries, and a Conduct of Business Policy for directors, officers, and employees of the Company and its subsidiaries. It is the Company’s intention to disclose any amendments to or waivers of such Code of Ethics or Conduct of Business Policy on the Company’s website at [www.gses.com](http://www.gses.com). The Company’s Code of Ethics and Conduct of Business Policy is available on the Company’s website at [www.gses.com](http://www.gses.com).

## **SECTION 16(a) BENEFICIAL OWNERSHIP REPORTING COMPLIANCE**

Section 16(a) of the Securities Exchange Act of 1934 requires any person who was one of our executive officers, directors or who owned more than ten percent (10%) of any publicly traded class of our equity securities at any time during the fiscal year (the “Reporting Persons”), to file reports of ownership and changes in ownership of equity securities of the Company with the SEC. These Reporting Persons are required by SEC regulations to furnish the Company with copies of all Section 16(a) filings.

Based solely upon a review of Forms 3 and Forms 4 and amendments thereto furnished to the Company during the most recent fiscal year, and Forms 5 and amendments thereto with respect to its most recent fiscal year, or written representations from certain Reporting Persons that such filings were not required, the Company believes that all forms except for one were filed in a timely manner in 2019; one Form 4 was filed late by one day in March 2019 for Christopher Sorrells.

## **ITEM 11. EXECUTIVE COMPENSATION**

In 2019, the Compensation Committee once again engaged the services of a compensation consultant, Aon Consulting, Inc. (“Aon”), to evaluate the compensation practice of the Company with respect to its Named Executive Officers, benchmark that compensation against similar companies, and offer recommendations as to how the Compensation Committee could align incentive compensation with the Company’s long-term strategy. Aon regularly partners with compensation committees and management teams to help guide their approach to setting executive pay. Aon maintains policies and procedures to avoid conflicts of interest, performs no other work for the Company, and does not trade in the Company’s common stock. There are no business or personal relationships among Aon and the Named Executive Officers or members of the Compensation Committee. As a result of the compensation review process, the Board adopted certain benchmarks with regard to Company performance in 2020 and beyond that the Board believes will best align Executive Compensation with the investment thesis and long-term plan that the Company has articulated to its stockholders.

### **Summary Compensation Table**

The following table sets forth all plan and non-plan compensation awarded to, earned by or paid for all services rendered in all capacities to the Company and its subsidiaries by the Named Executive Officers for each of the last two completed fiscal years. The Named Executive Officers listed in the following table include our principal executive officer (“PEO”) and our two most highly compensated officers other than the PEO.

Name and Principal Position	Year	Annual Compensation		Stock Awards(1)	Non-Equity Incentive Plan Compensation(2)	All Other Compensation	Total
		Salary	Bonus				
Kyle J. Loudermilk Chief Executive Officer	2019	\$ 425,000	\$ -	\$ 691,074	\$ -	\$ 17,161	\$ 1,133,235
	2018	\$ 371,400	\$ -	\$ 270,374	\$ 334,260	\$ 13,465	\$ 989,499
Christopher D. Sorrells Chief Operating Officer	2019	\$ 350,000(3)	\$ -	\$ 414,645	\$ -	\$ 8,664	\$ 685,809
	2018	\$ 307,805	\$ -	\$ 149,351	\$ 277,025	\$ 8,802	\$ 742,983
Emmett A. Pepe Chief Financial Officer	2019	\$ 300,000	\$ -	\$ 276,429	\$ -	\$ 10,874	\$ 587,303
	2018	\$ 265,300	\$ -	\$ 102,999	\$ 191,016	\$ 10,719	\$ 570,034
Paul T. Abbott President, NITC Division	2019	\$ 257,500	\$ 54,262(4)	\$ 25,800	\$ -	\$ 10,086	\$ 347,648
	2018	\$ 250,000	\$ 61,131(4)	\$ -	\$ 125,000	\$ 6,666	\$ 442,797

(1) The amounts in this column reflect the aggregate grant date fair value of RSU awards, as computed in accordance with generally accepted accounting principles, assuming no forfeitures, for awards granted pursuant to the Long-Term Incentive Plan. Assumptions used in the calculation of these amounts are included in Note 17 to the Company’s audited financial statements for the fiscal year ended December 31, 2019, included in the Company’s Annual Report on Form 10-K filed with the Securities and Exchange Commission on June 11, 2020.

(2) Reflects amounts earned under an executive bonus plan approved by the Compensation Committee of the Board of Directors. For 2019, each of Mr. Loudermilk, Mr. Sorrells, and Mr. Pepe were eligible to receive a cash bonus with a potential value up to 100% of the their salary in the event of over-achievement of financial targets, while Mr. Abbott was eligible to receive a cash bonus with a potential value up to 50% of his salary. The Company failed to achieve the minimum financial performance targets set forth in the 2019 executive bonus plan, and therefore the Board of Directors determined that no executive bonuses were payable with respect to 2019.

(3) A portion of this amount was salary continuation pay pursuant to a Separation Agreement, described more fully below.

(4) These amounts reflect quarterly bonus amounts paid to Mr. Abbott during 2018 and 2019 pursuant to a separate Bonus Agreement between the Company and Mr. Abbott dated November 13, 2017.

#### Outstanding Equity Awards at December 31, 2019

The following tables set forth certain information with respect to unexercised options and unvested restricted share unit (“RSU”) awards held by the Named Executive Officers at the end of the fiscal year ended December 31, 2019.

Name	<u>Option Awards</u>		<u>Option Awards</u>		<u>Stock Awards</u>	
	<u>Number of Securities Underlying Unexercised Options at 12/31/2019</u>		<u>Option Exercise Price (\$/share)</u>	<u>Option Expiration Date</u>	<u>Equity Incentive Plan Awards</u>	<u>Market value of RSUs that have not vested (1)</u>
	<u>Exercisable</u>	<u>Un-exercisable</u>			<u>Number of RSUs that have not vested</u>	
Kyle J. Loudermilk	-	-	\$ -	-	658,334	(2) \$ 1,086,251
Christopher D. Sorrells	-	-	\$ -	-	356,430	(3) \$ 588,110
Emmett A. Pepe	-	-	\$ -	-	187,335	(4) \$ 309,103
Paul T. Abbott	-	-	\$ -	-	128,753	(5) \$ 212,442

(1) Market value is based on the closing market price of the Common Stock on the last trading day of the year, December 31, 2019, of \$1.65.

(2) These stock awards vest as follows: (a) 200,000 performance-restricted stock units (“PRSUs”) vest when the volume-weighted average price (“VWAP”) of the Common Stock over a 30-day period exceeds \$4.25 per share; (b) 250,000 PRSUs vest when the VWAP of the Common Stock over a 30-day period exceeds \$6.00 per share, with 70,000 of these PRSUs to be settled in Common Stock and the remaining 180,000 to be settled in cash upon vesting; (c) 14,881 time-restricted stock units (“TRSUs”) vest on each of March 31, 2020, June 30, 2020, September 30, 2020; and December 31, 2020; (d) up to 74,405 PRSUs vest based on the Company’s total revenue earned during fiscal year 2021, with 44,643 vesting upon achievement of the minimum target of \$200 million in total revenue for 2021, up to another 14,881 PRSUs vesting upon achievement of total revenue between \$200 million and \$250 million for 2021, and up to another 14,881 PRSUs vesting upon achievement of total revenue between \$250 million and \$300 million for 2021

(pro-rated in each of the last two cases for 2021 revenue amounts between \$200 million and \$250 million and between \$250 million and \$300 million, respectively; and (e) up to 74,405 PRSUs vest based on the Company's Adjusted EBITDA during fiscal year 2021, with 44,643 vesting upon achievement of the minimum target of \$20 million in Adjusted EBITDA for 2021, up to another 14,881 PRSUs vesting upon achievement of Adjusted EBITDA between \$20 million and \$25 million for 2021, and up to another 14,881 PRSUs vesting upon achievement of Adjusted EBITDA between \$25 million and \$30 million for 2021 (pro-rated in each of the last two cases for 2021 Adjusted EBITDA amounts between \$20 million and \$25 million and between \$25 million and \$30 million, respectively).

(3) These stock awards vest as follows: (a) 125,000 PRSUs vest when the VWAP of the Common Stock over a 30-day period exceeds \$4.25 per share; (b) 160,000 PRSUs vest when the VWAP of the Common Stock over a 30-day period exceeds \$6.00 per share, with 85,000 of these PRSUs to be settled in Common Stock and the remaining 75,000 to be settled in cash upon vesting; and (c) up to 71,430 PRSUs vest, if at all, upon a change of control of the Company on or prior to September 30, 2020, with the actual number of PRSUs that would vest to be calculated based on (i) the ratio of the Company's total revenue earned during the 12-month period prior to the change of control compared to \$250 million, multiplied by 35,715 PRSUs, and (ii) the ratio of the Company's Adjusted EBITDA during the 12-month period prior to the change of control compared to \$25 million, multiplied by 35,715 PRSUs.

(4) These stock awards vest as follows: (a) 48,000 PRSUs vest when the VWAP of the Common Stock over a 30-day period exceeds \$4.25 per share; (b) 56,000 PRSUs vest when the VWAP of the Common Stock over a 30-day period exceeds \$6.00 per share; (c) 5,952 TRSUs vest on each of March 31, 2020, June 30, 2020, and September 30, 2020; (d) 5,955 TRSUs vest on December 31, 2020; (e) up to 29,762 PRSUs vest based on the Company's total revenue earned during fiscal year 2021, with 17,858 vesting upon achievement of the minimum target of \$200 million in total revenue for 2021, up to another 5,952 PRSUs vesting upon achievement of total revenue between \$200 million and \$250 million for 2021, and up to another 5,952 PRSUs vesting upon achievement of total revenue between \$250 million and \$300 million for 2021 (pro-rated in each of the last two cases for 2021 revenue amounts between \$200 million and \$250 million and between \$250 million and \$300 million, respectively; and (f) up to 29,762 PRSUs vest based on the Company's Adjusted EBITDA during fiscal year 2021, with 17,858 vesting upon achievement of the minimum target of \$20 million in Adjusted EBITDA for 2021, up to another 5,952 PRSUs vesting upon achievement of Adjusted EBITDA between \$20 million and \$25 million for 2021, and up to another 5,952 PRSUs vesting upon achievement of Adjusted EBITDA between \$25 million and \$30 million for 2021 (pro-rated in each of the last two cases for 2021 Adjusted EBITDA amounts between \$20 million and \$25 million and between \$25 million and \$30 million, respectively).

(5) These stock awards vest as follows: (a) 50,000 PRSUs vest when the VWAP of the Common Stock over a 30-day period exceeds \$4.25 per share; (b) 50,000 PRSUs vest when the VWAP of the Common Stock over a 30-day period exceeds \$6.00 per share; (c) 9,583 TRSUs vest on each of March 31, 2020, June 30, 2020, and September 30, 2020; and (d) 9,587 TRSUs vest on December 31, 2020.

**Employment Agreements** – All of the Named Executive Officers have entered into employment agreements. The terms of all of such agreements are summarized below.

**Loudermilk Employment Agreement** – Mr. Loudermilk entered into an employment agreement with the Company, dated July 1, 2015, as amended July 1, 2016, June 12, 2017 and January 11, 2019 (the "Loudermilk Employment Agreement"), which provides that he will serve as the Chief Executive Officer and President of the Company for a term ended on December 31, 2018. The term was extended, and will automatically extend, for additional one-year periods unless either Mr. Loudermilk or the Company decides not to extend the term. Under the Loudermilk Employment Agreement, Mr. Loudermilk is entitled to a base salary of at least \$350,000, which may be increased (but not decreased) by the Compensation Committee. For the year ended December 31, 2019, the Compensation Committee increased Mr. Loudermilk's base salary to \$425,000. In addition, Mr. Loudermilk is entitled to a bonus of a certain percentage of his base salary, subject to achievement of annual performance goals. In 2019, Mr. Loudermilk was eligible to earn a bonus of up to \$425,000; based on the Company's financial performance, however, no bonus was paid to Mr. Loudermilk for 2019. Mr. Loudermilk is entitled to participate in all employee benefits available to senior executives or employees of the Company.

Benefits include a 401(k) savings plan, which is a tax-qualified retirement savings plan pursuant to which all U.S. employees, including the Named Executive Officers, are able to contribute up to the limit prescribed by the Internal Revenue Code (a) on a before-tax basis for traditional 401(k) participants, and (b) on a post-tax basis for Roth 401(k) participants. The Company matches 50% of contributions up to 6% of eligible compensation to all 401(k) plan participants other than certain field professionals working for Hyperspring, LLC, and Absolute Consulting, Inc., subject to IRS compensation limits.

The Loudermilk Employment Agreement will terminate prior to the end of its term if certain events occur. If the Loudermilk Employment Agreement terminates due to Mr. Loudermilk's death, disability, or for "Cause", the Company will pay him through the date of termination. Termination for "Cause" includes: willful and continued failure by Mr. Loudermilk to perform his duties (other than as a result of disability) after 30 days' notice and opportunity to cure; his willful engaging in misconduct that materially adversely affects the Company's business or prospects; his felony conviction or plea of no contest to a crime of moral turpitude; abuse of alcohol or drugs affecting his performance; or material breach of a material term of the Loudermilk Employment Agreement.

If the Company terminates the Loudermilk Employment Agreement for any reason other than death, disability, or Cause, or if Mr. Loudermilk terminates the Loudermilk Employment Agreement for "Good Reason", the Company will pay Mr. Loudermilk 12 months' salary, payable as and when salaries are generally paid to executive officers, and he will continue to be eligible to participate in all medical, dental, life insurance, and 401(k) plan benefits for that 12-month period. He will also receive a prorated bonus to the extent he otherwise would have earned one had he remained employed through the end of the year of termination, payable within the first quarter of the following year. Mr. Loudermilk's unvested restricted stock units are forfeited upon termination of his employment, except that a certain percentage of the PRSUs previously granted to him may vest if his employment is terminated by the Company without Cause or by him for Good Reason. Mr. Loudermilk may terminate the Loudermilk Employment Agreement for "Good Reason" if: his duties, responsibilities or authority are materially reduced without his consent; his base salary and bonus opportunity are reduced; his benefits are discontinued or materially reduced, in the aggregate; his primary office is moved more than fifty (50) miles from his current office; or the Company materially breaches the Loudermilk Employment Agreement.

The Loudermilk Employment Agreement provides Mr. Loudermilk with benefits in the event of a Change of Control that are different from those described above. Those benefits are triggered if he terminates his employment for Good Reason (defined above) or the Company terminates his employment for any reason other than Cause (defined above), in each case within one year following the effective date of a Change of Control (defined below). Those benefits are payable in lieu of any other termination benefits and consist of the following: Mr. Loudermilk will receive his base salary and benefits for a period of 12 months from the date of termination of his employment, payable as and when salaries are generally paid to executive officers of the Company, and he will also receive, on the date of termination, a lump sum equal to the greater of (i) the actual amount of bonus earned as of the date of termination or (ii) the target amount of bonus for the period

during which his employment terminates. In addition, upon a Change of Control, a certain percentage of Mr. Loudermilk's PRSUs may vest based on the date of the Change of Control and the volume-weighted average Price ("VWAP") of the Common Stock at that time.

A "Change of Control" occurs if either of the following events occur: (1) Any person not in control of the Company as of the date of the Loudermilk Employment Agreement (other than an employee benefit plan of the Company, or a company owned directly or indirectly by the stockholders of the Company in substantially the same proportions as their ownership of voting securities of the Company) becomes the beneficial owner of a majority of the combined voting power of the Company; or (2) the stockholders of the Company approve: (x) a plan of complete liquidation of the Company; (y) an agreement for the sale or disposition of all or substantially all the Company's assets; or (z) a merger, consolidation, or reorganization of the Company with or involving any other corporation, other than a merger, consolidation, or reorganization that would result in the voting securities of the Company outstanding immediately prior thereto continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity) at least a majority of the combined voting power of the voting securities of the Company (or such surviving entity) outstanding immediately after such merger, consolidation, or reorganization.

Mr. Loudermilk agreed during the term of the Loudermilk Employment Agreement, and for a one-year period following termination of the Loudermilk Employment Agreement, not to compete with Company or solicit employees or customers of the Company.

In 2019, the Company entered into a Retention Agreement with Mr. Loudermilk (the "Retention Agreement"). The Retention Agreement provides for payment of a cash bonus on July 1, 2020, so long as he remains employed by the Company and has not given notice of resignation or retirement as of that date. The bonus would also be made upon the occurrence of a Change of Control, as defined above (the earlier of such an occurrence or the July 1, 2020, date being the "Retention Date"). Under the Retention Agreement, on the Retention Date, Mr. Loudermilk would be entitled to a bonus in the amount of \$100,000, in addition to any amounts provided under his Employment Agreement.

Sorrells Employment Agreement – Mr. Sorrells entered into an employment agreement with the Company, dated August 15, 2016, as amended June 12, 2017, and January 11, 2019 (the "Sorrells Employment Agreement"), which provided that he will serve as the Chief Operating Officer of the Company for a term that ended on December 31, 2018. The term was extended through December 31, 2019. Under the Sorrells Employment Agreement, Mr. Sorrells was entitled to a base salary of at least \$290,000, which may be increased (but not decreased) by the Compensation Committee. For the year ended December 31, 2018, the Compensation Committee increased Mr. Sorrells's base salary to \$350,000. In addition, Mr. Sorrells was entitled to a bonus of a certain percentage of his base salary, subject to achievement of annual performance goals. In 2019, Mr. Sorrells was eligible to earn a bonus of up to \$350,000; due to Mr. Sorrells's resignation on September 30, 2020, and entry into a Separation Agreement as described below (the "Separation Agreement"), Mr. Sorrells was paid an agreed bonus amount of \$35,000 with respect to 2019. Mr. Sorrells was entitled to participate in all employee benefits available to senior executives or employees of the Company, and pursuant to the Separation Agreement these benefits will continue until September 30, 2020.

The Sorrells Employment Agreement would have terminated prior to the end of its term if certain events had occurred. If the Sorrells Employment Agreement had terminated due to Mr. Sorrells's death, disability, or for Cause (as defined above for Mr. Loudermilk), the Company would have paid him through the date of termination. None of these events occurred prior to Mr. Sorrells's resignation.

If the Company terminated the Sorrells Employment Agreement for any reason other than death, disability, or Cause, or if Mr. Sorrells terminated the Sorrells Employment Agreement for Good Reason (as defined above for Mr. Loudermilk), the Company would pay Mr. Sorrells twelve months' salary, payable as and when salaries are generally paid to executive officers, and he would continue to be eligible to participate in all medical, dental, life insurance, and 401(k) plan benefits for that 12-month period. He would also receive a prorated bonus to the extent he otherwise would have earned one had he remained employed through the end of the year of termination, payable within the first quarter of the following year. As described below, the Separation Agreement contains provisions effectuating these terms. Pursuant to the relevant grant agreements, Mr. Sorrells's unvested restricted stock units would be forfeited upon termination of his employment, except that a certain percentage of PRSUs may vest if his employment is terminated by the Company without Cause or by him for Good Reason. Notwithstanding these provisions, the Company and Mr. Sorrells agreed to certain accelerated vesting terms for his unvested RSUs as described below.

The Sorrells Employment Agreement provided Mr. Sorrells with benefits in the event of a Change in Control that were different from those described above. Those benefits would have been triggered if he terminated his employment for Good Reason (defined above) or the Company terminated his employment for any reason other than Cause (defined above), in each case within one year following the effective date of a Change of Control. Those benefits would be payable in lieu of any other termination benefits and consist of the following: Mr. Sorrells would receive his base salary and benefits for a period of 12 months from the date of termination of his employment, payable as and when salaries are generally paid to executive officers of the Company, and he would also receive, on the date of termination, a lump sum equal to the greater of (i) the actual amount of bonus earned as of the date of termination or (ii) the target amount of bonus for the period during which his employment terminates. In addition, upon a Change of Control, a certain percentage of Mr. Sorrells's PRSUs may vest based on the date of the Change of Control and the VWAP of the Common Stock at that time. As described below, the Separation Agreement includes terms replacing these provisions.

Mr. Sorrells agreed during the term of the Sorrells Employment Agreement, and for a one-year period following termination of the Sorrells Employment Agreement, not to compete with Company or solicit employees or customers of the Company.

The Separation Agreement provided that Mr. Sorrells's employment would end as of September 30, 2019. In exchange for Mr. Sorrells's resignation from the Company's Board of Directors and various mutual releases and covenants, the Company and Mr. Sorrells agreed that the Company would continue to pay him his base salary for a period of fourteen months on the Company's regular payroll dates, and that the Company would fund the cost of Mr. Sorrells's COBRA benefits for a period of twelve months if he elected to receive them. The Company also agreed to pay Mr. Sorrells 10% of his 2019 bonus eligibility in March 2020. All other benefits and compensation were terminated. Finally, the Company also agreed (a) to amend Mr. Sorrells' time-restricted share unit grant agreements to accelerate the vesting of his then-unvested TRSUs to September 30, 2019; (b) to amend Mr. Sorrells's performance-vesting restricted share unit grant agreements to extend the performance period during which such PRSUs may vest if the performance criteria are satisfied until September 30, 2020.

Pepe Employment Agreement – Mr. Pepe entered into an employment agreement with the Company, dated July 1, 2016, as amended June 12, 2017, and January 11, 2019 (the "Pepe Employment Agreement"), which provides that he will serve as the Chief Financial Officer of the Company for a term that ended on December 31, 2018. The term was extended, and will automatically extend, for additional one-year periods unless either Mr. Pepe or the Company decides not to extend the term. Under the Pepe Employment Agreement, Mr. Pepe is entitled to a base salary of at least \$250,000, which may be increased (but not decreased) by the Board of Directors. For the year ended December 31, 2019, the Compensation Committee increased Mr. Pepe's base salary to \$300,000. In addition, Mr. Pepe is entitled to a bonus of a certain percentage of his base salary, subject to achievement of annual performance goals. In 2019, Mr. Pepe was eligible to earn a bonus

of up to \$300,000; based on the Company's financial performance, however, no bonus was paid to Mr. Pepe for 2019. Mr. Pepe is entitled to participate in all employee benefits available to senior executives or employees of the Company.

The Pepe Employment Agreement will terminate prior to the end of its term if certain events occur. If the Pepe Employment Agreement terminates due to Mr. Pepe's death, disability, or for Cause (as defined above for Mr. Loudermilk), the Company will pay him through the date of termination.

If the Company terminates the Pepe Employment Agreement for any reason other than death, disability, or Cause, or if Mr. Pepe terminates the Pepe Employment Agreement for Good Reason (as defined above for Mr. Loudermilk), the Company will pay Mr. Pepe twelve months' salary, payable as and when salaries are generally paid to executive officers, and he will continue to be eligible to participate in all medical, dental, life insurance, and 401(k) plan benefits for that 12-month period. He will also receive a prorated bonus to the extent he otherwise would have earned one had he remained employed through the end of the year of termination, payable within the first quarter of the following year. Mr. Pepe's unvested restricted stock units are forfeited upon his termination of employment, except that a certain percentage of PRSUs may vest if his employment is terminated by the Company without Cause or by him for Good Reason.

The Pepe Employment Agreement provides Mr. Pepe with benefits in the event of a Change in Control that are different from those described above. Those benefits are triggered if he terminates his employment for Good Reason (defined above) or the Company terminates his employment for any reason other than Cause (defined above), in each case within one year following the effective date of a Change of Control. Those benefits are payable in lieu of any other termination benefits and consist of the following: Mr. Pepe will receive his base salary and benefits for a period of 12 months from the date of termination of his employment, payable as and when salaries are generally paid to executive officers of the Company, and he will also receive, on the date of termination, a lump sum equal to greater of (i) the actual amount of bonus earned as of the date of termination or (ii) the target amount of bonus for the period during which his employment terminates. In addition, upon a Change of Control, a certain percentage of Mr. Pepe's PRSUs may vest based on the date of the Change of Control and the VWAP of the Common Stock at that time.

Mr. Pepe agreed during the term of the Pepe Employment Agreement, and for a one-year period following termination of the Pepe Employment Agreement, not to compete with Company or solicit employees or customers of the Company.

In 2019, the Company entered into a Retention Agreement with Mr. Pepe (the "Retention Agreement"). The Retention Agreement provides for payment of a cash bonus on July 1, 2020, so long as he remains employed by the Company and has not given notice of resignation or retirement as of that date. The bonus would also be made upon the occurrence of a Change of Control, as defined above (the earlier of such an occurrence or the July 1, 2020, date being the "Retention Date"). Under the Retention Agreement, on the Retention Date, Mr. Pepe would be entitled to a bonus in the amount of \$70,000, in addition to any amounts provided under his Employment Agreement.

**Abbott Employment Agreements** – Mr. Abbott entered into an employment agreement with the Company, dated November 15, 2017 (the "Abbott Employment Agreement"), which provides that he will serve as the President, GSE Absolute/Hyperspring Division of the Company for a term that ends on December 31, 2020. The term will automatically extend for additional one-year periods unless either Mr. Abbott or the Company decides not to extend the term. Under the Abbott Employment Agreement, Mr. Abbott is entitled to a base salary of at least \$250,000, which may be increased (but not decreased) by the Board of Directors. For the year ended December 31, 2019, the Company increased Mr. Abbott's base salary to \$257,500. In addition, Mr. Abbott is entitled to a bonus of a certain percentage of his base salary, subject to achievement of annual performance goals. In 2019, Mr. Abbott was eligible to earn a bonus of up to \$128,750; based on the Company's financial performance, however, no bonus was paid to Mr. Abbott for 2019. In addition, pursuant to a separate Bonus Agreement between the Company and Mr. Abbott dated November 13, 2017, Mr. Abbott earned quarterly bonuses in 2019 for a total amount of \$54,262. Mr. Abbott is entitled to participate in all employee benefits available to senior executives or employees of the Company. The Abbott Employment Agreement will terminate prior to the end of its term if certain events occur. If the Abbott Employment Agreement terminates due to Mr. Abbott's death, disability, or for Cause (as defined above for Mr. Loudermilk), the Company will pay him through the date of termination.

If the Company terminates the Abbott Employment Agreement for any reason other than death, disability, or Cause, or if Mr. Abbott terminates the Abbott Employment Agreement for Good Reason (as defined above for Mr. Loudermilk), the Company will pay Mr. Abbott six months' salary, payable as and when salaries are generally paid to executive officers, and he will continue to be eligible to participate in all medical, dental, life insurance, and 401(k) plan benefits for that six-month period. He will also receive a prorated bonus to the extent he otherwise would have earned one had he remained employed through the end of the year of termination, payable within the first quarter of the following year. Mr. Abbott's unvested restricted stock units are forfeited upon his termination of employment, except that a certain percentage of PRSUs may vest if his employment is terminated by the Company without Cause or by him for Good Reason.

The Abbott Employment Agreement provides Mr. Abbott with benefits in the event of a Change in Control that are different from those described above. Those benefits are triggered if he terminates his employment for Good Reason (defined above) or the Company terminates his employment for any reason other than Cause (defined above), in each case within one year following the effective date of a Change of Control. Those benefits are payable in lieu of any other termination benefits and consist of the following: Mr. Abbott will receive his base salary and benefits for a period of six months from the date of termination of his employment, payable as and when salaries are generally paid to executive officers of the Company, and he will also receive, on the date of termination, a lump sum equal to 50% of the average of the bonus amounts paid to him for the two years prior to the year in which the Change of Control takes place. In addition, upon a Change of Control, a certain percentage of Mr. Abbott's PRSUs may vest based on the date of the Change of Control and the VWAP of the Common Stock at that time.

Mr. Abbott agreed during the term of the Abbott Employment Agreement, and for a one-year period following termination of the Abbott Employment Agreement, not to compete with Company or solicit employees or customers of the Company.

## **COMPENSATION OF DIRECTORS**

As more fully described below, during 2019 the Company (a) paid cash compensation and (b) granted time-vesting restricted stock units (TRSUs) to directors who were classified as "independent directors" based upon the SEC and NASDAQ criteria for director independence.

- (a) **Annual Cash Compensation:** Following the 2019 Annual Meeting of the stockholders, based upon input from the Board's independent compensation consultant, the Board adopted a revised compensation plan for non-employee directors that is better aligned with the Company's peers. Pursuant to the current compensation plan: (a) each non-employee director is paid annual cash compensation of \$30,000; (b) each non-employee director also is paid

cash compensation of \$2,500 for each Board committee on which the director serves; (c) the Chairman of the Board of Directors is paid additional cash compensation of \$10,000; and (d) the Chairs of each of the Compensation Committee, Audit Committee, and Nominating and Governance Committee are paid additional annual cash compensation of \$5,000. The foregoing cash compensation amounts are paid in equal quarterly installments for each quarter in which the director served.

- (b) **TRSUs Granted:** In addition, based on advice from the Board’s independent compensation consultant, the Board granted to each independent director a number of TRSUs from the Long-Term Incentive Plan determined by dividing \$60,000 by the closing price per share of the Common Stock on the last trading day prior to the grant, vesting at the earlier of 12 months after the date of grant or the Company’s subsequent annual meeting.

The table below summarizes the compensation paid by the Company to independent directors.

	Fees Earned or Paid in		Stock	Total	
	Cash	Awards(1)			
J. Bernie Beasley	\$ 38,750	\$ 59,999	\$ 98,749		(2)
John D. Fuller	\$ 43,750	\$ 59,999	\$ 103,749		(3)
Kathryn O’Connor Gardner	\$ 9,375	\$ 29,016	\$ 38,391		(4)
James H. Stanker	\$ 39,375	\$ 59,999	\$ 99,374		(5)
Suresh Sundaram	\$ 39,375	\$ 59,999	\$ 99,374		(6)

- (1) The amounts in this column reflect the aggregate grant date fair value of TRSUs, as computed in accordance with generally accepted accounting principles, assuming no forfeitures, for awards granted pursuant to the Long-Term Incentive Plan. Assumptions used in the calculation of the stock award values are included in Note 17 to the Company’s audited financial statements for the fiscal year ended December 31, 2019, included herewith.
- (2) Mr. Beasley was awarded 25,316 TRSUs in June 2019 having an aggregate grant date fair value of \$59,999. In addition, 7,911 TRSUs that were granted to Mr. Beasley in 2018 vested during 2019, resulting in the issuance to Mr. Beasley of 7,911 shares of Common Stock valued at the date of vesting at \$2.23 per share (these shares are not included in the “Stock Awards” column for Mr. Beasley because the underlying TRSUs were granted during 2018). At fiscal year-end, Mr. Beasley had no stock options and 25,316 TRSUs outstanding.
- (3) Mr. Fuller was awarded 25,316 TRSUs in June 2019 having an aggregate grant date fair value of \$59,999. In addition, 7,911 TRSUs that were granted to Mr. Fuller in 2018 vested during 2019, resulting in the issuance to Mr. Fuller of 7,911 shares of Common Stock valued at the date of vesting at \$2.23 per share (these shares are not included in the “Stock Awards” column for Mr. Fuller because the underlying TRSUs were granted during 2018). At fiscal year-end, Mr. Fuller had no stock options and 25,316 TRSUs outstanding.
- (4) Ms. Gardner was awarded 23,590 TRSUs in December 2019 having an aggregate grant date fair value of \$29,016. At fiscal year-end, Ms. Gardner had no stock options and 23,590 TRSUs outstanding.
- (5) Mr. Stanker was awarded 25,316 TRSUs in June 2019 having an aggregate grant date fair value of \$59,999. In addition, 7,911 TRSUs that were granted to Mr. Stanker in 2018 vested during 2019, resulting in the issuance to Mr. Stanker of 7,911 shares of Common Stock valued at the date of vesting at \$2.23 per share (these shares are not included in the “Stock Awards” column for Mr. Stanker because the underlying TRSUs were granted during 2018). At fiscal year-end, Mr. Stanker had no stock options and 25,316 TRSUs outstanding.
- (6) Dr. Sundaram was awarded 25,316 TRSUs in June 2019 having an aggregate grant date fair value of \$59,999. In addition, 7,911 TRSUs that were granted to Dr. Sundaram in 2018 vested during 2019, resulting in the issuance to Dr. Sundaram of 7,911 shares of Common Stock valued at the date of vesting at \$2.23 per share (these shares are not included in the “Stock Awards” column for Dr. Sundaram because the underlying TRSUs were granted during 2018). At fiscal year-end, Dr. Sundaram had no stock options and 25,316 TRSUs outstanding.

Through its Compensation Committee, the Board intends to continue assessing the manner in which it compensates its non-employee directors and to consider and implement further modifications to its compensation policies as necessary to continue to attract high-quality individuals to serve on the Board and to align its compensation of non-employee directors with best practices observed by similar companies.

**ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS.**

**Voting Securities and Principal Holders Thereof**

The following table sets forth certain information known to the Company regarding the beneficial ownership of the Common Stock as of May 1, 2020 (the “Measurement Date”), by (1) all beneficial owners of 5% or more of the Common Stock; (2) each director and nominee for election as director; (3) each executive officer named in the Summary Compensation Table appearing in Item 11 hereof (the “Named Executive Officers”); and (4) all executive officers, directors and nominees of the Company as a group. The number of shares beneficially owned by each person is determined under the rules of the Securities and Exchange Commission (the “SEC”) and the information is not necessarily indicative of beneficial ownership for any other purpose. SEC rules deem a person to be the beneficial owner of any securities which that person has the right to acquire within 60 days of the Measurement Date. The Common Stock is the only class of voting securities of the Company. Except as otherwise indicated in the footnotes to the tables below, the Company believes that the beneficial owners of the Common Stock have sole investment and voting power with respect to such shares, subject to community property laws where applicable. Unless otherwise indicated, the address for each of the stockholders listed below is c/o GSE Systems, Inc., 1332 Londontown Blvd., Suite 200, Sykesville, Maryland 21784.

Name of Beneficial Owner	GSE Common Stock Amount and Nature of Beneficial Ownership (A)(1)	Percent of Class (B)(1)
<b><u>Beneficial Owners:</u></b>		
NGP Energy Technology Partners II, L.P. 1700 K St. NW, Suite 750	2,616,525 (2)	12.9%

Polar Asset Management Partners Inc. 401 Bay Street, Suite 1900 P.O. Box 19 Toronto, Ontario, M5H 2Y4, Canada	2,000,000	(3)	9.8%
PVAM Perlus Microcap Fund L.P. c/o Conyers Trust Company (Cayman) Limited Cricket Square, Hutchins Drive, P.O. Box 2681 Grand Cayman, KY1-1111, Cayman Islands	1,658,819	(4)	8.2%
PVAM Holdings Ltd. and Pacific View Asset Management (UK) LLP 8th Floor, 20 Farringdon Street London, EC4A 4AB, United Kingdom			
Needham Asset Management, LLC, Needham Investment Management L.L.C., Needham Aggressive Growth Fund, and George A. Needham 250 Park Avenue, 10th Floor New York, NY 10177-1099	1,100,683	(5)	5.4%

(table continued)

Name of Beneficial Owner	GSE Common Stock Amount and Nature of Beneficial Ownership (A)(1)		Percent of Class (B) (1)
<b>Board and Management</b>			
J. Barnie Beasley	33,227	(6)	*
John D. Fuller	40,579	(7)	*
Kathryn O'Connor Gardner	23,590	(8)	
James H. Stanker	48,118	(9)	*
Suresh Sundaram	51,961	(10)	*
Kyle J. Loudermilk	470,803	(11)	2.3%
Emmett A. Pepe	132,751	(12)	*
Christopher D. Sorrells	418,451	(13)	2.1%
Paul T. Abbott	110,003	(14)	*
Directors and Executive Officers as a group (9 persons)	1,388,160	(15)	6.8%

\* Less than one percent.

(A) This table is based on information supplied by officers, directors and principal stockholders of the Company and on any Schedules 13D or 13G filed with the SEC.

(B) Applicable percentages are based on 20,319,396 shares outstanding on the Measurement Date, adjusted where applicable for each owner as required by rules promulgated by the SEC.

(1) Includes all time-restricted stock units vesting within 60 days of the Measurement Date.

(2) Based on a Schedule 13G filed with the SEC on February 13, 2020, by NGP Energy Technology Partners II, L.P., on its own behalf and on behalf of NGP ETP II, L.L.C., Energy Technology Partners, L.L.C., and Philip J. Deutch. Each of the Reporting Persons other than NGP Energy Technology Partners II, L.P., disclaim beneficial ownership over the securities reported except to the extent of the Reporting Persons' pecuniary interest therein.

(3) Based on a Schedule 13G filed with the SEC on February 11, 2020, by Polar Asset Management Partners Inc. Polar Asset Management Partners Inc. serves as investment advisor to Polar Multi-Strategy Master Fund, Polar Micro-Cap Fund, Polar Micro-Cap Fund II L.P., and certain managed accounts, with respect to the shares of Common Stock, and shares with such entities collectively the right to receive or the power to direct the receipt of dividends therefrom or the proceeds of sale thereof.

(4) Based on a Schedule 13G/A filed with the SEC on February 14, 2020, on behalf of PVAM Perlus Microcap Fund L.P., PVAM Holdings Ltd., and Pacific View Asset Management (UK) LLP, as reporting persons with respect to the shares of Common Stock.

(5) Based on a Schedule 13G filed with the SEC on February 14, 2020, by Needham Asset Management, LLC, Needham Investment Management L.L.C., Needham Aggressive Growth Fund, and George A. Needham. Each of Needham Asset Management, LLC, Needham Investment Management L.L.C., and George A. Needham share voting and dispositive power with respect to 1,100,683 shares of Common Stock, while Needham Aggressive Growth Fund shares voting and dispositive power with respect to 1,052,625 shares of Common Stock.

(6) Includes 7,911 shares of Common Stock owned directly by Mr. Beasley and 25,316 shares of Common Stock issuable upon vesting of time-restricted stock units held by Mr. Beasley.



- (7) Includes 15,263 shares of Common Stock owned directly by Mr. Fuller and 25,316 shares of Common Stock issuable upon vesting of time-restricted stock units held by Mr. Fuller.
- (8) Includes 23,590 shares of Common Stock issuable upon vesting of time-restricted stock units held by Ms. Gardner.
- (9) Includes 22,802 shares of Common Stock owned directly by Mr. Stanker and 25,316 shares of Common Stock issuable upon vesting of time-restricted stock units held by Mr. Stanker.
- (10) Includes 26,645 shares of Common Stock owned directly by Dr. Sundaram and 25,316 shares of Common Stock issuable upon vesting of time-restricted stock units held by Dr. Sundaram.
- (11) Includes 470,803 shares of Common Stock owned directly by Mr. Loudermilk.
- (12) Includes 132,751 shares of Common Stock owned directly by Mr. Pepe.
- (13) Includes 418,451 shares of Common Stock owned directly by Mr. Sorrells as of his departure from the Company on September 30, 2019. The Company is not apprised of any changes in Mr. Sorrells's ownership after that date.
- (14) Includes 110,003 shares of Common Stock owned directly by Mr. Abbott.
- (15) Includes 1,231,254 shares of Common Stock owned directly by the directors and executive officers and 156,906 shares of Common Stock issuable upon vesting of time-restricted stock units held by the directors and executive officers.

The following table sets forth the equity compensation plan information for the year ended December 31, 2019:

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights (a)	Weighted Average Exercise Price of Outstanding Options, Warrants and Rights (b)	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in Column (a)) (c)
Equity compensation plans approved by security holders			
Options	5,000	\$ 1.65	
RSUs	1,951,208	\$ 1.49	
	<u>1,956,208</u>	<u>\$ 1.49</u>	<u>1,599,241</u>
Equity compensation plans not approved by security holders			
	--	\$ --	--
<b>Total</b>	<u>1,956,208</u>	<u>\$ 1.49</u>	<u>1,599,241</u>

Table above excludes 255,000 RSUs granted under the Company's 1995 Long-Term Incentive Plan that are settled in cash instead of shares.

For a description of the material terms of our stock-based compensation plans, see Notes 16 and 17 to the consolidated financial statements in Item 8 of this report.

**ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS AND DIRECTOR INDEPENDENCE.**

**Certain Relationships and Related Party Transactions**

It is the Company's policy that any transactions with related parties are to be reviewed and approved by the Company's Audit Committee, with the exception of officer compensation which is approved by the Compensation Committee.

**Director Independence**

The Board has adopted specific director independence criteria, consistent with the NASDAQ listing standards, to assist it in making determinations regarding the independence of its members. The Board considers the independence of its members at least annually. No directors will be deemed to be independent unless the Board affirmatively determines that the director in question has no material relationship with the Company, directly or as an officer, stockholder, member or partner of an organization that has a material relationship with the Company. The Board has determined that no director other than Mr. Loudermilk has a direct or indirect material relationship with the Company, nor does any other director have a direct or indirect material interest in any transaction involving the Company. Every director other than Mr. Loudermilk satisfies the Company's independence criteria. The Board has further determined that all of the members of the Audit Committee (Messrs. Stanker, Sundaram, Fuller, and Beasley, and Ms. Gardner) meet the applicable heightened standards for audit committee independence.

**ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES.**

**AUDIT COMMITTEE REPORT**

The Audit Committee has:

reviewed and discussed the Company's audited consolidated financial statements as of and for the year ended December 31, 2019, with management and with BDO USA, LLP, the Company's independent registered public accounting firm for 2019, who represented to the Audit Committee that the Company's consolidated financial statements for the year ended December 31, 2019, were prepared in accordance with U.S. Generally Accepted Accounting Principles;

discussed with BDO USA, LLP, the matters required under applicable professional auditing standards and regulations by the Public Company Accounting Oversight Board ("PCAOB") Statement on Auditing Standards No. 1301, Communications with Audit Committees;

received the written disclosures and the letter from BDO USA, LLP, required by the applicable requirements of the PCAOB regarding BDO USA, LLP's communications with the Audit Committee concerning independence, including Ethics and Independence Rule 3526, Communication with Audit Committees Concerning Independence, and has discussed with BDO USA, LLP its independence from the Company and its management;

discussed with BDO USA, LLP, the overall scope and plans of their audit, and met with BDO USA, LLP, with and without management present, to discuss the results of their examinations and the overall quality of the Company's financial reporting; and

recommended, based on the reviews and discussions referred to above, to the Board of Directors that the audited financial statements be included in the Company's Annual Report on Form 10-K for the year ended December 31, 2019, for filing with the SEC.

By the members of the Audit Committee:

James H. Stanker, Chair  
John D. Fuller  
Suresh Sundaram  
J. Barnie Beasley  
Kathryn O'Connor Gardner

**AUDIT COMMITTEE PRE-APPROVAL OF AUDIT AND NON-AUDIT SERVICES**

The Audit Committee pre-approves all audit and permissible non-audit services provided to the Company by its independent registered public accounting firm. These services may include audit services, audit-related services, tax services, and other services. The Audit Committee has adopted policies and procedures for the pre-approval of services provided by the independent registered public accounting firm. Management must provide a detailed description of each proposed service and the projected fees and costs (or a range of such fees and costs) for the service. The policies and procedures require management to provide quarterly updates to the Audit Committee regarding services rendered to date and services yet to be performed.

As permitted under the Sarbanes-Oxley Act of 2002, the Audit Committee may delegate pre-approval authority to its Chair for audit and permitted non-audit services. Any service pre-approved by the Audit Committee or its Chair must be reported to the Audit Committee at the next scheduled quarterly meeting. In addition, the pre-approval procedures require that all proposed engagements of BDO USA, LLP, for services of any kind be directed to the Company's Chief Financial Officer before they are submitted for approval prior to the commencement of any service.

The following table presents fees for professional audit services and other related services rendered by BDO USA, LLP, to the Company for the years ended

December 31, 2019 and 2018. The Audit Committee approved 100% of the services described in the following table.

	<u>2019</u>	<u>2018</u>
<b>Audit fees (1)</b>	<b>\$ 914,349</b>	<b>\$ 547,620</b>
<b>Audit-related fees (2)</b>	<b>49,091</b>	<b>68,180</b>
<b>Tax fees</b>	<b>-</b>	<b>-</b>
<b>All other fees</b>	<b>-</b>	<b>-</b>
<b>Total Fees</b>	<b><u>\$ 963,440</u></b>	<b><u>\$ 615,800</u></b>

- (1) Audit fees consisted of fees for the audit of the Company's consolidated financial statements, including quarterly review services in accordance with SAS No. 100 and statutory audit services for subsidiaries of the Company.
- (2) Audit related fees consisted of fees for the audit of the financial statements of the Company's 401(k) Savings Plan, in the amount of \$22,471, and fees for the audit of the financial statements of the Company's recently acquired subsidiary, in the amount of \$26,620.

There were no other fees paid to BDO USA, LLP, except as outlined in the above table.

**ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES.**

(a) (1) List of Financial Statements

The following financial statements are included in Item 8:

**GSE Systems, Inc. and Subsidiaries**

Report of Independent Registered Public Accounting Firm  
Consolidated Balance Sheets as of December 31, 2019 and 2018  
Consolidated Statements of Operations for the years ended December 31, 2019 and 2018  
Consolidated Statements of Comprehensive (Loss) Income for the years ended December 31, 2019 and 2018  
Consolidated Statements of Changes in Stockholders' Equity for the years ended December 31, 2019 and 2018  
Consolidated Statements of Cash Flows for the years ended December 31, 2019 and 2018  
Notes to Consolidated Financial Statements

(a) (2) List of Schedules

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

(a) (3) List of Exhibits

The Exhibits which are filed with this report or which are incorporated by reference are set forth in the Exhibit index hereto.

**ITEM 16. FORM 10-K SUMMARY.**

None.

**Exhibit Description of Exhibits**

**2. Plan of acquisition, reorganization, arrangement, liquidation, or succession**

[2.1](#) Membership Interests Purchase Agreement, dated as of November 14, 2014, by and between Dale Jennings, Paul Abbott, Shawn McKeever and Mickey Ellis and GSE Power Systems. Incorporated herein by reference to Exhibit 2.1 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on November 17, 2014.

[2.2](#) Amendment to Membership Interests Purchase Agreement, dated as of May 13, 2015, by and between Shawn McKeever and GSE Performance Solutions, Inc. (previously known as GSE Power Systems, Inc.). Incorporated herein by reference to Exhibit 10.2 of GSE Systems, Inc. Form 10-Q filed with the Securities and Exchange Commission on May 14, 2015.

[2.3](#) Stock Purchase Agreement, dated as of September 20, 2017, by and among GSE Performance Solutions, Inc., Richard D Linton and Cynthia Linton (and certain trusts owned thereby), Absolute Consulting, Inc., and Richard D. Linton, as representative of all the Sellers and the Trustees. Incorporated herein by reference to Exhibit 2.1 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on September 20, 2017.

[2.4](#) Membership Interest Purchase Agreement, dated as of May 11, 2018, between True North Consulting LLC, Donald R. Horn, Jenny C. Horn, GSE Performance Solutions, Inc., and Donald R. Horn in his capacity as Seller Representative. Incorporated herein by reference to Exhibit 2.1 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on May 14, 2018.

[2.5](#) Membership Interest Purchase Agreement, dated as of February 15, 2019, between DP Engineering Co. Ltd., Steven L. Pellerin, Christopher A. Davenport, GSE Performance Solutions, Inc., and Steven L. Pellerin in his capacity as Seller Representative. Incorporated herein by reference to Exhibit 2.1 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on February 19, 2019.

**3. Articles of Incorporation and Bylaws**

[3.1](#) Restatement of Certificate of Incorporation dated November 14, 2016. Incorporated herein by reference to Exhibit 3.1 of GSE Systems, Inc. Form 10-Q filed with the Securities and Exchange Commission on November 14, 2016.

[3.2](#) Certificate of the Elimination of the Series A Cumulative Convertible Preferred Stock dated November 14, 2016. Incorporated herein by reference to Exhibit 3.2 of GSE Systems, Inc. Form 10-Q filed with the Securities and Exchange Commission on November 14, 2016.

[3.3](#) Amendment to the Certificate of Incorporation of GSE Systems, Inc., dated June 12, 2018. Incorporated herein by reference to Exhibit 3.1 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on June 15, 2018.

[3.4](#) Third Amended and Restated Bylaws of GSE Systems, Inc., amended and restated on September 14, 2016. Incorporated herein by reference to Exhibit 3.2 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on September 16, 2016.

[3.5](#) First Amendment to the Third Amended and Restated Bylaws of GSE Systems, Inc., effective as of June 12, 2018. Incorporated herein by reference to Exhibit 3.2 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on June 15, 2018.

**10. Material Contracts**

[10.1](#) Agreement of Lease, dated February 27, 2008, by and between 1332 Londontown, LLC and GSE Systems, Inc. Incorporated herein by reference to Exhibit 10.1 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on March 11, 2008.

[10.2](#) Amendment of Lease to Agreement of Lease, dated May 28, 2008, by and between 1332 Londontown, LLC and GSE Systems, Inc. Incorporated herein by reference to Exhibit 10.20 of GSE Systems, Inc. Form 10-K filed with the Securities and Exchange Commission on March 19, 2015.

[10.3](#) Second Amendment of Lease to Agreement of Lease, dated July 22, 2010, by and between 1332 Londontown Road, LLC and GSE Systems, Inc. Incorporated herein by reference to Exhibit 10.21 of GSE Systems, Inc. Form 10-K filed with the Securities and Exchange Commission on March 19, 2015.

[10.4](#) Third Amendment of Lease to Agreement of Lease, dated May 15, 2012, by and between 1332 Londontown Road, LLC and GSE Systems, Inc. Incorporated herein by reference to Exhibit 10.22 of GSE Systems, Inc. Form 10-K filed with the Securities and Exchange Commission

on March 19, 2015.

<a href="#">10.5</a>	Fourth Amendment of Lease to Agreement of Lease, dated April 15, 2014, by and between 1332 Londontown Road, LLC and GSE Systems, Inc. Incorporated herein by reference to Exhibit 10.1 of GSE Systems, Inc. Form 10-Q filed with the Securities and Exchange Commission on May 15, 2014.
<a href="#">10.6</a>	GSE Systems, Inc. 1995 Long-Term Incentive Plan, amended and restated, dated as of March 6, 2014. Incorporated herein by reference to Exhibit A of GSE Systems, Inc. Form DEF 14A filed with the Securities and Exchange Commission on April 29, 2014. *
<a href="#">10.7</a>	Form of Option Agreement Under the GSE Systems, Inc. 1995 Long-Term Incentive Plan. Incorporated herein by reference to Exhibit 10.9 of GSE Systems, Inc. Form 10-K filed with the Securities and Exchange Commission on March 31, 1997. *
<a href="#">10.8</a>	Form of Restricted Share Unit Agreement pursuant to the GSE Systems, Inc. 1995 Long-Term Incentive Plan, as amended and restated, dated as of April 22, 2016. Incorporated herein by reference to Exhibit 10.2 of GSE Systems, Inc. Form 10-Q filed with the Securities and Exchange Commission on November 14, 2016.*
<a href="#">10.9</a>	Form of Amendment to Restricted Share Unit Agreement, dated July 1, 2016. Incorporated herein by reference to Exhibit 99.8 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on July 1, 2016. *
<a href="#">10.10</a>	Employment Agreement, dated July 1, 2016, by and between GSE Systems, Inc. and Emmett A. Pepe. Incorporated herein by reference to Exhibit 99.2 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on July 5, 2016. *
<a href="#">10.11</a>	Amendment to Employment Agreement between Emmett Pepe and GSE Systems, Inc. dated as of June 12, 2017. Incorporated herein by reference to Exhibit 99.4 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on June 16, 2017.*
<a href="#">10.12</a>	Amendment No. 2 to Employment Agreement between GSE Systems, Inc. and Emmett Pepe, dated as of January 11, 2019. Incorporated herein by reference to Exhibit 99.3 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on January 11, 2019.*
<a href="#">10.13</a>	Employment Agreement between Christopher D. Sorrells and GSE Systems, Inc. dated as of August 15, 2016. Incorporated herein by reference to Exhibit 10.1 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on August 19, 2016. *
<a href="#">10.14</a>	Amendment to Employment Agreement between Christopher D. Sorrells and GSE Systems, Inc. dated as of June 12, 2017. Incorporated herein by reference to Exhibit 99.2 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on June 16, 2017.*
<a href="#">10.15</a>	Amendment No. 2 to Employment Agreement, dated January 11, 2019, by and between GSE Systems, Inc. and Christopher D. Sorrells. Incorporated herein by reference to Exhibit 99.2 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on January 11, 2019.*
<a href="#">10.16</a>	Separation Agreement of Christopher D. Sorrells, dated September 18, 2019, including Amendment to Restricted Share Unit Agreements herein by reference to Exhibit 10.1 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on September 19, 2019.
<a href="#">10.17</a>	Employment Agreement, dated December 1, 2015, by and between GSE Systems, Inc. and Bahram Meyssami. Incorporated herein by reference to Exhibit 10.1 of GSE Systems, Inc. Form 10-Q filed with the Securities and Exchange Commission on May 15, 2017.*
<a href="#">10.18</a>	Amendment to Employment Agreement, dated June 12, 2017, by and between GSE Systems, Inc. and Bahram Meyssami. Incorporated herein by reference to Exhibit 99.3 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on June 16, 2017.*
<a href="#">10.19</a>	Employment Agreement, dated July 1, 2015, by and between GSE Systems, Inc. and Kyle J. Loudermilk. Incorporated herein by reference to Exhibit 10.1 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on July 31, 2015. *
<a href="#">10.20</a>	Amendment to Employment Agreement, dated July 1, 2016, by and between GSE Systems, Inc. and Kyle J. Loudermilk. Incorporated herein by reference to Exhibit 99.1 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on July 1, 2016.*
<a href="#">10.21</a>	Amendment No. 2 to Employment Agreement, dated June 12, 2017, by and between GSE Systems, Inc. and Kyle Loudermilk. Incorporated herein by reference to Exhibit 99.1 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on June 16, 2017.*
<a href="#">10.22</a>	Amendment No. 3 to Employment Agreement, dated January 11, 2019, by and between GSE Systems, Inc. and Kyle J. Loudermilk. Incorporated herein by reference to Exhibit 99.1 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on January 11, 2019.*
<a href="#">10.23</a>	Employment Agreement, dated November 15, 2017, by and between GSE Systems, Inc. and Paul Abbott. Filed herewith.
<a href="#">10.24</a>	Restricted Share Unit Agreement, dated July 1, 2015, by and between GSE Systems, Inc. and Kyle J. Loudermilk. Incorporated herein by reference to Exhibit 10.2 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on July 31, 2015.*
<a href="#">10.25</a>	Amendment to Restricted Share Unit Agreement, dated July 1, 2016, by and between GSE Systems, Inc. and Kyle J. Loudermilk. Incorporated herein by reference to Exhibit 99.2 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on July 1, 2016.*
<a href="#">10.26</a>	Restricted Share Unit Agreement (Cash Award), dated July 1, 2015, by and between GSE Systems, Inc. and Kyle J. Loudermilk. Incorporated herein by reference to Exhibit 99.3 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on July 1, 2016.*

<a href="#">10.27</a>	Restricted Share Unit Agreement (Common Stock Award), dated July 1, 2016, by and between GSE Systems, Inc. and Kyle J. Loudermilk. Incorporated herein by reference to Exhibit 99.4 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on July 1, 2016.*
<a href="#">10.28</a>	Restricted Share Unit Agreement, dated July 1, 2016, by and between GSE Systems, Inc. and Emmett A. Pepe. Incorporated herein by reference to Exhibit 99.3 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on July 5, 2016.*
<a href="#">10.29</a>	Restricted Share Unit Agreement, dated August 15, 2016, by and between GSE Systems, Inc. and Christopher D. Sorrells. Incorporated herein by reference to Exhibit 10.2 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on August 19, 2016.*
<a href="#">10.30</a>	Restricted Share Unit Agreement, dated August 15, 2016, by and between GSE Systems, Inc. and Christopher D. Sorrells. Incorporated herein by reference to Exhibit 10.3 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on August 19, 2016.*
<a href="#">10.31</a>	Restricted Share Unit Agreement (Cash Award), dated August 15, 2016, by and between GSE Systems, Inc. and Christopher D. Sorrells. Incorporated herein by reference to Exhibit 10.4 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on August 19, 2016.*
<a href="#">10.32</a> <a href="#">10.32</a>	Amendment to Restricted Share Unit Agreements, dated September 18, 2019, by and between GSE Systems, Inc. and Christopher D. Sorrells. Incorporated herein by reference to Exhibit A to Exhibit 10.1 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on September 19, 2019 and Exhibit 99.1 of GSE Systems, Inc. Form 10-Q filed with the Securities Exchange Commission on November 19, 2019.
<a href="#">10.33</a>	Restricted Share Unit Agreement, dated December 1, 2015, by and between GSE Systems, Inc. and Bahram Meyssami. Incorporated herein by reference to Exhibit 10.2 of GSE Systems, Inc. Form 10-Q filed with the Securities and Exchange Commission on May 15, 2017.*
<a href="#">10.34</a>	Amendment to Restricted Share Unit Agreement, dated July 1, 2016, by and between GSE Systems, Inc. and Bahram Meyssami. Incorporated herein by reference to Exhibit 10.3 of GSE Systems, Inc. Form 10-Q filed with the Securities and Exchange Commission on May 15, 2017.*
<a href="#">10.35</a>	Credit and Security Agreement, dated December 29, 2016, by and between Citizens Bank, National Association, GSE Systems, Inc. and GSE Performance Solutions, Inc.. Incorporated herein by reference to Exhibit 99.1 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on January 4, 2017.
<a href="#">10.36</a>	Amended and Restated Credit and Security Agreement, dated as of May 11, 2018, by and among Citizens Bank, National Association, GSE Systems, Inc. and GSE Performance Solutions, Inc.. Incorporated herein by reference to Exhibit 99.1 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on May 14, 2018.
<a href="#">10.37</a>	Amendment and Reaffirmation Agreement, dated February 22, 2017, and effective as of December 29, 2016, by and among GSE Systems, Inc., GSE Performance Solutions, Inc. and Citizens Bank, National Association. Incorporated herein by reference to Exhibit 10.36 of GSE Systems, Inc. Form 10-K filed with the Securities and Exchange Commission on March 28, 2017.
10.38	Second Amendment and Reaffirmation Agreement dated as of May 25, 2018, by and among GSE Systems, Inc., GSE Performance Solutions, Inc. GSE True North Consulting, LLC, Hyperspring, LLC, Absolute Consulting, Inc. and Citizens Bank, National Association. Incorporated herein by reference to Exhibit 10.35 of GSE Systems, Inc. Form 10-K filed with the Securities and Exchange Commission on March 28, 2019.
<a href="#">10.39</a>	Third Amendment and Reaffirmation Agreement dated as of February 15, 2019, by and among GSE Systems, Inc., GSE Performance Solutions, Inc., GSE True North Consulting, LLC, Hyperspring, LLC, Absolute Consulting, Inc. and DP Engineering Ltd. Co., and Citizens Bank, National Association. Incorporated herein by reference to Exhibit 99.1 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on February 19, 2019.
10.40	Fourth Amendment and Reaffirmation Agreement dated as of March 20, 2019, by and among GSE Systems, Inc., and GSE Performance Solutions, Inc., as Borrowers, GSE True North Consulting, LLC, Hyperspring, LLC, Absolute Consulting, Inc., and DP Engineering LLC, as Guarantors, and Citizens Bank, National Association, as Bank. Filed herewith.
<a href="#">10.41</a>	Fifth Amendment and Reaffirmation Agreement, dated as of June 28, 2019, by and among Citizens Bank, National Association, as Bank, and GSE Systems, Inc. and GSE Performance Solutions, Inc. as Borrower, GSE True North Consulting, LLC, Hyperspring, LLC, Absolute Consulting, Inc. and DP Engineering, LLC as Guarantor. Incorporated herein by reference to Exhibit 99.1 of our Current Report on Form 8-K filed with the Securities and Exchange Commission on July 1, 2019.
<a href="#">10.42</a>	Sixth Amendment and Reaffirmation Agreement, dated as of December 31, 2019, by and among Citizens Bank, National Association, as Bank, and GSE Systems, Inc. and GSE Performance Solutions, Inc. as Borrower, GSE True North Consulting, LLC, Hyperspring, LLC, Absolute Consulting, Inc. and DP Engineering, LLC as Guarantor. Incorporated herein by reference to Exhibit 99.1 of our Current Report on Form 8-K filed with the Securities and Exchange Commission on January 8, 2020.
<a href="#">10.43</a>	Seventh Amendment and Reaffirmation Agreement, dated as of March,31 2020, by and among Citizens Bank, National Association, as Bank, and GSE Systems, Inc. and GSE Performance Solutions, Inc. as Borrower, GSE True North Consulting, LLC, Hyperspring, LLC, Absolute Consulting, Inc. and DP Engineering, LLC as Guarantor. Incorporated herein by reference to Exhibit 99.1 of our Current Report on Form 8-K filed with the Securities and Exchange Commission on April 17, 2020.
<a href="#">10.44</a>	Sixth Comprehensive Amendment to Financing Documents, dated as of December 29, 2016, by and between Branch Banking and Trust Company, GSE Systems, Inc., and GSE Performance Solutions, Inc. Incorporated herein by reference to Exhibit 99.2 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on January 4, 2017.
10.45	Form of Indemnification Agreement. Incorporated herein by reference to Exhibit 10.38 of GSE Systems, Inc. Form 10-K filed with the Securities and Exchange Commission on March 28, 2019.
<a href="#">10.46</a>	Retention Agreement, dated December 20, 2019, by and between GSE Systems, Inc. and Kyle J. Loudermilk. Incorporated herein by reference to Exhibit 10.1 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on December 20, 2019.

<a href="#"><u>10.47</u></a>	Retention Agreement, dated December 20, 2019, by and between GSE Systems, Inc. and Emmett A. Pepe. Incorporated herein by reference to Exhibit 10.2 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on December 20, 2019.
<a href="#"><u>10.48</u></a>	Settlement and Release Agreement, dated December 30, 2019, by, among, and between GSE Performance Solutions, Inc., GSE Systems, Inc. and their subsidiaries and affiliates, including, but not limited to, DP Engineering Ltd. Co., Christopher A. Davenport, and Steven L. Pellerin. Incorporated herein by reference to Exhibit 10.1 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on January 6, 2020.
10.49	Collateral Assignment of Rights Under Escrow Agreement dated March 31, 2020, is made by GSE Performance Solutions Inc., in favor of Citizens Bank, National Association. Filed herewith.
<a href="#"><u>10.50</u></a>	Promissory Note, dated April 23, 2020, by and between GSE Systems, Inc. and Citizens Bank, N.A., received by the Company under the Small Business Administration Paycheck Protection Program of the Coronavirus Air, Relief and Economic Security Act of 2020. Incorporated herein by reference to Exhibit 99.1 of GSE Systems, Inc. Form 8-K filed with the Securities and Exchange Commission on April 30, 2020
<b>14</b>	<b>Code of Ethics</b>
<a href="#"><u>14.1</u></a>	Code of Ethics for the Principal Executive Officer and Senior Financial Officers. Previously filed in connection with the GSE Systems, Inc. Form 10-K filed with the Securities and Exchange Commission on March 31, 2006 and incorporated herein by reference.
<b>21</b>	<b>Subsidiaries.</b>
21.1	List of Subsidiaries of Registrant at December 31, 2019, filed herewith.
<b>23</b>	<b>Consent of Independent Registered Public Accounting Firm</b>
23.1	Consent of BDO USA, LLP, filed herewith.
<b>24</b>	<b>Power of Attorney</b>
24.1	Power of Attorney for Directors' and Officers' Signatures on SEC Form 10-K, filed herewith.
<b>31</b>	<b>Certifications</b>
31.1	Certification of Chief Executive Officer of the Company pursuant to Securities and Exchange Act Rule 13d-14(a)/15(d-14(a), as adopted pursuant to Section 302 and 404 of the Sarbanes-Oxley Act of 2002, filed herewith.
31.2	Certification of Chief Financial Officer of the Company pursuant to Securities and Exchange Act Rule 13d-14(a)/15(d-14(a), as adopted pursuant to Section 302 and 404 of the Sarbanes-Oxley Act of 2002, filed herewith.
<b>32</b>	<b>Section 1350 Certifications</b>
32.1	Certification of Chief Executive Officer and Chief Financial Officer of the Company pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, file herewith.

\* Management contracts or compensatory plans required to be filed as exhibits pursuant to Item 15(b) of this report.

**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.

GSE Systems, Inc.  
By: /s/ Kyle J. Loudermilk  
\_\_\_\_\_  
Kyle J. Loudermilk  
Chief Executive Officer

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

Date: June 11, 2020                      /s/ KYLE J. LOUDERMILK  
\_\_\_\_\_  
Kyle J. Loudermilk, Chief Executive Officer  
(Principal Executive Officer)

Date: June 11, 2020                      /s/ EMMETT A. PEPE  
\_\_\_\_\_  
Emmett A. Pepe, Chief Financial Officer  
(Principal Financial and Accounting Officer)

Date: June 11, 2020	(John D. Fuller, Chairman of the Board	)	By: <u>/s/ EMMETT A. PEPE</u>
	(Jim Stanker, Chairman of the Audit Committee	)	Emmett A. Pepe
	(Suresh Sundaram, Director	)	Attorney-in-Fact
	(J. Barnie Beasley, Director	)	

A Power of Attorney, dated June 11, 2020 authorizing Emmett A. Pepe to sign this Annual Report on Form 10-K for the fiscal year ended December 31, 2019 on behalf of certain of the directors of the Registrant is filed as Exhibit 24.1 to this Annual Report.



## EMPLOYMENT AGREEMENT

This Employment Agreement, dated as of November 15, 2017 (the “**Effective Date**”), by and between GSE Systems, Inc., a Delaware corporation with principal executive offices at 1332 Londontown Blvd., Sykesville, MD 21784 (the “**Company**”), and Paul Abbott, residing at 121 Gentry Drive, Woolwich, NJ 08085 (“**Executive**”).

### BACKGROUND

The Company and the Executive desire that the Executive be employed by the Company and have entered into this Employment Agreement to set forth the terms and conditions on which the Executive shall be employed by the Company.

NOW, THEREFORE, in consideration of the premises, the mutual promises, covenants, and conditions herein contained and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto intending to be legally bound hereby agree as follows:

1. **Employment.** The Company hereby agrees to employ Executive, and Executive hereby agrees to be employed by the Company, upon the terms and subject to the conditions set forth in this Agreement.
2. **Capacity and Duties.** Executive shall be employed in the capacity of President, GSE Absolute/Hyperspring Division of the Company and shall have the duties, responsibilities and authorities normally undertaken by the President of a wholly-owned subsidiary of the Company as well as such other duties, responsibilities, and authorities as are assigned to him by the Chief Executive Officer and Chief Operating Officer of the Company, including, but not limited to, those duties set forth on Exhibit A to this Employment Agreement, so long as such additional duties, responsibilities and authorities are consistent with Executive’s position as President, GSE Absolute/Hyperspring Division of the Company. The Executive shall devote substantially all of his business time and attention to the performance of his duties hereunder and will not engage in any other business, profession or occupation for compensation or otherwise without the prior written consent of the Board of Directors (the “**Board**”). Executive will spend substantially all of his working time for the Company, when not traveling on Company business, at the Company’s headquarters.
3. **Term of Employment.** The term of this Agreement shall commence on the Effective Date and continue through December 31, 2020 (the “**Initial Term**”). The Initial Term shall be automatically extended for an additional one year period on December 31 of each year, beginning December 31, 2020, unless either party provides written notice to the other of its intention not to extend at least 60 days’ prior to such date (as so extended, the “**Term**”).
4. **Compensation.** During the Term, subject to all the terms and conditions of this Agreement, and as compensation for all services to be rendered by Executive under this Agreement, the Company shall pay to or provide Executive with the following:
  - a. **Base Salary.** The Company shall pay to Executive an annual base salary (the “**Base Salary**”) of Two Hundred Fifty Thousand Dollars (\$250,000). The Executive’s Base Salary shall be reviewed at least annually with the Board, and the Board may, but shall not be required to, increase (but not decrease) the Base Salary during the Term based upon changes in cost of living, the Executive’s performance and other factors deemed relevant by the Board. The Base Salary will be payable at such intervals as salaries are paid generally to other executive officers of the Company.
  - b. **Bonus.** For each fiscal year of the Term, beginning with fiscal year 2018, the Executive shall be eligible to earn an annual bonus award (the “**Bonus**”) of up to 50% of Base Salary, based upon the achievement of annual performance goals established by Board prior to the beginning of each fiscal year. The amount of Bonus to be paid to Executive for any year of this Agreement may, at the sole discretion of the Board of Directors of the Company, be prorated for the number of months which Executive was employed by the Company during such year. Any Bonus shall be paid on or prior to March 15 of the following year.
  - c. **Restricted Stock Units.** Within 10 business days after the Effective Date, the Executive will be granted 200,000 restricted stock units (“**RSUs**”), subject to vesting and all other terms and conditions set forth in the Company’s 1995 Long Term Incentive Plan and in a written grant agreement issued to Executive in connection with the grant of such RSUs. Such written grant agreement shall reflect that (i) 100,000 RSUs shall vest quarterly and in approximately equal amounts over a period of three years beginning January 1, 2018 and ending on December 31, 2020; and (ii) 100,000 RSUs shall vest upon the achievement of certain performance measures described in the attendant written agreement.
  - d. **Benefits.** Executive shall be entitled to participate in all employee benefit plans maintained by the Company for its senior executives or employees including, without limitation, the Company’s medical, dental, vision, 401(k) and life insurance plans and the following benefits:
    - i. **Vacation.** Executive shall be entitled to vacation in accordance with the Company’s policy for its senior executives.

- ii. Automobile. The Company shall pay the gasoline in connection with Executive's automobile in accordance with the written policy and guidelines established by the Company for executive officers.
- iii. Medical and Dental/Vision Insurance. The Company shall pay Executive's monthly Medical and Dental/Vision Insurance premiums in association with Company provided health insurance plans.

5. Business Expenses. The Company shall reimburse Executive for all reasonable expenses (including, but not limited to, continuing education, business travel, and customer entertainment expenses) incurred by him in connection with his employment hereunder in accordance with the written policy and guidelines established by the Company for executive officers.

6. Non-Competition, Non-Solicitation, Non-Disparagement.

a. Acknowledgements. The Executive acknowledges and agrees that the services to be rendered by the Executive to the Company are of a special and unique character; that the Executive will obtain knowledge and skill relevant to the Company's industry, methods of doing business and marketing and investment strategies by virtue of the Executive's employment; and that the restrictive covenants and other terms and conditions of this Agreement are reasonable and reasonably necessary to protect the legitimate business interest of the Company. The Executive further acknowledges that: the amount of the Executive's compensation reflects, in part, the Executive's obligations and the Company's rights under this Agreement; that the Executive has no expectation of any additional compensation, royalties or other payment of any kind not otherwise referenced herein in connection herewith; and that the Executive will not be subject to undue hardship by reason of his full compliance with the terms and conditions of this Agreement or the Company's enforcement thereof.

b. Non-Competition. Because of the Company's legitimate business interest as described herein and the good and valuable consideration offered to the Executive, during the Term and for the 12-month period beginning on the last day of the Executive's employment with the Company, the Executive agrees and covenants not to engage in Prohibited Activity within the United States. For purposes of this Section 6, "**Prohibited Activity**" means any activity to which the Executive contributes his knowledge, directly or indirectly, in whole or in part, as an employee, employer, owner, operator, manager, advisor, consultant, agent, employee, partner, director, stockholder, officer, volunteer, intern or any other similar capacity to an entity engaged in the same or similar business as the Company anywhere in the world. Nothing herein shall prohibit the Executive from purchasing or owning less than five percent (5%) of the publicly traded securities of any corporation, provided that such ownership represents a passive investment and that the Executive is not a controlling person of, or a member of a group that controls, such corporation.

c. Non-solicitation of Employees. The Executive agrees and covenants not to directly or indirectly solicit, hire, recruit, attempt to hire or recruit, or induce the termination of employment of any employee of the Company during the Term and the 12-month period beginning on the last day of the Executive's employment with the Company.

d. Non-solicitation of Customers. The Executive understands and acknowledges that because of the Executive's experience with and relationship to the Company, he will have access to and learn about much or all of the Company's customer information. "**Customer Information**" includes, but is not limited to, names, phone numbers, addresses, e-mail addresses, order history, order preferences, chain of command, pricing information and other information identifying facts and circumstances specific to the customer. The Executive understands and acknowledges that loss of this customer relationship and/or goodwill will cause significant and irreparable harm to the Company. The Executive agrees and covenants, during the Term and for the 12-month period following the effective date of termination of this Agreement for any reason, not to directly or indirectly solicit, contact (including but not limited to e-mail, regular mail, express mail, telephone, fax, and instant message), attempt to contact or meet with the Company's current customers for purposes of offering or accepting goods or services similar to or competitive with those offered by the Company or for purposes of inducing any such customer to terminate its relationship with the Company.

e. Confidential Information. All Confidential Information which Executive may now possess, may obtain during the Term, or may create prior to the end of the Term relating to the business of the Company or of any of its customers or suppliers shall not be published, disclosed, or made accessible by him to any other person, firm, or corporation either during or after the termination of his employment or used by him except during the Term in the business and for the benefit of the Company, in each case without prior written permission of the Company. Executive shall return all tangible evidence of any Confidential Information to the Company prior to or at the termination of his employment. For purposes of this Agreement, "**Confidential Information**" means any and all information related to the Company or any of its subsidiaries that is not generally known by others with whom they compete or do business.

f. Enforcement. Executive acknowledges and agrees that the covenants contained herein are fair and reasonable in light of the consideration paid hereunder, and that damages alone shall not be an adequate remedy for any breach by Executive of his covenants which then apply and accordingly expressly agrees that, in addition to any other remedies which the Company may have, the Company shall be entitled to injunctive relief in any court of competent jurisdiction for any breach or

threatened breach of any such covenants by Executive. Nothing contained herein shall prevent or delay the Company from seeking, in any court of competent jurisdiction, specific performance or other equitable remedies in the event of any breach or intended breach by Executive of any of his obligations hereunder.

g. Tolling. The period of time applicable to any covenant in this Section 6 will be extended by the duration of any violation by Executive of such covenant.

h. Reformation. If any covenant in this Section 6 is held to be unreasonable, arbitrary, or against public policy, such covenant will be considered to be divisible with respect to scope, time, and geographic area, and such lesser scope, time, or geographic area, or all of them, as a court of competent jurisdiction may determine to be reasonable, not arbitrary, and not against public policy, will be effective, binding, and enforceable against Executive.

i. Scope. For the avoidance of doubt, all references to the Company in this Section 6 shall include any and all subsidiaries of the Company including, but not limited to, Hyperspring, LLC and Absolute Consulting, Inc.

7. Patents. Any interest in patents, patent applications, inventions, copyrights, developments, know-how and processes (“**Inventions**”) which Executive now or hereafter during the period he is employed by the Company under this Agreement may own or develop relating to the fields in which the Company or any of its subsidiaries may then be engaged shall belong to the Company; and forthwith upon request of the Company, Executive shall execute all such assignments and other documents and take all such other action as the Company may reasonably request in order to vest in the Company all his right, title, and interest in and to all Inventions, free and clear of all liens, charges, and encumbrances.

8. Termination. Executive’s employment hereunder may be terminated prior to the expiration of the Term under the following circumstances:

a. Death. Executive’s employment hereunder shall terminate upon his death.

b. Disability. If, as a result of Executive’s incapacity due to physical or mental illness, Executive shall have been unable to perform his duties hereunder on a full-time basis for a period of three (3) consecutive months, or for 180 days in any 12 month period (a “**Disability**”), the Company may, on 30 days written Notice of Termination (defined in Section 8(e)), terminate Executive’s employment if Executive fails to return to the performance of his duties hereunder on a full-time basis within said period.

c. Cause. The Company may terminate Executive’s employment hereunder for Cause. For purposes of this Agreement, the Company shall have “**Cause**” to terminate Executive’s employment upon the occurrence of any of the following:

i. the willful and continued failure by Executive to substantially perform his material duties or obligations hereunder (other than any such failure resulting from Executive’s incapacity due to physical or mental illness), after written demand for substantial performance is delivered by the Company that specifically identifies the manner in which the Company believes Executive has not substantially performed his duties or obligations, and provides the Executive with at least 30 days to effect a cure;

ii. the willful engaging by Executive in misconduct which, in the reasonable opinion of the Board, will have a material adverse effect on the reputation, operations, prospects or business relations of the Company;

iii. the conviction of Executive of any felony or the entry by Executive of any plea of nolo contendere in response to an indictment for a crime involving moral turpitude;

iv. Executive abuses alcohol, illegal drugs or other controlled substances which impact Executive’s performance of his duties;

v. the material breach by Executive of a material term or condition of this Agreement.

vi. For purposes of this Section 8(c), no act, or failure to act, on Executive’s part shall be considered “willful” if it was done, or omitted to be done, by him in good faith and with the reasonable belief that his action or omission was in the best interest of the Company. Notwithstanding the foregoing, Executive’s employment shall not be deemed to have been terminated for Cause without the following: (i) reasonable notice to Executive setting forth the reasons for the Company’s intention to terminate his employment for Cause, (ii) an opportunity for Executive, together with his counsel, to be heard before the Board, and (iii) delivery to Executive of a Notice of Termination in accordance with Section 8(e).

d. Termination Without Cause. The Executive's employment hereunder may be terminated without cause by either the Company or the Executive at any time upon at least 30 days' prior written notice. The giving by the Company of notice of its intent not to extend the Term pursuant to Section 3 shall be deemed, at the option of the Executive, to be a termination of his employment without cause ("**Deemed Termination**"). Executive may exercise that option by giving written notice thereof to the Company within 30 days of his receipt of the notice of non-renewal.

e. Notice of Termination. Any termination of Executive's employment (other than termination pursuant to Section 8(a)) shall be communicated by a Notice of Termination given by the terminating party to the other party hereto. For purposes of this Agreement, a "**Notice of Termination**" shall mean a written notice which shall indicate the specific termination provision in this Agreement relied upon and shall set forth in reasonable detail the facts and circumstances claimed to provide a basis for termination of Executive's employment under the provision so indicated.

f. Date of Termination. "**Date of Termination**" shall mean (i) if Executive's employment is terminated by his death, the date of his death, (ii) if Executive's employment is terminated pursuant to Section 8(b), 30 days after Notice of Termination is given (provided that Executive shall not have returned to the performance of his duties on a full-time basis during such 30-day period), (iii) if a Deemed Termination occurs, upon the date of Executive's notice to the Company of exercise of his option to treat such event as a termination without Cause, and (iv) if Executive's employment is terminated for any other reason, the date specified in the Notice of Termination, which shall not be earlier than the date on which the Notice of Termination is given.

9. Compensation upon Termination or During Disability.

a. Disability. During any period that Executive fails to perform his duties hereunder as a result of incapacity due to physical or mental illness ("**disability period**"), Executive shall continue to receive his full salary at the rate then in effect for such period until his employment is terminated pursuant to Section 8(b), provided that payments so made to Executive during the disability period shall be reduced by the sum of the amounts, if any, payable to Executive at or prior to the time of any such payment under disability benefit plans of the Company and which were not previously applied to reduce any such payment, and the Company shall have no further obligation to the Executive.

b. For Cause. If Executive's employment is terminated for Cause, the Company shall pay Executive his full salary through the Date of Termination at the rate in effect at the time Notice of Termination is given, and the Company shall have no further obligation to the Executive.

c. Any other Reason. If Executive's employment shall be terminated by the Company for a reason other than Death, Disability or Cause, or if Executive terminates his employment for Good Reason (defined below), upon Executive's execution of a release of claims in favor of the Company, its affiliates and their respective officers and directors in a form provided by the Company (the "**Release**") and such Release becoming effective within 21 days following the Termination Date:

i. the Company will continue to pay the Executive his Base Salary for a period of six months, payable at such intervals as salaries are paid generally to other executive officers of the Company;

ii. the Executive shall continue to be eligible to participate in all medical, dental, and vision benefits (collectively, "**Benefits**"), on the same terms and at the same level of participation and company contribution to the cost thereof, as in effect at the time of termination of employment for a period of six months following termination to the extent Executive remains eligible under the applicable employee benefit plans and to the extent Executive's eligibility is not contrary to, or does not negate, the tax favored status of the plans or of the benefits payable under the plan. If Executive is unable to continue to participate in any employee benefit plan or program provided for under this Agreement, Executive shall be compensated in respect of such inability to participate through payment by GSE to Executive, in advance, of an amount equal to the annual cost that would have been incurred by GSE if the Executive were able to participate in such plan or program.

iii. Executive shall receive a prorated Bonus equal to the product of (I) the Bonus, if any, that the Executive would have earned for the calendar year in which the Date of Termination occurred had he been employed as of the last day of such year, based on the Company's actual results of operations for such year and (II) a fraction, the numerator of which is the number of days the Executive was employed by the Company during the year of termination and the denominator of which is the number of days in such year. The prorated Bonus shall be paid on the date that annual bonuses are paid to similarly situated employees, but in no event later than the date which not later than two and one-half (2 ½) months following the end of the calendar year in which the Date of Termination occurs.

d. "**Good Reason**" shall mean the occurrence of any of the following: (a) Executive's duties, responsibilities

or authority are materially reduced as compared to those of Executive's current position without his consent; (b) Executive's Base Salary (as the same may be increased at any time hereafter) or Bonus are reduced; (c) Executive's Benefits are either discontinued or materially reduced, in the aggregate; (d) Executive's primary office or location is moved more than fifty (50) miles from Executive's current office or location; or (e) either the Company or any successor company materially breaches this Agreement.

10. Change of Control.

a. If Executive terminates his employment for Good Reason within one year following the effective date of a Change of Control, Executive shall, in lieu of any benefits provided for in Section 9, continue to receive the Base Salary and Benefits that Executive is receiving as of the effective date of the Change of Control for a period of six (6) months from the date of termination of his employment. Such Base Salary and Benefits shall be paid at such intervals as salaries are paid generally to other executive officers of the Company.

b. In addition, the Executive shall also be entitled to receive, on the Date of Termination, an amount, payable in one lump sum, equal to 50% of the average of the Bonus amounts paid to Executive for the two years prior to the year in which the Change of Control takes place.

c. In the event of Executive's decision to terminate employment for Good Reason, Executive must give notice to Company of the existence of the conditions giving rising to the termination for Good Reason within ninety (90) days of the initial existence of the conditions. Upon such notice, Company shall have a period of thirty (30) days during which it may remedy the conditions ("**Cure Period**"). If the Company fails to cure the conditions constituting the Good Reason during the Cure Period to Executive's reasonable satisfaction, Executive's termination of employment must occur within a period of ninety (90) days following the expiration of the Cure Period in order for the termination to constitute a termination pursuant to Good Reason for purposes of this Agreement.

d. For purposes of this Agreement, a "**Change in Control**" of the Company shall be deemed to have occurred as of the first day that any one or more of the following conditions shall have been satisfied:

i. Any Person (other than a Person in control of the Company as of the date of this Agreement, or other than a trustee or other fiduciary holding securities under an employee benefit plan of the Company, or a company owned directly or indirectly by the stockholders of the Company in substantially the same proportions as their ownership of voting securities of the Company) becomes the beneficial owner, directly or indirectly, of securities of the Company representing a majority of the combined voting power of the Company's then outstanding securities; or

ii. The stockholders of the Company approve: (x) a plan of complete liquidation of the Company (which includes a termination and liquidation of all Executive's rights under any arrangement governed by Section 409A of the Internal Revenue Code of 1986, as amended ("**Code**"); or (y) an agreement for the sale or disposition of all or substantially all the Company's assets; or (z) a merger, consolidation, or reorganization of the Company with or involving any other corporation, other than a merger, consolidation, or reorganization that would result in the voting securities of the Company outstanding immediately prior thereto continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity) at least a majority of the combined voting power of the voting securities of the Company (or such surviving entity) outstanding immediately after such merger, consolidation, or reorganization.

iii. For purposes of this definition of Change in Control, "**Person**" shall have the meaning ascribed to such term in Section 3(a)(9) of the Securities Exchange Act of 1934, as amended (the "**1934 Act**"), and used in Section 13(d) and 14(d) thereof, including a "group" as defined in Section 13(d) thereof, and "**Beneficial Owner**" shall have the meaning ascribed to such term in Rule 13d-3 of the General Rules and regulations under the 1934 Act.

11. Successors; Binding Agreement. This Agreement is personal to the Executive and shall not be assigned by the Executive. Any purported assignment by the Executive shall be null and void from the initial date of the purported assignment. The Company may assign this Agreement to any successor or assign (whether direct or indirect, by purchase, merger, consolidation or otherwise) to all or substantially all of the business or assets of the Company, including the restrictive covenants provided for in Section 6, which Executive agrees shall be enforceable by any such successor or assign. The Company will require any successor (whether direct or indirect, by purchase, merger, consolidation or otherwise) to all or substantially all of the business and/or assets of the Company, by agreement in form and substance reasonably satisfactory to Executive, to expressly assume and agree to perform this Agreement in the same manner and to the same extent that the Company would be required to perform it if no such succession had taken place. This Agreement shall inure to the benefit of the Company and permitted successors and assigns.

12. No Third Party Beneficiaries. This Agreement does not create, and shall not be construed as creating, any rights enforceable by any person not a party to this Agreement.

13. Fees and Expenses. The Company shall pay all reasonable legal fees and related expenses (including the costs of experts, evidence, and reasonable attorney's fees) incurred by Executive as a result of a contest or dispute relating to this Agreement if such contest or dispute is settled or adjudicated on terms that are substantially in favor of Executive. In addition, the Company shall pay Executive interest, at the prevailing prime rate, on any amounts that are determined to be payable to Executive hereunder that are not paid when due.

14. Representations and Warranties of Executive. Executive represents and warrants to the Company that (a) Executive is under no contractual or other restriction or obligation which is inconsistent with the execution of this Agreement, the performance of his duties hereunder, or the other rights of the Company hereunder and (b) Executive is under no physical or mental disability that would hinder his performance of duties under this Agreement.

15. Life Insurance. If requested by the Company, Executive shall submit to such physical examinations and otherwise take such actions and execute and deliver such documents as may be reasonably necessary to enable the Company, at its expense and for its own benefit, to obtain life insurance on the life of Executive. Executive has no reason to believe that his life is not insurable with a reputable insurance company at rates now prevailing in the City of Baltimore for healthy men of his age.

16. Modification. This Agreement sets forth the entire understanding of the parties with respect to the subject matter hereof, supersedes all existing agreements between them concerning such subject matter, and may be modified only by a written instrument duly executed by each party.

17. Notices. Any notice or other communication required or permitted to be given hereunder shall be in writing and shall be mailed by certified mail, return receipt requested, or delivered against receipt to the party to whom it is to be given at the address of such party set forth in the preamble to this Agreement (or to such other address as the party shall have furnished in writing in accordance with the provisions of this Section).

18. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Maryland, without giving effect to conflict of laws. Any action or proceeding by either of the parties to enforce this Agreement shall be brought only in a state or federal court located in the state of Maryland. The parties hereby irrevocably submit to the exclusive jurisdiction of such courts and waive the defense of inconvenient forum to the maintenance of any such action or proceeding in such venue.

19. 409A. This Agreement is intended to comply with the requirements of Section 409A of the Internal Revenue Code of 1986, as amended (the "**Code**"), and any exemption from Section 409A of the Code, and shall in all respects be administered in accordance with and interpreted to ensure compliance with Section 409A of the Code. Executive's termination of employment under this Agreement shall be interpreted in a manner consistent with the separation from service rules under Section 409A of the Code. For purposes of Section 409A of the Code, each payment made under this Agreement shall be treated as a separate payment and the right to a series of payments under this Agreement shall be treated as a right to a series of separate payments. In no event shall Executive, directly or indirectly, designate the calendar year of the payment. Furthermore, if, at the time of termination of employment with the Company, Company has stock which is publicly traded on an established securities market and Executive is a "specified employee" (as defined in Section 409A of the Code) and it is necessary to postpone the commencement of any payments or benefits otherwise payable pursuant to this Agreement as a result of such termination of employment to prevent any accelerated or additional tax under Section 409A of the Code, then Company shall postpone the commencement of the payment of such payment or benefits hereunder (without any reduction in such payments or benefits ultimately paid or provided to Executive) that are not otherwise paid within the short-deferral exception under Section 409A of the Code and are in excess of the lesser of two (2) times (i) Executive's then annual compensation or (ii) the limit on compensation then set forth in Section 401(a)(17) of the Code, until the first payroll date that occurs after the date that is six months following Executive's separation from service with the Company (within the meaning of Section 409A of the Code). The accumulated postponed amount shall be paid in a lump sum payment within ten days after the end of the six month period. Notwithstanding any provision of this Agreement to the contrary, in no event shall the timing of the Executive's execution of the Release, directly or indirectly, result in the Executive designating the calendar year of payment, and if a payment that is subject to execution of the release could be made in more than one taxable year, payment shall be made in the later taxable year.

20. Survival. Upon the expiration or other termination of this Agreement, the respective rights and obligations of the parties hereto shall survive such expiration or other termination to the extent necessary to carry out the intentions of the parties under this Agreement.

21. Acknowledgment of Full Understanding. THE EXECUTIVE ACKNOWLEDGES AND AGREES THAT HE HAS FULLY READ, UNDERSTANDS AND VOLUNTARILY ENTERS INTO THIS AGREEMENT. THE EXECUTIVE ACKNOWLEDGES AND AGREES THAT HE HAS HAD AN OPPORTUNITY TO ASK QUESTIONS AND CONSULT WITH

AN ATTORNEY OF HIS CHOICE BEFORE SIGNING THIS AGREEMENT.

IN WITNESS WHEREOF, the parties have duly executed this Agreement as of the date first above written.

GSE SYSTEMS, INC.

EXECUTIVE

By:

Kyle J. Loudermilk,  
Chief Executive Officer

Paul Abbott

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**Exhibit A**  
**Duties of the President, GSE Absolute/Hyperspring Division**

- Ensure the business success of the Division, hitting revenue, orders, gross margins targets
- Establish effective KPIs for the business and talent of the Division, and manage to those KPIs to ensure success
- Provide operational transparency to the Senior Leadership Team by tracking and reporting the KPIs to the Senior Leadership Team (“SLT”) weekly and providing insight to improvement
- Provide executive leadership the Division, meeting regularly with key leaders of the Division as well as with the SLT to ensure effective communications, relationship building, and operational success
- Meeting regularly with key leaders of the SLT to ensure alignment of Division and GSE overall effort
- Communicate and implement the combined organization’s vision, mission and overall direction internally and externally
- Lead, guide and direct other members of the SLT to ensure success of Division and overall GSE
- Evaluate the success of the organization using effective KPIs



## SECOND AMENDMENT AND REAFFIRMATION AGREEMENT

THIS SECOND AMENDMENT AND REAFFIRMATION AGREEMENT is dated as of May 25, 2018 (this "Agreement"), by and among GSE SYSTEMS, INC., a Delaware corporation ("Parent"), GSE PERFORMANCE SOLUTIONS, INC., a Delaware corporation ("GSE Performance" and collectively with Parent, the "Borrowers" and each a "Borrower"), GSE TRUE NORTH CONSULTING, LLC, a Delaware limited liability company ("True North"), HYPERSPRING, LLC, a Delaware limited liability company ("Hyperspring"), ABSOLUTE CONSULTING, INC., a Delaware corporation ("Absolute" and together with True North and Hyperspring collectively, the "Guarantors" and each a "Guarantor" and together with the Borrowers collectively, the "Loan Parties" and each a "Loan Party"), and CITIZENS BANK, NATIONAL ASSOCIATION (the "Bank"). Capitalized terms used herein but not otherwise defined herein shall have the meanings ascribed to such terms in the Credit Agreement (as defined below) or the Guaranty (as defined below), as applicable.

WHEREAS, pursuant to the terms of that certain Credit and Security Agreement, dated as of December 29, 2016 (as the same may have been amended, renewed, replaced, or supplemented from time to time prior to the Closing Date (as defined in the Credit Agreement), the "Original Credit Agreement"), by and among Borrowers and Bank, the Bank agreed to provide a revolving line of credit to Borrowers in an amount not to exceed \$5,000,000 pursuant to a revolving line of credit note dated as of the Initial Closing Date (as defined in the Credit Agreement) of the Borrowers payable to the order of the Bank (the "RLOC Note");

WHEREAS, Hyperspring executed and delivered a Guaranty and Suretyship Agreement (as the same may have been amended, restated or modified from time to time, the "Hyperspring Guaranty") dated as of December 29, 2016 in favor of Bank in connection with Borrower entering into the Original Credit Agreement;

WHEREAS, Absolute executed and delivered a Guaranty and Suretyship Agreement (as the same may have been amended, restated or modified from time to time, the "Absolute Guaranty") dated as of September 20, 2017 in favor of Bank in connection with the Original Credit Agreement;

WHEREAS, True North executed and delivered a Guaranty and Suretyship Agreement (as the same may have been amended, restated or modified from time to time, the "True North Guaranty" and together with the Hyperspring Guaranty and Absolute Guaranty collectively, the "Guaranty") dated as of May 11, 2018 in favor of Bank in connection with the Credit Agreement;

WHEREAS, GSE Performance executed and delivered a Pledge Agreement (as the same may have been amended, restated or modified from time to time, the "GSE Performance Pledge Agreement") dated as of September 20, 2017 in favor of Bank in connection with the Original Credit Agreement;

WHEREAS, Borrowers and Bank entered into that certain Amended and Restated Credit Agreement (the "Credit Agreement") dated as of May 11, 2018 to continue the RLOC and to provide for a Term Loan Facility in a principal amount up to \$25,000,000;

WHEREAS, Guarantors and Bank entered into that certain Security Agreement (the "Security Agreement") dated as of May 11, 2018; and

WHEREAS, the parties hereto intend that, (a) the Credit Documents shall be amended subject to the terms and conditions set forth herein, (b) the obligations under the Guaranty and the Security Agreement will continue to be in effect, on the terms set forth therein, and (c) the Guaranty and the Security Agreement will continue to support and otherwise benefit the Obligations (as defined in the Guaranty).

NOW, THEREFORE, in consideration of the foregoing and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree, under seal, as follows:

### Article I

Section I.01. Amendments to Credit Documents. The Credit Documents (as defined in the Credit Agreement) are hereby amended as follows:

- (a) All references in the Credit Documents to "True North Consulting LLC, a Colorado limited liability company" are hereby deleted and replaced with "GSE True North Consulting, LLC, a Delaware limited liability company".
- (b) Exhibit A to the GSE Performance Pledge Agreement is hereby deleted and replaced with Exhibit A attached hereto.

### Article II

#### Reaffirmation

Section II.01. Reaffirmation.

- (a) Each Guarantor hereby: (i) affirms and confirms its guarantee and other commitments and obligations, under the Guaranty, the Security Agreement and any other Credit Documents executed by the Guarantor and (ii) confirms that each guarantee and other commitments and obligations under the Guaranty, the Security Agreement and any other Credit Documents executed by Guarantor shall continue to be in full force and effect and shall continue to accrue to the benefit of the Bank notwithstanding the effectiveness of the Credit Agreement.
- (b) Each Borrower hereby affirms the execution and delivery to Bank of the Credit Documents, and the

Credit Documents are continued in full force and effect and are in all respects hereby affirmed and ratified.

### Article III

#### Representations and Warranties

Each Loan Party hereby represents and warrants, which representations and warranties shall survive execution and delivery of this Agreement, as follows:

Section III.01. Organization. Each Loan Party is duly organized, validly existing and in good standing under the laws of the jurisdiction of its organization.

Section III.02. Authority; Enforceability. Each Loan Party has the corporate or limited liability company power to execute, deliver and carry out the terms and provisions of this Agreement and has taken all necessary corporate and other action, to authorize the execution, delivery and performance by it of this Agreement. Each Loan Party has duly executed and delivered this Agreement, and this Agreement constitutes a legal, valid and binding obligation of such Loan Party, enforceable against it in accordance with the terms hereof.

Section III.03. Credit Documents. The representations and warranties made by each Loan Party and set forth in the Credit Documents are true and correct on and as of the date hereof with the same effect as though made on and as of such date, except to the extent such representations and warranties expressly relate to an earlier date (in which case any such representation and warranty shall have been true and correct as of such earlier date).

### Article IV

#### Miscellaneous

Section IV.01. Conditions to Effectiveness of Agreement. The Bank's willingness to agree to the amendments set forth in this Agreement is subject to the delivery by the Borrower to the Bank of the items described in summary fashion on Exhibit B attached hereto.

Section IV.02. Notices. All communications and notices hereunder shall be in writing and given as provided in Section 10.9 of the Credit Agreement or Section 13 of the Guaranty, as applicable.

Section IV.03. Expenses. Each Loan Party acknowledges and agrees that the Bank shall be entitled to reimbursement of expenses as provided in Section 10.2 of the Credit Agreement and Section 10 of the Guaranty, as applicable.

Section IV.04. Credit Document. This Agreement is a "Credit Document" executed pursuant to the Credit Agreement and shall be construed, administered and applied in accordance with the terms and provisions thereof.

Section IV.05. Successors and Assigns. The provisions of this Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns.

Section IV.06. No Novation. Nothing herein contained shall be construed as a substitution or novation of the obligations outstanding under the Credit Documents, which shall remain in full force and effect except as modified by this Agreement and the Credit Agreement.

Section IV.07. Governing Law; Waiver of Jury Trial. This Agreement shall be construed in accordance with and governed by the laws of the State of Delaware. EACH LOAN PARTY HEREBY KNOWINGLY, VOLUNTARILY AND INTENTIONALLY WAIVES ANY RIGHT TO A TRIAL BY JURY IN ANY SUIT, ACTION OR PROCEEDING BROUGHT OR INSTITUTED BY ANY PARTY HERETO OR ANY SUCCESSOR OR ASSIGN OF ANY PARTY, ON OR WITH RESPECT TO THIS AGREEMENT, ANY OF THE OTHER DOCUMENTS, THE COLLATERAL OR THE DEALINGS OF THE PARTIES WITH RESPECT HERETO OR THERETO, WHETHER BY CLAIM OR COUNTERCLAIM.

Section IV.08. Remaining Force and Effect. Except as specifically amended hereby, the Credit Documents remain in full force and effect in accordance with their original terms and conditions.

***[Remainder of Page Intentionally Left Blank]***

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IN WITNESS WHEREOF, each of the parties hereto has caused this Agreement to be duly executed under seal by its respective authorized officers as of the day and year first above written.

**BANK:**

Witness/Attest:

**CITIZENS BANK, NATIONAL ASSOCIATION**

By: (SEAL)  
Edward S. Winslow  
Senior Vice President

**BORROWERS:**

Witness/Attest:

**GSE SYSTEMS, INC.**

By: (SEAL)  
Emmett Pepe  
Chief Financial Officer

Witness/Attest:

**GSE PERFORMANCE SOLUTIONS, INC.**

By: (SEAL)  
Emmett Pepe  
Treasurer

**GUARANTORS:**

Witness/Attest:

**ABSOLUTE CONSULTING, INC.**

By: (SEAL)  
Emmett Pepe  
Treasurer

Witness/Attest:

**HYPERSPRING, LLC**

By: (SEAL)  
Emmett Pepe  
Treasurer

Witness/Attest:

**GSE TRUE NORTH CONSULTING, LLC**

By: (SEAL)  
Emmett Pepe  
Treasurer

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**EXHIBIT A**  
**ISSUERS**

Absolute Consulting, Inc., a Delaware corporation (100%)

GSE True North Consulting, LLC, a Delaware limited liability company (100%)

Hyperspring, LLC, a Delaware limited liability company (100%)

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**EXHIBIT B**  
**CLOSING CHECKLIST**

See attachment.

## INDEMNIFICATION AGREEMENT

This Indemnification Agreement (“**Agreement**”), dated as of [DATE], is by and between GSE Systems, Inc., a Delaware corporation (the “**Company**”) and [NAME] (the “**Indemnitee**”).

WHEREAS, Indemnitee is or will become [a director/an officer] of the Company;

WHEREAS, both the Company and Indemnitee recognize the increased risk of litigation and other claims being asserted against a person occupying such position with a public company;

WHEREAS, the board of directors of the Company (the “**Board**”) has determined that enhancing the ability of the Company to retain and attract the most capable persons is in the best interests of the Company and, therefore, the Company should seek to assure such persons that indemnification and insurance coverage is available; and

WHEREAS, in recognition of the need to provide Indemnitee with substantial protection against personal liability, in order to procure Indemnitee’s [continued] service and to enhance Indemnitee’s ability to serve the Company in an effective manner, and in order to provide such protection pursuant to express contract rights (intended to be enforceable irrespective of, among other things, any amendment to the Company’s certificate of incorporation or bylaws (collectively, the “**Constituent Documents**”), any change in the composition of the Board or any change in control or business combination transaction relating to the Company), the Company wishes to provide in this Agreement for the indemnification of, and the advancement of Expenses (as defined in Section 1(f) below) to, Indemnitee as set forth in this Agreement and for the [continued] coverage of Indemnitee under the Company’s directors’ and officers’ liability insurance policies.

NOW, THEREFORE, in consideration of the foregoing and the Indemnitee’s agreement to [continue to] provide services to the Company, the parties agree as follows:

1. **Definitions.** For purposes of this Agreement, the following terms shall have the following meanings:
  - (a) “**Beneficial Owner**” has the meaning given to the term “beneficial owner” in Rule 13d-3 under the Securities Exchange Act of 1934, as amended (the “**Exchange Act**”).
  - (b) “**Change in Control**” means the occurrence after the date of this Agreement of any of the following events:
    - (i) any Person is or becomes the Beneficial Owner, directly or indirectly, of securities of the Company representing 50% or more of the Company’s then outstanding Voting Securities;
    - (ii) the consummation of a reorganization, merger or consolidation, unless immediately following such reorganization, merger or consolidation, all of the Beneficial Owners of the Voting Securities of the Company immediately prior to such transaction beneficially own, directly or indirectly, more than 25% of the combined voting power of the outstanding Voting Securities of the entity resulting from such transaction;
    - (iii) during any period of two consecutive years, not including any period prior to the execution of this Agreement, individuals who at the beginning of such period constituted the Board (including for this purpose any new directors whose election by the Board or nomination for election by the Company’s stockholders was approved by a vote of at least a majority of the directors then still in office who either were directors at the beginning of the period or whose election or nomination for election was previously so approved) cease for any reason to constitute at least a majority of the Board; or
    - (iv) the stockholders of the Company approve a plan of complete liquidation or dissolution of the Company or an agreement for the sale or disposition by the Company of all or substantially all of the Company’s assets.
  - (c) “**Claim**” means:
    - (i) any threatened, pending or completed action, suit, proceeding or alternative dispute resolution mechanism, whether civil, criminal, administrative, arbitral, investigative or other, and whether made pursuant to federal, state or other law; or
    - (ii) any inquiry, hearing or investigation that the Indemnitee determines might lead to the institution of any such action, suit, proceeding or alternative dispute resolution mechanism.

- (d) **“Delaware Court”** shall have the meaning ascribed to it in Section 9(e) below.
- (e) **“Disinterested Director”** means a director of the Company who is not and was not a party to the Claim in respect of which indemnification is sought by Indemnitee.
- (f) **“Expenses”** means any and all expenses including attorneys’ fees, court costs, transcript costs, travel expenses, copying, printing and binding costs, telephone charges, and all other costs and expenses incurred in connection with investigating, defending, being a witness in or participating in (including on appeal), or preparing to defend, be a witness or participate in, any Claim. Expenses also shall include (i) Expenses incurred in connection with any appeal resulting from any Claim, including without limitation the premium, security for, and other costs relating to any cost bond, supersedeas bond, or other appeal bond or its equivalent, and (ii) for purposes of Section 5 only, Expenses incurred by Indemnitee in connection with the interpretation, enforcement or defense of Indemnitee’s rights under this Agreement, by litigation or otherwise. Expenses, however, shall not include amounts paid in settlement by Indemnitee or the amount of judgments or fines against Indemnitee.
- (g) **“Expense Advance”** means any payment of Expenses advanced to Indemnitee by the Company pursuant to Section 4 or Section 5 hereof.
- (h) **“Indemnifiable Event”** means any event or occurrence, whether occurring [before,] on or after the date of this Agreement, related to the fact that Indemnitee is or was a director, officer, employee or agent of the Company or any subsidiary of the Company, or is or was serving at the request of the Company as a director, officer, employee, member, manager, trustee or agent of any other corporation, limited liability company, partnership, joint venture, trust or other entity or enterprise (collectively with the Company, **“Enterprise”**) or by reason of an action or inaction by Indemnitee in any such capacity (whether or not serving in such capacity at the time any Loss is incurred for which indemnification can be provided under this Agreement).
- (i) **“Independent Counsel”** means a law firm, or a member of a law firm, that is experienced in matters of corporation law and neither presently performs, nor in the past three (3) years has performed, services for either: (i) the Company or Indemnitee (other than in connection with matters concerning Indemnitee under this Agreement or of other indemnitees under similar agreements) or (ii) any other party to the Claim giving rise to a claim for indemnification hereunder. Notwithstanding the foregoing, the term “Independent Counsel” shall not include any person who, under the applicable standards of professional conduct then prevailing, would have a conflict of interest in representing either the Company or Indemnitee in an action to determine Indemnitee’s rights under this Agreement.
- (j) **“Losses”** means any and all Expenses, damages, losses, liabilities, judgments, fines, penalties (whether civil, criminal or other), ERISA excise taxes, amounts paid or payable in settlement, including any interest, assessments and all other charges paid or payable in connection with investigating, defending, being a witness in or participating in (including on appeal), or preparing to defend, be a witness or participate in, any Claim.
- (k) **“Person”** means any individual, corporation, firm, partnership, joint venture, limited liability company, estate, trust, business association, organization, governmental entity or other entity and includes the meaning set forth in Sections 13(d) and 14(d) of the Exchange Act.
- (l) **“Standard of Conduct Determination”** shall have the meaning ascribed to it in Section 9(b) below.
- (m) **“Voting Securities”** means any securities of the Company that vote generally in the election of directors.

2. **Services to the Company.** Indemnitee agrees to [serve/continue to serve] as a [director or officer] of the Company for so long as Indemnitee is duly elected or appointed or until Indemnitee tenders [his/her] resignation or is no longer serving in such capacity. This Agreement shall not be deemed an employment agreement between the Company (or any of its subsidiaries or Enterprise) and Indemnitee. Indemnitee specifically acknowledges that [his/her] [employment with/service to] the Company or any of its subsidiaries or Enterprise is at will and the Indemnitee may be discharged at any time for any reason, with or without cause, except as may be otherwise provided in any written employment agreement between Indemnitee and the Company (or any of its subsidiaries or Enterprise), other applicable formal severance policies duly adopted by the Board or, with respect to service as a director or officer of the Company, by the Company’s Constituent Documents or Delaware law. This Agreement shall continue in force after Indemnitee has ceased to serve as a director or officer of the Company or, at the request of the Company, of any of its subsidiaries or Enterprise, as provided in Section 12 hereof.

3. **Indemnification.** Subject to Section 9 and Section 10 of this Agreement, the Company shall indemnify Indemnitee, to the fullest extent permitted by the laws of the State of Delaware in effect on the date hereof, or as such laws may from time to time hereafter be amended to increase the scope of such permitted indemnification, against any and all Losses if Indemnitee was or is or becomes a party to or participant in, or is threatened to be made a party to or participant in, any Claim by reason of or arising in part out of an Indemnifiable Event, including, without limitation, Claims brought by or in the right of the Company, Claims brought by third parties, and Claims in which the Indemnitee is solely a witness.

4. Advancement of Expenses. Indemnitee shall have the right to advancement by the Company, prior to the final disposition of any Claim by final adjudication to which there are no further rights of appeal, of any and all Expenses actually and reasonably paid or incurred by Indemnitee in connection with any Claim arising out of an Indemnifiable Event. Indemnitee's right to such advancement is not subject to the satisfaction of any standard of conduct. Without limiting the generality or effect of the foregoing, within thirty (30) days after any request by Indemnitee, the Company shall, in accordance with such request, (a) pay such Expenses on behalf of Indemnitee, (b) advance to Indemnitee funds in an amount sufficient to pay such Expenses, or (c) reimburse Indemnitee for such Expenses. In connection with any request for Expense Advances, Indemnitee shall not be required to provide any documentation or information to the extent that the provision thereof would undermine or otherwise jeopardize attorney-client privilege. In connection with any request for Expense Advances, Indemnitee shall execute and deliver to the Company an undertaking (which shall be accepted without reference to Indemnitee's ability to repay the Expense Advances), in the form attached hereto as Exhibit A, to repay any amounts paid, advanced, or reimbursed by the Company for such Expenses to the extent that it is ultimately determined, following the final disposition of such Claim, that Indemnitee is not entitled to indemnification hereunder. Indemnitee's obligation to reimburse the Company for Expense Advances shall be unsecured and no interest shall be charged thereon.

5. Indemnification for Expenses in Enforcing Rights. To the fullest extent allowable under applicable law, the Company shall also indemnify against, and, if requested by Indemnitee, shall advance to Indemnitee subject to and in accordance with Section 4, any Expenses actually and reasonably paid or incurred by Indemnitee in connection with any action or proceeding by Indemnitee for (a) indemnification or reimbursement or advance payment of Expenses by the Company under any provision of this Agreement, or under any other agreement or provision of the Constituent Documents now or hereafter in effect relating to Claims relating to Indemnifiable Events, and/or (b) recovery under any directors' and officers' liability insurance policies maintained by the Company. Indemnitee shall be required to reimburse the Company in the event that a final judicial determination is made that such action brought by Indemnitee was frivolous or not made in good faith.

6. Partial Indemnity. If Indemnitee is entitled under any provision of this Agreement to indemnification by the Company for a portion of any Losses in respect of a Claim related to an Indemnifiable Event but not for the total amount thereof, the Company shall nevertheless indemnify Indemnitee for the portion thereof to which Indemnitee is entitled.

7. Notification and Defense of Claims.

(a) Notification of Claims. Indemnitee shall notify the Company in writing as soon as practicable of any Claim which could relate to an Indemnifiable Event or for which Indemnitee could seek Expense Advances, including a brief description (based upon information then available to Indemnitee) of the nature of, and the facts underlying, such Claim. The failure by Indemnitee to timely notify the Company hereunder shall not relieve the Company from any liability hereunder unless the Company's ability to participate in the defense of such claim was materially and adversely affected by such failure. If at the time of the receipt of such notice, the Company has directors' and officers' liability insurance in effect under which coverage for Claims related to Indemnifiable Events is potentially available, the Company shall give prompt written notice to the applicable insurers in accordance with the procedures set forth in the applicable policies. The Company shall provide to Indemnitee a copy of such notice delivered to the applicable insurers, and copies of all subsequent correspondence between the Company and such insurers regarding the Claim, in each case substantially concurrently with the delivery or receipt thereof by the Company.

(b) Defense of Claims. The Company shall be entitled to participate in the defense of any Claim relating to an Indemnifiable Event at its own expense and, except as otherwise provided below, to the extent the Company so wishes, it may assume the defense thereof with counsel reasonably satisfactory to Indemnitee. After notice from the Company to Indemnitee of its election to assume the defense of any such Claim, the Company shall not be liable to Indemnitee under this Agreement or otherwise for any Expenses subsequently directly incurred by Indemnitee in connection with Indemnitee's defense of such Claim other than reasonable costs of investigation or as otherwise provided below. Indemnitee shall have the right to employ its own legal counsel in such Claim, but all Expenses related to such counsel incurred after notice from the Company of its assumption of the defense shall be at Indemnitee's own expense; provided, however, that if (i) Indemnitee's employment of its own legal counsel has been authorized by the Company, (ii) Indemnitee has reasonably determined that there may be a conflict of interest between Indemnitee and the Company in the defense of such Claim, (iii) after a Change in Control, Indemnitee's employment of its own counsel has been approved by the Independent Counsel or (iv) the Company shall not in fact have employed counsel to assume the defense of such Claim, then Indemnitee shall be entitled to retain its own separate counsel (but not more than one law firm plus, if applicable, local counsel in respect of any such Claim) and all Expenses related to such separate counsel shall be borne by the Company.

8. Procedure upon Application for Indemnification. In order to obtain indemnification pursuant to this Agreement, Indemnitee shall submit to the Company a written request therefor, including in such request such documentation and information as is reasonably available to Indemnitee and is reasonably necessary to determine whether and to what extent Indemnitee is entitled to indemnification following the final disposition of the Claim. Indemnification shall be made insofar as the Company determines Indemnitee is entitled to indemnification in accordance with Section 9 below.

9. Determination of Right to Indemnification.

(a) Mandatory Indemnification; Indemnification as a Witness.

(i) To the extent that Indemnitee shall have been successful on the merits or otherwise in defense of any Claim relating to an Indemnifiable Event or any portion thereof or in defense of any issue or matter therein, including without limitation dismissal without prejudice, Indemnitee shall be indemnified against all Losses relating to such Claim in accordance with Section 3 to the fullest extent allowable by law.

(ii) To the extent that Indemnitee's involvement in a Claim relating to an Indemnifiable Event is to prepare to serve



and serve as a witness, and not as a party, the Indemnitee shall be indemnified against all Losses incurred in connection therewith to the fullest extent allowable by law.

(b) Standard of Conduct. To the extent that the provisions of Section 9(a) are inapplicable to a Claim related to an Indemnifiable Event that shall have been finally disposed of, any determination of whether Indemnitee has satisfied any applicable standard of conduct under Delaware law that is a legally required condition to indemnification of Indemnitee hereunder against Losses relating to such Claim and any determination that Expense Advances must be repaid to the Company (a “**Standard of Conduct Determination**”) shall be made as follows:

- (i) if no Change in Control has occurred, (A) by a majority vote of the Disinterested Directors, even if less than a quorum of the Board, (B) by a committee of Disinterested Directors designated by a majority vote of the Disinterested Directors, even though less than a quorum or (C) if there are no such Disinterested Directors, by Independent Counsel in a written opinion addressed to the Board, a copy of which shall be delivered to Indemnitee; and
- (ii) if a Change in Control shall have occurred, (A) if the Indemnitee so requests in writing, by a majority vote of the Disinterested Directors, even if less than a quorum of the Board or (B) otherwise, by Independent Counsel in a written opinion addressed to the Board, a copy of which shall be delivered to Indemnitee.

The Company shall indemnify and hold harmless Indemnitee against and, if requested by Indemnitee, shall reimburse Indemnitee for, or advance to Indemnitee, within thirty (30) days of such request, any and all Expenses incurred by Indemnitee in cooperating with the person or persons making such Standard of Conduct Determination.

(c) Making the Standard of Conduct Determination. The Company shall use its reasonable best efforts to cause any Standard of Conduct Determination required under Section 9(b) to be made as promptly as practicable. If the person or persons designated to make the Standard of Conduct Determination under Section 9(b) shall not have made a determination within thirty (30) days after the later of (A) receipt by the Company of a written request from Indemnitee for indemnification pursuant to Section 8 (the date of such receipt being the “**Notification Date**”) and (B) the selection of an Independent Counsel, if such determination is to be made by Independent Counsel, then Indemnitee shall be deemed to have satisfied the applicable standard of conduct; provided that such 30-day period may be extended for a reasonable time, not to exceed an additional thirty (30) days, if the person or persons making such determination in good faith requires such additional time to obtain or evaluate information relating thereto. Notwithstanding anything in this Agreement to the contrary, no determination as to entitlement of Indemnitee to indemnification under this Agreement shall be required to be made prior to the final disposition of any Claim.

(d) Payment of Indemnification. If, in regard to any Losses:

- (i) Indemnitee shall be entitled to indemnification pursuant to Section 9(a);
- (ii) no Standard of Conduct Determination is legally required as a condition to indemnification of Indemnitee hereunder; or
- (iii) Indemnitee has been determined or deemed pursuant to Section 9(b) or Section 9(c) to have satisfied the Standard of Conduct Determination,

then the Company shall pay to Indemnitee, within five (5) days after the later of (A) the Notification Date or (B) the earliest date on which the applicable criterion specified in clause (i), (ii) or (iii) is satisfied, an amount equal to such Losses.

(e) Selection of Independent Counsel for Standard of Conduct Determination. If a Standard of Conduct Determination is to be made by Independent Counsel pursuant to Section 9.1(b)(i), the Independent Counsel shall be selected by the Board of Directors, and the Company shall give written notice to Indemnitee advising [him/her] of the identity of the Independent Counsel so selected. If a Standard of Conduct Determination is to be made by Independent Counsel pursuant to Section 9.1(b)(ii), the Independent Counsel shall be selected by Indemnitee, and Indemnitee shall give written notice to the Company advising it of the identity of the Independent Counsel so selected. In either case, Indemnitee or the Company, as applicable, may, within five (5) days after receiving written notice of selection from the other, deliver to the other a written objection to such selection; provided, however, that such objection may be asserted only on the ground that the Independent Counsel so selected does not satisfy the criteria set forth in the definition of “Independent Counsel” in Section 1(i), and the objection shall set forth with particularity the factual basis of such assertion. Absent a proper and timely objection, the person or firm so selected shall act as Independent Counsel. If such written objection is properly and timely made and substantiated, (i) the Independent Counsel so selected may not serve as Independent Counsel unless and until such objection is withdrawn or a court has determined that such objection is without merit; and (ii) the non-objecting party may, at its option, select an alternative Independent Counsel and give written

notice to the other party advising such other party of the identity of the alternative Independent Counsel so selected, in which case the provisions of the two immediately preceding sentences, the introductory clause of this sentence and numbered clause (i) of this sentence shall apply to such subsequent selection and notice. If applicable, the provisions of clause (ii) of the immediately preceding sentence shall apply to successive alternative selections. If no Independent Counsel that is permitted under the foregoing provisions of this Section 9(e) to make the Standard of Conduct Determination shall have been selected within twenty (20) days after the Company gives its initial notice pursuant to the first sentence of this Section 9(e) or Indemnitee gives its initial notice pursuant to the second sentence of this Section 9(e), as the case may be, either the Company or Indemnitee may petition the Court of Chancery of the State of Delaware (“**Delaware Court**”) to resolve any objection which shall have been made by the Company or Indemnitee to the other’s selection of Independent Counsel and/or to appoint as Independent Counsel a person to be selected by the Court or such other person as the Court shall designate, and the person or firm with respect to whom all objections are so resolved or the person or firm so appointed will act as Independent Counsel. In all events, the Company shall pay all of the reasonable fees and expenses of the Independent Counsel incurred in connection with the Independent Counsel’s determination pursuant to Section 9(b).

(f) Presumptions and Defenses.

- (i) Indemnitee’s Entitlement to Indemnification. In making any Standard of Conduct Determination, the person or persons making such determination shall presume that Indemnitee has satisfied the applicable standard of conduct and is entitled to indemnification, and the Company shall have the burden of proof to overcome that presumption and establish that Indemnitee is not so entitled. Any Standard of Conduct Determination that is adverse to Indemnitee may be challenged by the Indemnitee in the Delaware Court. No determination by the Company (including by its directors or any Independent Counsel) that Indemnitee has not satisfied any applicable standard of conduct may be used as a defense to any legal proceedings brought by Indemnitee to secure indemnification or reimbursement or advance payment of Expenses by the Company hereunder or create a presumption that Indemnitee has not met any applicable standard of conduct.
- (ii) Reliance as a Safe Harbor. For purposes of this Agreement, and without creating any presumption as to a lack of good faith if the following circumstances do not exist, Indemnitee shall be deemed to have acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the Company if Indemnitee’s actions or omissions to act are taken in good faith reliance upon the records of the Company, including its financial statements, or upon information, opinions, reports or statements furnished to Indemnitee by the officers or employees of the Company or any of its subsidiaries in the course of their duties, or by committees of the Board or by any other Person (including legal counsel, accountants and financial advisors) as to matters Indemnitee reasonably believes are within such other Person’s professional or expert competence and who has been selected with reasonable care by or on behalf of the Company. In addition, the knowledge and/or actions, or failures to act, of any director, officer, agent or employee of the Company shall not be imputed to Indemnitee for purposes of determining the right to indemnity hereunder.
- (iii) No Other Presumptions. For purposes of this Agreement, the termination of any Claim by judgment, order, settlement (whether with or without court approval) or conviction, or upon a plea of nolo contendere or its equivalent, will not create a presumption that Indemnitee did not meet any applicable standard of conduct or have any particular belief, or that indemnification hereunder is otherwise not permitted.
- (iv) Defense to Indemnification and Burden of Proof. It shall be a defense to any action brought by Indemnitee against the Company to enforce this Agreement (other than an action brought to enforce a claim for Losses incurred in defending against a Claim related to an Indemnifiable Event in advance of its final disposition) that it is not permissible under applicable law for the Company to indemnify Indemnitee for the amount claimed. In connection with any such action or any related Standard of Conduct Determination, the burden of proving such a defense or that the Indemnitee did not satisfy the applicable standard of conduct shall be on the Company.

10. Exclusions from Indemnification. Notwithstanding anything in this Agreement to the contrary, the Company shall not be obligated

to:

- (a) indemnify or advance funds to Indemnitee for Expenses or Losses with respect to proceedings initiated by Indemnitee, including any proceedings against the Company or its directors, officers, employees or other indemnitees and not by way of defense, except:
  - (i) proceedings referenced in Section 5 above (unless a court of competent jurisdiction determines that each of the material assertions made by Indemnitee in such proceeding was not made in good faith or was frivolous); or
  - (ii) where the Company has joined in or the Board has consented to the initiation of such proceedings.
- (b) indemnify Indemnitee if a final decision by a court of competent jurisdiction determines that such indemnification is prohibited by applicable law.

- (c) indemnify Indemnitee for the disgorgement of profits arising from the purchase or sale by Indemnitee of securities of the Company in violation of Section 16(b) of the Exchange Act, or any similar successor statute.

11. **Settlement of Claims.** The Company shall not be liable to Indemnitee under this Agreement for any amounts paid in settlement of any threatened or pending Claim related to an Indemnifiable Event effected without the Company's prior written consent, which shall not be unreasonably withheld; provided, however, that if a Change in Control has occurred, the Company shall be liable for indemnification of the Indemnitee for amounts paid in settlement if an Independent Counsel has approved the settlement. The Company shall not settle any Claim related to an Indemnifiable Event in any manner that would impose any Losses on the Indemnitee without the Indemnitee's prior written consent.

12. **Duration.** All agreements and obligations of the Company contained herein shall continue during the period that Indemnitee is a director or officer of the Company (or is serving at the request of the Company as a director, officer, employee, member, trustee or agent of another Enterprise) and shall continue thereafter (i) so long as Indemnitee may be subject to any possible Claim relating to an Indemnifiable Event (including any rights of appeal thereto) and (ii) throughout the pendency of any proceeding (including any rights of appeal thereto) commenced by Indemnitee to enforce or interpret his or her rights under this Agreement, even if, in either case, he or she may have ceased to serve in such capacity at the time of any such Claim or proceeding.

13. **Non-Exclusivity.** The rights of Indemnitee hereunder will be in addition to any other rights Indemnitee may have under the Constituent Documents, the General Corporation Law of the State of Delaware, any other contract or otherwise (collectively, "**Other Indemnity Provisions**"); provided, however, that (a) to the extent that Indemnitee otherwise would have any greater right to indemnification under any Other Indemnity Provision, Indemnitee will be deemed to have such greater right hereunder and (b) to the extent that any change is made to any Other Indemnity Provision which permits any greater right to indemnification than that provided under this Agreement as of the date hereof, Indemnitee will be deemed to have such greater right hereunder.

14. **Liability Insurance.** For the duration of Indemnitee's service as a [director/officer] of the Company, and thereafter for so long as Indemnitee shall be subject to any pending Claim relating to an Indemnifiable Event, the Company shall use commercially reasonable efforts (taking into account the scope and amount of coverage available relative to the cost thereof) to continue to maintain in effect policies of directors' and officers' liability insurance providing coverage that is at least substantially comparable in scope and amount to that provided by the Company's current policies of directors' and officers' liability insurance. In all policies of directors' and officers' liability insurance maintained by the Company, Indemnitee shall be named as an insured in such a manner as to provide Indemnitee the same rights and benefits as are provided to the most favorably insured of the Company's directors, if Indemnitee is a director, or of the Company's officers, if Indemnitee is an officer (and not a director) by such policy. Upon request, the Company will provide to Indemnitee copies of all directors' and officers' liability insurance applications, binders, policies, declarations, endorsements and other related materials.

15. **No Duplication of Payments.** The Company shall not be liable under this Agreement to make any payment to Indemnitee in respect of any Losses to the extent Indemnitee has otherwise received payment under any insurance policy, the Constituent Documents, Other Indemnity Provisions or otherwise of the amounts otherwise indemnifiable by the Company hereunder.

16. **Subrogation.** In the event of payment to Indemnitee under this Agreement, the Company shall be subrogated to the extent of such payment to all of the rights of recovery of Indemnitee. Indemnitee shall execute all papers required and shall do everything that may be necessary to secure such rights, including the execution of such documents necessary to enable the Company effectively to bring suit to enforce such rights.

17. **Amendments.** No supplement, modification or amendment of this Agreement shall be binding unless executed in writing by both of the parties hereto. No waiver of any of the provisions of this Agreement shall be binding unless in the form of a writing signed by the party against whom enforcement of the waiver is sought, and no such waiver shall operate as a waiver of any other provisions hereof (whether or not similar), nor shall such waiver constitute a continuing waiver. Except as specifically provided herein, no failure to exercise or any delay in exercising any right or remedy hereunder shall constitute a waiver thereof.

18. **Binding Effect.** This Agreement shall be binding upon and inure to the benefit of and be enforceable by the parties hereto and their respective successors (including any direct or indirect successor by purchase, merger, consolidation or otherwise to all or substantially all of the business and/or assets of the Company), assigns, spouses, heirs and personal and legal representatives. The Company shall require and cause any successor (whether direct or indirect by purchase, merger, consolidation or otherwise) to all, substantially all or a substantial part of the business and/or assets of the Company, by written agreement in form and substance satisfactory to Indemnitee, expressly to assume and agree to perform this Agreement in the same manner and to the same extent that the Company would be required to perform if no such succession had taken place.

19. **Severability.** The provisions of this Agreement shall be severable in the event that any of the provisions hereof (including any portion thereof) are held by a court of competent jurisdiction to be invalid, illegal, void or otherwise unenforceable, and the remaining provisions shall remain enforceable to the fullest extent permitted by law.

20. **Notices.** All notices, requests, demands and other communications hereunder shall be in writing and shall be deemed to have been duly given if delivered by hand, against receipt, or mailed, by postage prepaid, certified or registered mail:

- (a) if to Indemnitee, to the address set forth on the signature page hereto.
- (b) if to the Company, to:

GSE Systems, Inc.  
c/o General Counsel

6940 Columbia Gateway Dr  
Suite 470  
Columbia, Maryland 21046

Notice of change of address shall be effective only when given in accordance with this Section. All notices complying with this Section shall be deemed to have been received on the date of hand delivery or on the third (3<sup>rd</sup>) business day after mailing.

21. Governing Law and Forum. This Agreement shall be governed by and construed and enforced in accordance with the laws of the State of Delaware applicable to contracts made and to be performed in such state without giving effect to its principles of conflicts of laws. The Company and Indemnitee hereby irrevocably and unconditionally: (a) agree that any action or proceeding arising out of or in connection with this Agreement shall be brought only in the Delaware Court and not in any other state or federal court in the United States, (b) consent to submit to the exclusive jurisdiction of the Delaware Court for purposes of any action or proceeding arising out of or in connection with this Agreement and (c) waive, and agree not to plead or make, any claim that the Delaware Court lacks venue or that any such action or proceeding brought in the Delaware Court has been brought in an improper or inconvenient forum.

22. Headings. The headings of the sections and paragraphs of this Agreement are inserted for convenience only and shall not be deemed to constitute part of this Agreement or to affect the construction or interpretation thereof.

23. Counterparts. This Agreement may be executed in one or more counterparts, each of which shall for all purposes be deemed to be an original, but all of which together shall constitute one and the same Agreement.

[SIGNATURE PAGE FOLLOWS]

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IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date first above written.

GSE SYSTEMS, INC.

By: \_\_\_\_\_

Name:

Title:

INDEMNITEE

\_\_\_\_\_  
Name:

Address: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

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**EXHIBIT A**

**FORM OF UNDERTAKING TO REPAY ADVANCEMENT OF EXPENSES**

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The Board of Directors of GSE Systems, Inc.

Re: Undertaking to Repay Expenses Advanced

Ladies and Gentlemen:

This undertaking is being provided pursuant to that certain Indemnification Agreement (the "**Indemnification Agreement**") dated the \_\_\_ day of \_\_\_\_\_, 20\_\_\_, by and between GSE Systems, Inc. (the "**Company**") and the undersigned Indemnitee ("**Indemnitee**"), pursuant to which I am entitled to advance of expenses in connection with [**Description of Claim**] (the "**Claim**").

Terms used herein and not otherwise defined shall have the meanings specified in the Indemnification Agreement.

I am subject to the Claim by reason of my status as a \_\_\_\_\_ or by reason of alleged actions or omissions by me in such capacity. I hereby affirm that at all times, insofar as I was involved as [**Description of Company Role**] of the Company, in any of the facts or events giving rise to the Claim, I (1) acted in good faith and honestly, (2) did not receive any improper personal benefit in money, property or services and (3) in the case of any criminal proceeding, had no reasonable cause to believe that any act or omission by me was unlawful.

In consideration of the advance of Expenses by the Company for reasonable attorneys' fees and related expenses incurred by me in connection with the Claim (the "**Advanced Expenses**"), I hereby agree that if, in connection with the Claim, it is established that I am not entitled to indemnification then I shall promptly reimburse the portion of the Advanced Expenses relating to the claims, issues or matters in the Claim as to which the foregoing findings have been established and which have not been successfully resolved as described in Section 6 of the Indemnification Agreement. To the extent that Advanced Expenses do not relate to a specific claim, issue or matter in the Claim, I agree that such Expenses shall be allocated on a reasonable and proportionate basis.

IN WITNESS WHEREOF, I have executed this undertaking on this \_\_\_ day of \_\_\_\_\_, 20\_\_\_.

WITNESS:





## FOURTH AMENDMENT AND REAFFIRMATION AGREEMENT

THIS FOURTH AMENDMENT AND REAFFIRMATION AGREEMENT is dated as of March 20, 2019 (this “Agreement”), by and among GSE SYSTEMS, INC., a Delaware corporation (“Parent”), GSE PERFORMANCE SOLUTIONS, INC., a Delaware corporation (“GSE Performance” and collectively with Parent, the “Borrowers” and each a “Borrower”), GSE TRUE NORTH CONSULTING, LLC, a Delaware limited liability company (“True North”), HYPERSPRING, LLC, a Delaware limited liability company (“Hyperspring”), ABSOLUTE CONSULTING, INC., a Delaware corporation (“Absolute” and together with True North and Hyperspring collectively, the “Original Guarantors” and each an “Original Guarantor”), DP ENGINEERING, LLC, formerly DP Engineering Ltd. Co., a Delaware limited liability company (“DP Engineering” and together with the Original Guarantors collectively, the “Guarantors” and each a “Guarantor” and together with the Borrowers collectively, the “Loan Parties” and each a “Loan Party”), and CITIZENS BANK, NATIONAL ASSOCIATION (the “Bank”). Capitalized terms used herein but not otherwise defined herein shall have the meanings ascribed to such terms in the Credit Agreement (as defined below) or the Guaranty (as defined below), as applicable.

WHEREAS, pursuant to the terms of that certain Credit and Security Agreement, dated as of December 29, 2016 (as the same may have been amended, renewed, replaced, or supplemented from time to time prior to the Closing Date (as defined in the Credit Agreement), the “Original Credit Agreement”), by and among Borrowers and Bank, the Bank agreed to provide a revolving line of credit to Borrowers in an amount not to exceed \$5,000,000 pursuant to a revolving line of credit note dated as of the Initial Closing Date (as defined in the Credit Agreement) of the Borrowers payable to the order of the Bank (the “RLOC Note”);

WHEREAS, Hyperspring executed and delivered a Guaranty and Suretyship Agreement (as the same may have been amended, restated or modified from time to time, the “Hyperspring Guaranty”) dated as of December 29, 2016 in favor of Bank in connection with Borrower entering into the Original Credit Agreement;

WHEREAS, Absolute executed and delivered a Guaranty and Suretyship Agreement (as the same may have been amended, restated or modified from time to time, the “Absolute Guaranty”) dated as of September 20, 2017 in favor of Bank in connection with the Original Credit Agreement;

WHEREAS, True North executed and delivered a Guaranty and Suretyship Agreement (as the same may have been amended, restated or modified from time to time, the “True North Guaranty”) dated as of May 11, 2018 in favor of Bank in connection with the Credit Agreement;

WHEREAS, GSE Performance executed and delivered a Pledge Agreement (as the same may have been amended, restated or modified from time to time, the “GSE Performance Pledge Agreement”) dated as of September 20, 2017 in favor of Bank in connection with the Original Credit Agreement;

WHEREAS, Borrowers and Bank entered into that certain Amended and Restated Credit Agreement (as the same may have been amended, restated or modified from time to time, the “Credit Agreement”) dated as of May 11, 2018 to continue the RLOC and to provide for a Term Loan Facility in a principal amount up to \$25,000,000;

WHEREAS, Original Guarantors and Bank entered into that certain Security Agreement (as the same may have been amended, restated or modified from time to time, the “Security Agreement”) dated as of May 11, 2018;

WHEREAS, pursuant to that certain Amendment and Reaffirmation Agreement dated as of May 11, 2018, the Borrowers, the Original Guarantors and the Bank agreed to amend the terms and conditions of the RLOC Note and the GSE Performance Pledge Agreement;

WHEREAS, pursuant to that certain Second Amendment and Reaffirmation Agreement dated as of May 25, 2018, the Borrowers, the Original Guarantors and the Bank agreed to amend certain terms and conditions of the Credit Documents to reflect the conversion of True North to a Delaware limited liability company;

WHEREAS, on February 15, 2019 GSE Performance acquired all of the membership interests of DP Engineering and DP Engineering executed and delivered a (a) Guaranty and Suretyship Agreement (the “DP Engineering Guaranty” and together with the True North Guaranty, the Hyperspring Guaranty and Absolute Guaranty collectively, the “Guaranty”) in favor of Bank in connection with the Credit Agreement and (b) Pledge Agreement in favor of Bank in connection with the Credit Agreement; and

WHEREAS, the parties hereto intend that, (a) the Credit Documents shall be amended subject to the terms and conditions set forth herein, (b) the obligations under the Guaranty and the Security Agreement will continue to be in effect, on the terms set forth therein, and (c) the Guaranty and the Security Agreement will continue to support and otherwise benefit the Obligations (as defined in the Guaranty).

NOW, THEREFORE, in consideration of the foregoing and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties hereto agree, under seal, as follows:

## ARTICLE I

### Section 1.01.

Amendments to Credit Documents. The Credit Documents (as defined in the Credit Agreement) are hereby amended as follows:

(a)

All references in the Credit Documents to “DP Engineering Ltd. Co., a Texas limited liability company” are hereby deleted and replaced with “DP Engineering, LLC, a Delaware limited liability company”.

(b)

Exhibit A to the GSE Performance Pledge Agreement is hereby deleted and replaced with Exhibit A attached hereto.

## ARTICLE II

### Reaffirmation

#### Section 2.01.

##### Reaffirmation.

(a)

Each Guarantor hereby: (i) affirms and confirms its guarantee and other commitments and obligations, under the Guaranty, the Security Agreement and any other Credit Documents executed by such Guarantor and (ii) confirms that each guarantee and other commitments and obligations under the Guaranty, the Security Agreement and any other Credit Documents executed by such Guarantor shall continue to be in full force and effect and shall continue to accrue to the benefit of the Bank notwithstanding the effectiveness of the Credit Agreement.

(b)

Each Borrower hereby affirms the execution and delivery to Bank of the Credit Documents, and the Credit Documents are continued in full force and effect and are in all respects hereby affirmed and ratified.

## ARTICLE III

### Representations and Warranties

Each Loan Party, to the extent applicable, hereby represents and warrants, which representations and warranties shall survive execution and delivery of this Agreement, as follows:

#### Section 3.01.

Organization. Each Loan Party is duly organized, validly existing and in good standing under the laws of the jurisdiction of its organization.

#### Section 3.02.

Authority; Enforceability. Each Loan Party has the corporate or limited liability company power to execute, deliver and carry out the terms and provisions of this Agreement and has taken all necessary corporate and other action, to authorize the execution, delivery and performance by it of this Agreement. Each Loan Party has duly executed and delivered this Agreement, and this Agreement constitutes a legal, valid and binding obligation of such Loan Party, enforceable against it in accordance with the terms hereof.

#### Section 3.03.

Credit Documents. The representations and warranties made by each Loan Party and set forth in the Credit Documents are true and correct on and as of the date hereof with the same effect as though made on and as of such date, except to the extent such representations and warranties expressly relate to an earlier date (in which case any such representation and warranty shall have been true and correct as of such earlier date).

ARTICLE IV

Miscellaneous

Section 4.01.

Conditions to Effectiveness of Agreement . The Bank’s willingness to agree to the amendments set forth in this Agreement is subject to the delivery by the Borrower to the Bank of the items described under the heading “To be Delivered Within 30 Days Post-Closing” of the closing checklist attached hereto as Exhibit B.

Section 4.02.

Notices. All communications and notices hereunder shall be in writing and given as provided in Section 10.9 of the Credit Agreement or Section 13 of the Guaranty, as applicable.

Section 4.03.

Expenses. Each Loan Party acknowledges and agrees that the Bank shall be entitled to reimbursement of expenses as provided in Section 10.2 of the Credit Agreement and Section 10 of the Guaranty, as applicable.

Section 4.04.

Credit Document. This Agreement is a “Credit Document” executed pursuant to the Credit Agreement and shall be construed, administered and applied in accordance with the terms and provisions thereof.

Section 4.05.

Successors and Assigns. The provisions of this Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns.

Section 4.06.

No Novation. Nothing herein contained shall be construed as a substitution or novation of the obligations outstanding under the Credit Documents, which shall remain in full force and effect except as modified by this Agreement and the Credit Agreement.

Section 4.07.

Governing Law; Waiver of Jury Trial. This Agreement shall be construed in accordance with and governed by the laws of the State of Delaware. EACH LOAN PARTY HEREBY KNOWINGLY, VOLUNTARILY AND INTENTIONALLY WAIVES ANY RIGHT TO A TRIAL BY JURY IN ANY SUIT, ACTION OR PROCEEDING BROUGHT OR INSTITUTED BY ANY PARTY HERETO OR ANY SUCCESSOR OR ASSIGN OF ANY PARTY, ON OR WITH RESPECT TO THIS AGREEMENT, ANY OF THE OTHER DOCUMENTS, THE COLLATERAL OR THE DEALINGS OF THE PARTIES WITH RESPECT HERETO OR THERETO, WHETHER BY CLAIM OR COUNTERCLAIM.

Section 4.08.

Remaining Force and Effect . Except as specifically amended hereby, the Credit Documents remain in full force and effect in accordance with their original terms and conditions.

**[ Remainder of Page Intentionally Left Blank ]**

IN WITNESS WHEREOF, each of the parties hereto has caused this Agreement to be duly executed under seal by its respective authorized officers as of the day and year first above written.

Witness/Attest:

**BANK :**

**CITIZENS BANK, NATIONAL ASSOCIATION**

By: (SEAL)

Edward S.

Winslow

Senior Vice President

**BORROWERS :**

**GSE SYSTEMS, INC.**

By: (SEAL)

Witness/Attest:

Witness/Attest: Emmett  
Pepe  
Chief Financial Officer  
**GSE PERFORMANCE SOLUTIONS, INC.**  
By: (SEAL)

Witness/Attest: Emmett  
Pepe  
Treasurer  
**GUARANTORS :**  

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**ABSOLUTE CONSULTING, INC.**  
By: (SEAL)

Witness/Attest: Emmett  
Pepe  
Treasurer  
**HYPERSPRING, LLC**  
By: (SEAL)

Witness/Attest: Emmett  
Pepe  
Treasurer  
**GSE TRUE NORTH CONSULTING, LLC**  
By: (SEAL)

Witness/Attest: Emmett  
Pepe  
Treasurer  
**DP ENGINEERING, LLC**  
By: (SEAL)

Emmett  
Pepe  
Treasurer

**EXHIBIT A**

**ISSUERS**

Absolute Consulting, Inc., a Delaware corporation (100%)

GSE True North Consulting, LLC, a Delaware limited liability company (100%)

Hyperspring, LLC, a Delaware limited liability company (100%)

DP Engineering, LLC, a Delaware limited liability company (100%)

DP-NXA Consultants, LLC, a Texas limited liability company (48%)

**EXHIBIT B**

**CLOSING CHECKLIST**

See attachment.



# Collateral Assignment of Rights Under Escrow Agreement

## THIS COLLATERAL ASSIGNMENT OF RIGHTS UNDER ESCROW AGREEMENT (the

“**Assignment**”) dated as of this 31st day of March, 2020, is made by **GSE PERFORMANCE SOLUTIONS, INC.**, a Delaware corporation (the “**Assignor**”), with an address at 1332 Londontown Blvd., Skyesville, MD 21784, in favor of **CITIZENS BANK, NATIONAL ASSOCIATION** (the “**Bank**”), with an address at 919 N. Market St., Suite 800, Wilmington, DE 19801.

**WHEREAS**, the Assignor has entered into that certain Escrow Agreement, dated as of September 20, 2017, by and among Assignor, Richard D. Linton, as seller representative (the “**Seller Representative**”), and Delaware Trust Company, as escrow agent (the “**Escrow Agent**” and together with the Seller Representative, the “**Contracting Parties**” and each, a “**Contracting Party**”), attached hereto as Exhibit A (together with all related agreements and documents, as the foregoing may be amended, supplemented or otherwise modified from time to time, the “**Escrow Agreement**”);

**WHEREAS**, the Bank has agreed to extend, and may in the future agree to extend, financial accommodations to the Assignor and GSE Systems, Inc., a Delaware corporation (together with Assignor, the “**Borrowers**”), pursuant to one or more promissory notes, letter agreements, loan agreements and/or collateral security documents now or hereafter entered into with the Bank or executed in favor of the Bank (all such documents, as any of the same may be amended, supplemented or otherwise modified from time to time, being referred to as the “**Loan Documents**”); and

**WHEREAS**, as a condition to its willingness to extend financial accommodations to the Borrowers under the Loan Documents, the Bank requires that the Assignor assign its right to receive payments under the Escrow Agreement to the Bank as collateral security for the Obligations (as hereinafter defined) by entering into this Assignment.

**NOW, THEREFORE**, in order to induce the Bank to extend the Obligations, and for other good and valuable consideration, the Assignor, intending to be legally bound, hereby covenants in favor of the Bank and agrees under seal as follows:

1. **Assignment.** The Assignor has granted, transferred, pledged, and assigned, and by these presents does grant, transfer, assign and grant a security interest unto the Bank, its successors and assigns, all of Assignor’s right to receive payments under the Escrow Agreement and any proceeds from the Escrow Agreement, to have and to hold unto the Bank as security for all loans, advances, debts, liabilities, obligations, covenants and duties owing by the Borrowers to the Bank, of any kind or nature, present or future (including any interest accruing thereon after maturity, or after the filing of any petition in bankruptcy, or the commencement of any insolvency, reorganization or like proceeding relating to the Borrowers whether or not a claim for post-filing or post-petition interest is allowed in such proceeding), whether direct or indirect (including those acquired by assignment or participation), absolute or contingent, joint or several, due or to become due, now existing or hereafter arising, whether or not (i) evidenced by any note, guaranty or other instrument, (ii) arising under any agreement, instrument or document, (iii) for the payment of money, (iv) arising by reason of an extension of credit, opening of a letter of credit, loan, equipment lease or guarantee, (v) under any interest or currency swap, future, option or other interest rate protection or similar agreement, (vi) under or by reason of any foreign currency transaction, forward, option or other similar transaction providing for the purchase of one currency in exchange for the sale of another currency, or in any other manner, or (vii) arising out of overdrafts on deposit or other accounts or out of electronic funds transfers (whether by wire transfer or through automated clearing houses or otherwise) or out of the return unpaid of, or other failure of the Bank to receive final payment for, any check, item, instrument, payment order or other deposit or credit to a deposit or other account, or out of the Bank’s non-receipt of or
-

inability to collect funds or otherwise not being made whole in connection with depository or other similar arrangements; and any amendments, extensions, renewals and increases of or to any of the foregoing, and all costs and expenses of the Bank incurred in the documentation, negotiation, modification, enforcement, collection and otherwise in connection with any of the foregoing, including reasonable attorneys' fees and expenses (hereinafter referred to collectively as the "**Obligations**"). The Assignor agrees that the Bank shall have the rights stated in this Assignment with respect to the Escrow Agreement, in addition to the other rights which the Bank may have by law.

2. **Performance of Escrow Agreement by Assignor.** The Assignor agrees to faithfully abide by, perform and discharge each and every obligation of the Escrow Agreement that is to be performed by the Assignor. The Assignor shall use its best efforts to enforce or secure the performance of each and every term of the Escrow Agreement. The Assignor agrees to provide prompt written notice to the Bank of the occurrence or existence of any default by any party to the Escrow Agreement.
3. **Power to Modify the Escrow Agreement.** The Assignor hereby expressly releases, relinquishes and surrenders all of the Assignor's right, power and authority to amend, modify, release, terminate or in any way alter the Escrow Agreement without the Bank's prior written consent, and any attempt on the part of the Assignor to exercise any such right, power or authority without the Bank's prior written consent shall constitute a default hereunder.
4. **Assignment of the Escrow Agreement.** The Assignor will not make additional assignments of the Escrow Agreement or any part thereof without the Bank's prior written consent. No such assignment shall discharge the Assignor from its liability hereunder, or arising out of the Obligations or under any other agreement between the Assignor and the Bank.
5. **Right to Collect Payment.** Either before or after an Event of Default (as defined in the Loan Documents), the Bank may notify the Escrow Agent or its successors and assigns under the Escrow Agreement to make all payments of amounts due to Assignor under the Escrow Agreement to the Bank. The Assignor will facilitate in all reasonable ways the Bank's collection of any payments of amounts due to Assignor under the Escrow Agreement to the Bank. Assignor shall immediately remit to the Bank any and all amounts which are paid to Assignor in connection with the Escrow Agreement.
6. **Representations, Warranties and Covenants.** Assignor hereby represents and warrants to the Bank that (i) it is a corporation duly formed, validly existing and in good standing under the laws of the State of Delaware, (ii) it has the power and authority to execute, deliver and perform this Assignment, (iii) this Assignment does not violate any law, regulation, decree, order or agreement to which it is a party or by which it is bound, (iv) it has not previously assigned, sold, pledged, transferred, mortgaged, hypothecated or otherwise encumbered any payments due to Assignor under the Escrow Agreement or proceeds thereof, or its right, title and interest therein, nor agreed to do so in the future to a party other than the Bank, (v) attached hereto as Exhibit A is a true, correct and complete copy of the Escrow Agreement, (vi) the Escrow Agreement is in full force and effect, (vii) there exists no event, condition or occurrence which constitutes a breach or default under any term or condition of the Escrow Agreement, and (viii) it will not accept any payments under the Escrow Agreement.
7. **Reserved.**
8. **Indemnity.** The Assignor agrees to indemnify each of the Bank, each legal entity, if any, who controls the Bank and each of their respective directors, officers and employees (the "**Indemnified Parties**"), and to hold each Indemnified Party harmless from and against, any and all claims, damages, losses, liabilities and expenses (including all fees and charges of internal or external counsel with whom any Indemnified Party may consult and all expenses of litigation and preparation therefor) which any Indemnified Party may incur, or which may be asserted against any Indemnified Party by any person, entity or governmental authority (including any person or entity claiming derivatively on behalf of the Assignor), in connection with or arising out of or relating to the Escrow Agreement or arising out of or by reason of this Assignment, whether (a) arising from or incurred in connection with any breach of a representation, warranty or covenant by the Assignor, or (b) arising out of or

resulting from any suit, action, claim, proceeding or governmental investigation, pending or threatened, whether based on statute, regulation or order, or tort, or contract or otherwise, before any court or governmental authority; provided, however, that the foregoing indemnity agreement shall not apply to any claims, damages, losses, liabilities and expenses solely attributable to an Indemnified Party's gross negligence or willful misconduct. The indemnity agreement contained in this Section shall survive the termination of this Assignment, payment of any Loan and assignment of any rights hereunder. The Assignor may participate at its expense in the defense of any such action or claim.

9. **Power of Attorney.** The Assignor hereby irrevocably constitutes and appoints the Bank and any officer thereof, with full power of substitution, as its true and lawful attorney-in-fact with full irrevocable power and authority in the place and stead of the Assignor or in its name, from time to time in the Bank's discretion for the purpose of carrying out the terms of this Assignment, to take any and all appropriate action and to execute any and all documents and instruments which may be necessary or desirable to accomplish the purposes of this Assignment and, without limiting the generality of the foregoing, the Assignor hereby gives the Bank the power and right on behalf of the Assignor, either before or after an Event of Default (as defined in the Loan Documents), and without notice to or assent by the Assignor, to do the following:
- (i) to receive payment of, endorse, and receipt for, any and all monies, claims and other amounts due and to become due at any time in respect of or arising out of the Escrow Agreement;
  - (ii) to commence and prosecute any suits, actions or proceeding at law or in equity in any court of competent jurisdiction to collect any amounts due under the Escrow Agreement and to enforce any other right in respect of the Escrow Agreement;
  - (iii) to settle, compromise or adjust any suit, action or proceeding described above, and, in connection therewith, to give such discharges or releases as the Bank may deem appropriate;
  - (iv) to negotiate with, enter into further agreements with, and otherwise deal with the Contracting Party with respect to the Escrow Agreement and the subject matter thereof; and
  - (v) to do at any time, or from time to time, all acts and things which the Bank deems necessary to protect or preserve the Escrow Agreement and the Bank's security interest and rights therein in order to effect the intent of this Assignment, all as fully and effectively as the Assignor might do.

The Assignor hereby ratifies all that such attorneys shall lawfully do or cause to be done by virtue hereof. This power of attorney is a power coupled with an interest, will be irrevocable and shall terminate only upon indefeasible payment in full of the Obligations and the termination of this Assignment. The powers conferred upon the Bank hereunder are solely to protect the Bank's interests in the Escrow Agreement and will not impose any duty upon it to exercise any such powers. The Bank will be accountable only for amounts that it actually receives as a result of the exercise of such powers.

10. **Notices.** All notices, demands, requests, consents, approvals and other communications required or permitted hereunder must be in writing and will be effective upon receipt. Such notices and other communications shall be made in accordance with the Loan Documents.
11. **Preservation of Rights.** No delay or omission on the Bank's part to exercise any right or power arising hereunder will impair any such right or power or be considered a waiver of any such right or power, nor will the Bank's action or inaction impair any such right or power. The Bank's rights and remedies hereunder are cumulative and not exclusive of any other rights or remedies which the Bank may have under other agreements, at law or in equity.



12. **Illegality.** If any provision contained in this Assignment should be invalid, illegal or unenforceable in any respect, it shall not affect or impair the validity, legality and enforceability of the remaining provisions of this Assignment.
13. **Changes in Writing.** No modification, amendment or waiver of, or consent to any departure by the Assignor from, any provision of this Assignment will be effective unless made in a writing signed by the Bank, and then such waiver or consent shall be effective only in the specific instance and for the purpose for which given. No notice to or demand on the Assignor will entitle the Assignor to any other or further notice or demand in the same, similar or other circumstance.
14. **Successors and Assigns.** This Assignment will be binding upon and inure to the benefit of the Assignor and the Bank and their respective successors and assigns, provided, however, that the Assignor may not assign this Assignment in whole or in part without the Bank's prior written consent and the Bank at any time may assign this Assignment in whole or in part.
15. **Interpretation.** In this Assignment, unless the Bank and the Assignor otherwise agree in writing, the singular includes the plural and the plural the singular; words importing any gender include the other genders; references to statutes are to be construed as including all statutory provisions consolidating, amending or replacing the statute referred to; the word "or" shall be deemed to include "and/or", the words "including", "includes" and "include" shall be deemed to be followed by the words "without limitation"; references to articles, sections (or subdivisions of sections) or exhibits are to those of this Assignment; and references to agreements and other contractual instruments shall be deemed to include all subsequent amendments and other modifications to such instruments, but only to the extent such amendments and other modifications are not prohibited by the terms of this Assignment. Section headings in this Assignment are included for convenience of reference only and shall not constitute a part of this Assignment for any other purpose. This Assignment is executed by more than one party as Assignor, the obligations of such persons or entities will be joint and several.
16. **Defeasance.** Upon payment in full of the Obligations and termination of the other Loan Documents, this Assignment shall become null and void and of no force and effect.
17. **Governing Law and Jurisdiction.** This Assignment has been delivered to and accepted by the Bank and will be deemed to be made in the State of Delaware. **This Assignment will be interpreted and the rights and liabilities of the Assignor and the Bank determined in accordance with the laws of the State of Delaware, excluding its conflict of laws rules.** The Assignor hereby irrevocably consents to the exclusive jurisdiction of any state or federal court in State of Delaware; provided that nothing contained in this Assignment will prevent the Bank from bringing any action, enforcing any award or judgment or exercising any rights against the Assignor individually, against any security or against any property of the Assignor within any other county, state or other foreign or domestic jurisdiction. The Assignor agrees that the venue provided above is the most convenient forum for both the Bank and the Assignor. The Assignor waives any objection to venue and any objection based on a more convenient forum in any action instituted under this Assignment.
18. **WAIVER OF JURY TRIAL. EACH OF THE ASSIGNOR AND THE BANK IRREVOCABLY WAIVES ANY AND ALL RIGHT IT MAY HAVE TO A TRIAL BY JURY IN ANY ACTION, PROCEEDING OR CLAIM OF ANY NATURE RELATING TO THIS ASSIGNMENT, ANY DOCUMENTS EXECUTED IN CONNECTION WITH THIS ASSIGNMENT OR ANY TRANSACTION CONTEMPLATED IN ANY OF SUCH DOCUMENTS. THE ASSIGNOR ACKNOWLEDGES THAT THE FOREGOING WAIVER IS KNOWING AND VOLUNTARY.**

The Assignor acknowledges that it has read and understood all the provisions of this Assignment, including the waiver of jury trial, and has been advised by counsel as necessary or appropriate.

[Remainder of Page Intentionally Left Blank]

WITNESS the due execution hereof as a document under seal, as of the date first written above. Witness/Attest:  
SOLUTIONS, INC.

GSE PERFORMANCE



Nadeem Riley

- - -

Emmett Pepe Treasurer

\_\_ (SEAL)



**EXHIBIT A**  
**Escrow Agreement**

See attachment.

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## ESCROW AGREEMENT

This ESCROW AGREEMENT is made as of this 20th day of September, 2017 among GSE Performance Solutions, Inc., a Delaware corporation with a principal place of business at 1332 Londontown Blvd, Sykesville, Maryland 21784 (“Buyer”), Richard D. Linton, an individual with an address of 3507 Burnt Pine Lane, Miramar Beach, Florida 32550 (“Seller Representative” and together with Buyer, the “Escrow Parties”) and Delaware Trust Company, (the “Escrow Agent”).

### WITNESSETH:

WHEREAS, the Escrow Parties desire to create an escrow account for the reasons set forth on Exhibit A attached hereto; and

WHEREAS, the Escrow Parties agree to appoint the Escrow Agent as the escrow agent for such account, on the terms and conditions set forth below;

NOW, THEREFORE, in consideration of the mutual promises and obligations set forth below, and for other valuable consideration the sufficiency and receipt of which is hereby acknowledged, the parties hereto agree as follows:

1. Appointment of Escrow Agent and Creation of Account. Contemporaneously with the execution of this Escrow Agreement (this “Agreement”), the Escrow Parties have provided the Escrow Agent with those assets listed on Exhibit B attached hereto. The Escrow Parties hereby appoint the Escrow Agent as escrow agent hereunder and directs it to hold those assets described in said Exhibit B, together with any additional assets which may be provided to the Escrow Agent from time to time to be held pursuant to this Agreement and all income earned from investment of the assets described in Exhibit B and any additions thereto (collectively the “Escrow Assets”), in a separate account in the name of “Project Florida Indemnity Escrow” (the “Escrow Account”). The Escrow Account shall be invested, administered and distributed in accordance with the terms set forth herein. This Escrow Agreement shall be in effect from the date hereof until the date on which the Escrow Agent receives instructions as to the disposition of the Escrow Assets, or the date otherwise set forth in this Agreement or until Escrow Agent resigns or is replaced.
  2. Investment of Escrow Assets. The Escrow Assets shall be held in the Escrow Account by the Escrow Agent. The Escrow Assets shall be invested in accordance with the instructions set forth in Exhibit C attached hereto. Escrow Agent makes no representations and or warranties as to the nature, risk factors, liquidity and/or terms and/or terms of said investment(s) in Escrow Account. The Escrow Agent shall make monthly accountings of such investments, the income received therefrom, and the then existing balance of the Escrow Account to the Escrow Parties. Both Escrow Parties agree to furnish the Escrow Agent a completed form W-9 Request for Taxpayer Identification Number and Certification prior to the release of income, if any, from the Escrow Assets. The parties shall treat all income earned from the investment of the Escrow Account (“Income”) as income of the Seller Representative for federal and all other applicable income tax purposes and reported, to the extent required by law,
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by the Escrow Agent to the IRS or any other taxing authority, as applicable, on IRS form 1099-INT, 1099-DIV or 1042S (or other appropriate form) as income earned from the Escrow Fund by the Seller Representative whether or not said income has been distributed during the year. Unless otherwise indicated in writing by the Parties hereto, no taxes or other withholdings are required to be made under applicable law or otherwise with respect to any payment to be made by Escrow Agent. All documentation necessary to support a claim of exemption or reduction in such taxes or other withholdings has been timely collected by Seller Representative and copies will be provided to Escrow Agent promptly upon a request therefor. Unless otherwise agreed to in writing by Escrow Agent, all tax returns required to be filed with the IRS and any other taxing authority as required by law with respect to payments made hereunder shall be timely filed and prepared by Seller Representative including but not limited to any applicable reporting or withholding pursuant to the Foreign Account Tax Compliance Act ("FATCA"). The parties hereto acknowledge and agree that the Escrow Agent shall have no responsibility for the preparation and/or filing of any tax return or any applicable FATCA reporting with respect to the Escrow Fund. The Escrow Agent shall withhold any taxes it deems appropriate, including but not limited to required withholding in the absence of proper tax documentation, and shall remit such taxes to the appropriate authorities as it determines may be required by any law or regulation in effect at the time of the distribution. The Escrow Agent may earn compensation in the form of short-term interest on items like uncashed distribution checks (from the date issued until the date cashed), funds that the Escrow Agent is directed not to invest, deposits awaiting investment direction or received too late to be invested overnight in previously directed investments.

3. Distributions from Escrow Account. The Escrow Agent shall make distributions from the Escrow Account in accordance with the instructions set forth in Exhibit D attached hereto. Upon the final distribution of all of the Escrow Assets, this Agreement shall terminate, except as set forth in paragraph 6 hereof, and the Escrow Agent shall have no further obligations or liabilities hereunder. Escrow Agent is not responsible and shall have no liability for the advising on taxes or payment of taxes or for any reporting requirements that may relate thereto.
  
4. Compensation of Escrow Agent. In consideration of the services provided by the Escrow Agent in the performance of its duties hereunder, the Escrow Parties agree to reimburse the Escrow Agent for all reasonable costs and expenses incurred by it with respect to this Agreement, including reasonable fees of legal counsel and other consultants, and to further compensate the Escrow Agent in accordance with the fee arrangement described in Exhibit E attached hereto. The Escrow Parties agree that the Escrow Agent shall have, and the Escrow Parties hereby grant to the Escrow Agent, a first lien for the payment of such costs and expenses, including attorney's fees, upon the Escrow Assets in the Escrow Account. As among themselves, Buyer, on one hand, and the Seller Representative, on the other hand, intend to share equally (one-half each) all amounts required to be paid under this paragraph 4.
  
5. Limitation of Escrow Agent's Duties.
  - (a) The Escrow Parties acknowledge that the duties of the Escrow Agent hereunder are solely ministerial in nature, and have been requested for their convenience. The Escrow Agent shall not be deemed to be the agent of the Escrow Parties, or to have any legal or

beneficial interest in any of the Escrow Assets. The Escrow Parties agree that the Escrow Agent is a party to the Escrow Agreement only and has no duties or responsibilities in connection with any agreements related hereto. The Escrow Agent shall not be subject to, or be obliged to recognize, any other agreement between the parties hereto or directions not specifically set forth or provided for herein. The Escrow Agent undertakes to perform only such duties as are expressly set forth herein and no duties shall be implied. The Escrow Parties agree that the Escrow Agent shall not be liable for any act or omission taken or suffered in good faith with respect to this Agreement unless such act or omission is the result of the gross negligence or willful misconduct of the Escrow Agent. IN NO EVENT SHALL THE ESCROW AGENT BE LIABLE, DIRECTLY OR INDIRECTLY, FOR ANY SPECIAL, INDIRECT, PUNITIVE OR CONSEQUENTIAL LOSSES OR DAMAGES OF ANY KIND WHATSOEVER (INCLUDING BUT NOT LIMITED TO LOST PROFITS), EVEN IF THE ESCROW AGENT HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH LOSSES OR DAMAGES AND REGARDLESS OF THE FORM OF ACTION.

- (b) The Escrow Agent may consult with legal counsel and shall be fully protected and incur no liability relative to any action or inaction taken in good faith in accordance with the advice of such counsel. The Escrow Agent shall not be responsible for the contents of any written notice, request, waiver, consent, receipt, statutory declaration or other paper or document furnished to it and may rely without any liability upon the contents thereof. The Escrow Agent shall have no responsibility for determining the genuineness or validity of any certificate, document, notice or other instrument or item presented to it, and shall be fully protected in acting in accordance with any written instruction given to it by the Escrow Parties and reasonably believed by the Escrow Agent to have been signed by the proper representatives of the Escrow Parties.
- (c) The Escrow Agent shall not be responsible for any losses relative to the investment or liquidation of the Escrow Assets, provided such Escrow Assets are invested and held in accordance with paragraph 2 hereof. The Escrow Agent further shall not be responsible for assuring that the Escrow Assets are sufficient for the disbursements contemplated under paragraph 3 hereof.
- (d) The Escrow Agent shall not be required to institute legal proceedings of any kind. The Escrow Agent shall not be required to defend any legal proceedings which may be instituted against it with respect to this Agreement unless requested to do so in writing by the Escrow Parties, and unless and until it is indemnified by the Escrow Parties to the satisfaction of the Escrow Agent, in its sole discretion, against the cost and expense of such defense, including without limitation the reasonable fees and expenses of its legal counsel. If any conflicting demand shall be made upon the Escrow Agent, it shall not be required to determine the same or take any action thereon and shall be permitted to refuse to comply with any and all demands, claims or instructions and may await settlement of the controversy by appropriate and nonappealable legal proceedings or written settlement of the conflicting parties. Upon the commencement of any action against or otherwise involving the Escrow Agent with respect to this Agreement, or upon advice of counsel under paragraph (b) hereunder, the Escrow Agent shall be fully entitled to interplead the matter of this escrow into a court of competent jurisdiction in the State of Delaware and, in such event, the Escrow Agent shall be relieved of and discharged

from any and all obligations and liabilities under this Agreement. In any such action, the Escrow Agent shall be entitled to the indemnities, hold harmless and reimbursement of attorneys fees and court costs provided in paragraph 6 hereof.

- (e) The Escrow Agent shall not be required to give security for its conduct nor shall the Escrow Agent have any further duties except those which are expressly set forth herein and it shall not be bound by any notice of claim or demand with respect thereto or any waiver, modification, amendment, termination or rescission of this Escrow Agreement unless agreed to in writing signed by the Escrow Parties and the Escrow Agent, or as otherwise provided in this Agreement.

6. Indemnification of Escrow Agent. In the absence of in the absence of gross negligence or willful misconduct on the part of the Escrow Agent, the Escrow Parties hereto agree to jointly and severally hold harmless and indemnify the Escrow Agent, its directors, officers, employees and agents from and against all obligations, liabilities, claims, suits, judgments, losses, damages, costs or expenses of any kind or nature, including without limitation reasonable attorneys' fees, which may be imposed on, incurred by, or asserted against the Escrow Agent in connection with the performance of its duties hereunder. The foregoing indemnities shall survive the resignation of the Escrow Agent or the termination of this Agreement. The parties agree that the Escrow Agent shall have and hereby grant the Escrow Agent a first lien for the payment of such expenses upon the Escrow Assets in the Escrow Account. In so agreeing to indemnify and hold harmless the Escrow Agent, as among themselves, Buyer, on one hand, and the Seller Representative, on the other hand, intend to share equally (one-half each) all amounts required to be paid under this paragraph 6.

7. Resignation and Replacement of Escrow Agent. The Escrow Agent in its sole discretion and for any reason may resign at any time and be discharged of its duties hereunder by giving thirty (30) days prior written notice to both of the Escrow Parties, and which notice shall specify the date of such resignation. However, if the Escrow Agent determines in its sole discretion that it is obligated to terminate or close the account due to a legal requirement or Court order or in the event of suspected fraud, illegal, or suspicious activity such termination will be effective immediately. In the event the Escrow Parties fail to appoint a successor escrow agent and notify the Escrow Agent in writing of such appointment within such thirty (30) day period, or within (10) days if Escrow Agent terminates immediately pursuant to this paragraph 7, the Escrow Agent shall be deemed to be solely a custodian of the Escrow Account without further duties hereunder, and shall be entitled to petition a court of competent jurisdiction to appoint a successor escrow agent, at the cost of the Escrow Parties. The Escrow Agent may be removed, by the written agreement of both of the Escrow Parties, upon not less than thirty (30) days' prior written notice given to the Escrow Agent. Upon the appointment of a successor escrow agent by the parties or by such court or removal or resignation of the Escrow Agent the Escrow Agent shall be released and discharged from all duties and liabilities under this Agreement.

8. Notices. All notices and other communications hereunder shall be in writing and shall be deemed to have been validly served, given or delivered five (5) days after deposit in the United States mails, by certified mail with return receipt requested and postage prepaid, when



delivered personally, one (1) day after delivery to any overnight courier, or when transmitted by facsimile transmission facilities, and addressed to the party entitled to be notified as follows:

- (a) If to Buyer:      If to Seller Representative:

GSE Performance Solutions, Inc.      Richard D. Linton  
c/o GSE Systems, Inc.      3507 Burnt Pine Lane  
1332 Londontown Blvd      Miramar Beach, Florida 32550  
Sykesville, Maryland 21784      Email: rlinton57@gmail.com Attn: Emmett Pepe, Treasurer  
E-mail: emmett.pepe@gses.com

- (b) If to Escrow Agent

Delaware Trust Company 251 Little Falls Drive  
Wilmington, DE 19808  
Attn: Escrow Administration Email: trust@delawaretrust.com

9.                    Governing Law and Severability. This Agreement shall be construed, and the obligations, rights and remedies of the parties hereunder shall be determined, in accordance with the laws of the State of New York. The invalidity or unenforceability of any particular provision of this Agreement shall not affect the other provisions hereof, and the Agreement shall be construed in all respects as if such invalid or unenforceable provision was omitted.

10.                  General Provisions. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, and all of which shall constitute one and the same instrument. This Agreement shall bind and inure to the benefit of the parties hereto, and their respective successors and assigns, and shall not be modified or amended except by a written instrument executed by the parties hereto. No waiver by any party hereto of any condition or of any breach of any provision of this Escrow Agreement shall be effective unless in writing. No waiver by any party of such condition or breach, in any one instance, shall be deemed to be a further or continuing waiver of any such condition or breach or a waiver of any other condition or breach of any other provision contained herein.

11.                  Right to Counsel. The Escrow Agent shall have the right to retain counsel, if necessary, in connection with any disputes arising out of this Escrow Agreement. The Escrow Agent's costs and reasonable attorneys' fees shall be the responsibility of the Escrow Parties. If the Escrow Account is insufficient to pay such expenses, the remaining balance due for said costs and attorneys' fees shall be borne equally by the Escrow Parties. The Escrow Agent may act relative hereto upon advice of counsel in reference to any matter connected herewith and shall not be liable for any mistake of fact or error of judgment or for any misconduct of any kind on its part or on the part of any agent whom it may reasonably employ in carrying out its obligations unless caused by the Escrow Agent's willful misconduct, fraud or gross negligence. The Seller Representative and Buyer agree that irrespective of any joint and several liability that

either may have to the Escrow Agent pursuant to this Agreement, Buyer, on the one hand, and the Seller Representative, on the other hand, will each only be liable for one-half of any such amounts owed. If either of Buyer, on the one hand, or the Seller Representative, on the other hand, incur more than one-half of such payments (including indirectly incurring more than one-half of such payments pursuant to the Escrow Agent having reimbursed itself from the Escrow Account), Buyer or the Seller Representative, as applicable, will promptly make a payment to the other party incurring such greater amount such that each of Buyer and the Seller Representative have borne one-half of all amounts which are paid to the Escrow Agent pursuant to this Escrow Agreement.

12. Entire Agreement. This Agreement constitutes the entire understanding and agreement of the parties with respect to the subject matter of this Agreement and supersedes all prior agreements or understandings, written or oral, between the parties with respect to the subject matter hereof.
13. Patriot Act Disclosure. To help the government fight the funding of terrorism and money laundering activities, Federal law requires all financial institutions to obtain, verify and record information that identifies each individual or entity that opens an account. Therefore, the Escrow Agent certain information for any individual or business entity that is a party to this Escrow Agreement. For individuals signing this Escrow Agreement on their own behalf or on behalf of another, the Escrow Agent requires a copy of a driver's license, passport or other form of photo identification. For business and other entities that are parties to this Escrow Agreement, the Escrow Agent will require such documents as it deems necessary to confirm the legal existence of the entity. At this time of or prior to execution of this Escrow Agreement, any party providing a tax identification number for tax reporting purposes shall provide to the Escrow Agent a completed IRS Form W-9, and every individual executing this Agreement on behalf of a party shall provide to the Escrow Agent a copy of a driver's license, passport or other form of photo identification acceptable to the Escrow Agent. The parties hereto agree to provide to the Escrow Agent such organizational documents and documents establishing the authority of any individual acting in a representative capacity as the Escrow Agent may require in order to comply with its established practices, procedures and policies. The Escrow Agent is authorized and directed to report all interest and other income earned on the Escrow Account in accordance with the Form W-9 information provided to the Escrow Agent by Seller Representative.
14. WAIVER OF JURY TRIAL. EACH OF THE PARTIES EXPRESSLY WAIVES THE RIGHT TO TRIAL BY JURY IN RESOLVING ANY CLAIM OR COUNTERCLAIM RELATION TO OR ARISING OUT OF THIS ESCROW AGREEMENT.
15. Binding Effect. All of the terms of this Escrow Agreement, as may be amended from time to time, shall be binding upon, inure to the benefit of and be enforceable by the parties hereto and their respective heirs, successors and assigns.
16. Dealings. Nothing herein shall preclude the Escrow Agent from acting in any other capacity for any party, person or entity referenced herein.

EXECUTED by the duly-authorized officers of the parties as of the date first above written:

**BUYER:**

GSE Performance S



olutions, Inc.

By: \_\_\_\_\_

Emmett Pepe, Treasurer

**SELLER REPRESENTATIVE:**

Richard D. Linton

**ESCROW AGENT:**

Delaware Trust Company

By: \_ \_ \_

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- - - -

Title: - - - - -

EXECUTED by the duly-authorized officers of the parties as of the date first above written:

**BUYER:**

GSE Performance Solutions, Inc.

By : -

Emmett Pepe, Treasurer

**SELLER REPRESENTATIVE:**

*Ric(g#!fJ!!*

**ESCROW AGENT:**

Delaware Trust Company

By -

Title:

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EXECUTED by the duly-authorized officers of the parties as of the date first above written:

**BUYER:**

GSE Performance Solutions, Inc.

By - Emmett Pepe, Treasurer

**SELLER REPRESENTATIVE:**

Richard D. Linton

**ESCROW AGENT:**

By: 1 Alan R. Halpern  
Title: ViG!o! Pr@ int

## EXHIBIT A to ESCROW AGREEMENT

### Purpose of Escrow

The Escrow Parties have entered, or will enter, into that certain Stock Purchase Agreement, dated as of the date hereof (as amended, modified and waived from time to time, the “**Purchase Agreement**”), by and among Richard D. Linton Revocable Trust, originally dated May 10, 2006, as amended and restated in its entirety on March 5, 2012, as amended from time to time (“**R. Linton Trust**”), Cynthia S. Linton Revocable Trust, originally dated May 10, 2006, as amended and restated in its entirety on March 5, 2012, as amended from time to time (“**C. Linton Trust**” and, together with R. Linton Trust, “**Sellers**”), Richard D. Linton (“**R. Linton**”) and Cynthia S. Linton (together with R. Linton, as individuals and as trustees of the Sellers, collectively, the “**Trustees**”), Absolute Consulting, Inc., a Florida corporation (the “**Company**”), GSE Performance Solutions, Inc., a Delaware corporation (“**Buyer**”) and R. Linton, as a representative of all of the Sellers and Trustees (the “**Seller Representative**”).

This Escrow Agreement has been established for purpose of securing the indemnification obligations of Sellers pursuant to Article IX of the Purchase Agreement, on the terms and subject to the conditions set forth in the Purchase Agreement. The execution and delivery of this Escrow Agreement by Buyer, the Seller Representative and the Escrow Agent is a condition precedent to the Closing under the Purchase Agreement.

The Seller Representative is entering into this Escrow Agreement on behalf of the Sellers.

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## **EXHIBIT B to ESCROW AGREEMENT**

### Escrow Assets

Escrow Assets shall consist of the following: an aggregate amount of cash equal to \$1,000,000.00.

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## **EXHIBIT C to ESCROW AGREEMENT**

### Investment Instructions

The Escrow Assets presented to the Escrow Agent for the Escrow Accounts shall be invested in the following: BlackRock FedFund Cash Management Class (the “Share Class”), an institutional money market mutual fund for which the Escrow Agent serves as shareholder servicing agent and/or custodian or subcustodian. The parties hereto: (i) acknowledge Escrow Agent’s disclosure of the services the Escrow Agent is providing to and the fees it receives from BlackRock; (ii) consent to the Escrow Agent’s receipt of these fees in return for providing shareholder services for the Share Class; and (iii) acknowledge that the Escrow Agent has provided on or before the date hereof a BlackRock FedFund Cash Management Class prospectus which discloses, among other things, the various expenses of the Share Class and the fees to be received by the Escrow Agent.

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## EXHIBIT D to ESCROW AGREEMENT

### Disbursement Instructions

The Escrow Agent shall make distributions from the Escrow Account as follows:

- (a) If at any time both of the Escrow Parties give the Escrow Agent joint written instructions which shall include the amount of Escrow Assets to be disbursed as well as payment instructions (“Joint Instructions”) or the Escrow Agent receives from one of the Escrow Parties a final, non-appealable order of a court of competent jurisdiction (“Final Order”) as to the disposition of all or a portion of the Escrow Assets, the Escrow Agent will, within five (5) business days of receipt, disburse such Escrow Assets in accordance with the Joint Instructions or Final Order.
  - (b) If, from time to time prior to the earlier of (i) the first business day following twenty-four (24) months after the date of this Agreement (the “Escrow Release Date”) and (ii) the date on which the Escrow Assets have been reduced to zero, a Buyer Indemnitee (as defined in the Purchase Agreement) desires to seek recourse against the Escrow Assets pursuant to Article IX of the Purchase Agreement (a “Claim”), such Buyer Indemnitee shall provide written notice thereof to the Seller Representative (a “Claim Notice”), which Claim Notice shall, pursuant to Article IX of the Purchase Agreement, describe the claim in reasonable detail and shall state the amount being claimed by such Buyer Indemnitee (the “Claim Amount”), and such Buyer Indemnitee shall also simultaneously deliver a copy of such Claim Notice to the Escrow Agent (with it being understood, however, that the Escrow Agent will have no duty or obligation to verify or otherwise determine any Buyer Indemnitee’s rights under the Purchase Agreement). The Buyer Indemnitees may execute one or more Claim Notices from time to time during the term of this Escrow Agreement.
  - (c) If the Escrow Agent has not received a written objection to such Claim or portion thereof from the Seller Representative (a “Dispute Notice”) within fifteen (15) business days following the Escrow Agent’s receipt of such Claim Notice, then on the sixteenth (16th) business day following such receipt, the Escrow Agent shall release an amount from the Escrow Fund equal to the Claim Amount or remaining Escrow Assets, whichever is less, by wire transfer to such Buyer Indemnitee in accordance with written payment instructions from Buyer. If the Escrow Agent receives a Dispute Notice from the Seller Representative (a copy of which the Seller Representative shall concurrently deliver to Buyer) within fifteen (15) business days following the Escrow Agent’s receipt of the related Claim Notice, then the Escrow Agent shall not distribute to Buyer Indemnitee any portion of the Claim Amount until the Escrow Agent receives either Joint Instructions or a Final Order; provided, that notwithstanding the foregoing, if the Seller Representative
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objects only in part to the Claim Amount, the Escrow Agent shall, after the lapse of the aforementioned fifteen (15) business day period, deliver to Buyer Indemnitee an amount from the Escrow Assets equal to the portion of the Claim Amount or remaining Escrow Assets, whichever is less, not objected to by the Seller Representative.

- (d) On the first business day following the Escrow Release Date, the Escrow Agent shall promptly distribute to the Seller Representative, from the Escrow Account, an amount equal to (i) all of the then-remaining Escrow Assets minus (ii) the sum of any Claim Amounts that are pending resolution under paragraph (b) or (c) by wire transfer to the Seller Representative in accordance with written payment instructions from the Seller Representative. If on the Escrow Release Date any portion of a Claim Amount remains pending with regard to any portion of the Escrow Assets, the Escrow Agent shall retain the disputed portion of such Claim Amount in the Escrow Account until the Escrow Agent receives either Joint Instructions or a Final Order.
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## EXHIBIT E to ESCROW AGREEMENT

### Fee Arrangement

#### Escrow Agent Fees:

\$1,000.00- set up fee payable in advance of the closing of the transaction

\$3,000.00 – escrow agent fee payable in advance of the closing of the transaction and upon each subsequent annual anniversary date.

#### TRANSACTION FEES:

Wire transfer of fund: \$35.00/domestic wire initiated; \$75.00/international payment Checks Cut: \$10.00/check cut

1099 Preparation: \$12.00/1099 prepared 1042-S Preparation: \$50.00/per

1042-S Returned Check: \$30.00/returned item

An additional annual fee of 15 basis points on the escrow account balance payable in advance may be charged for investments other than institutional money market funds with which the Escrow Agent has established servicing arrangements. Out-of-pocket expenses, fees and disbursements and services of an unanticipated or unexpected nature are not included in the above schedule and will be billed at cost.

## Certifications and Authorizations

I certify that:

- I have read the statements included in this form, including the Statements Required by Law and Executive Orders, and I understand them.
- The Applicant is eligible to receive a loan under the rules in effect at the time this application is submitted that have been issued by the Small Business Administration (SBA) implementing the Paycheck Protection Program under Division A, Title I of the Coronavirus Aid, Relief, and Economic Security Act (CARES Act) (the Paycheck Protection Program Rule).
- The Applicant:
  - o (1) is an independent contractor, eligible self-employed individual, or sole proprietor or
  - o (2) employs no more than the greater of 500 or employees or, if applicable, the size standard in number of employees established by the SBA in 13 C.F.R. 121.201 for the Applicant's industry.
- I will comply, whenever applicable, with the civil rights and other limitations in this form.
- All SBA loan proceeds will be used only for business-related purposes as specified in the loan application and consistent with the Paycheck Protection Program Rule.
- To the extent feasible, I will purchase only American-made equipment and products.
- The Applicant is not engaged in any activity that is illegal under federal, state or local law.
- Any loan received by the Applicant under Section 7(b)(2) of the Small Business Act between January 31, 2020 and April 3, 2020 was for a purpose other than paying payroll costs and other allowable uses loans under the Paycheck Protection Program Rule.

For Applicants who are individuals: I authorize the SBA to request criminal record information about me from criminal justice agencies for the purpose of determining my eligibility for programs authorized by the Small Business Act, as amended.

DocuSigned by:  
*Emmett Pepe*  
388873187E1430

Signed By:

Emmett Pepe, Authorized Signer

## **PAYCHECK PROTECTION PROGRAM DISCLOSURES**

### **Purpose of this form:**

This form is to be completed by the authorized representative of the Applicant and submitted to your SBA Participating Lender. Submission of the requested information is required to make a determination regarding eligibility for financial assistance. Failure to submit the information would affect that determination.

### **Instructions for completing this form:**

With respect to “purpose of the loan,” payroll costs consist of compensation to employees (whose principal place of residence is the United States) in the form of salary, wages, commissions, or similar compensation; cash tips or the equivalent (based on employer records of past tips or, in the absence of such records, a reasonable, good-faith employer estimate of such tips); payment for vacation, parental, family, medical, or sick leave; allowance for separation or dismissal; payment for the provision of employee benefits consisting of group health care coverage, including insurance premiums, and retirement; payment of state and local taxes assessed on compensation of employees; and for an independent contractor or sole proprietor, wage, commissions, income, or net earnings from self-employment or similar compensation.

For purposes of calculating “Average Monthly Payroll,” most Applicants will use the average monthly payroll for 2019, excluding costs over \$100,000 on an annualized basis for each employee. For seasonal businesses, the Applicant may elect to instead use average monthly payroll for the time period between February 15, 2019 and June 30, 2019, excluding costs over \$100,000 on an annualized basis for each employee. For new businesses, average monthly payroll may be calculated using the time period from January 1, 2020 to February 29, 2020, excluding costs over \$100,000 on an annualized basis for each employee.

If Applicant is refinancing an Economic Injury Disaster Loan (EIDL): Add the outstanding amount of an EIDL made between January 31, 2020 and April 3, 2020, less the amount of any “advance” under an EIDL COVID-19 loan, to Loan Request as indicated on the form.

All parties listed below are considered owners of the Applicant as defined in 13 CFR § 120.10, as well as “principals”:

- For a sole proprietorship, the sole proprietor;
- For a partnership, all general partners, and all limited partners owning 20% or more of the equity of the firm;
- For a corporation, all owners of 20% or more of the corporation;
- For limited liability companies, all members owning 20% or more of the company; and
- Any Trustor (if the Applicant is owned by a trust).

**Paperwork Reduction Act** – You are not required to respond to this collection of information unless it displays a currently valid OMB Control Number. The estimated time for completing this application, including gathering data needed, is 8 minutes. Comments about this time or the information requested should be sent to : Small Business Administration, Director, Records Management Division, 409 3rd St., SW, Washington DC 20416., and/or SBA Desk Officer, Office of Management and Budget, New Executive Office Building, Washington DC 20503.

**Privacy Act (5 U.S.C. 552a)** – Under the provisions of the Privacy Act, you are not required to provide your social security number. Failure to provide your social security number may not affect any right, benefit or privilege to which you are entitled. (But see Debt Collection Notice regarding taxpayer identification number below.) Disclosures of name and other personal identifiers are required to provide SBA with sufficient information to make a character determination.

When evaluating character, SBA considers the person’s integrity, candor, and disposition toward criminal actions. Additionally, SBA is specifically authorized to verify your criminal history, or lack thereof, pursuant to section 7(a)(1)(B), 15 USC Section 636(a)(1)(B) of the Small Business Act (the Act).

**Disclosure of Information** – Requests for information about another party may be denied unless SBA has the written permission of the individual to release the information to the requestor or unless the information is subject to disclosure under the Freedom of Information Act. The Privacy Act authorizes SBA to make certain “routine uses” of information protected by that Act. One such routine use is the disclosure of information maintained in SBA’s system of records when this information indicates a violation or potential violation of law, whether civil, criminal, or administrative in nature.

Specifically, SBA may refer the information to the appropriate agency, whether Federal, State, local or foreign, charged with responsibility for, or otherwise involved in investigation, prosecution, enforcement or prevention of such violations. Another routine use is disclosure to other Federal agencies conducting background checks but only to the extent the information is relevant to the requesting agencies’ function. See, 74 F.R. 14890 (2009), and as amended from time to time for additional background and other routine uses. In addition, the CARES Act, requires SBA to register every loan made under the Paycheck Protection Act using the Taxpayer Identification Number (TIN) assigned to the borrower.

**Debt Collection Act of 1982, Deficit Reduction Act of 1984 (31 U.S.C. 3701 et seq. and other titles)** – SBA must obtain your taxpayer identification number when you apply for a loan. If you receive a loan, and do not make payments as they come due, SBA may: (1) report the status of your loan(s) to credit bureaus, (2) hire a collection agency to collect your loan, (3) offset your income tax refund or other amounts due to you from the Federal Government, (4) suspend or debar you or your company from doing business with the Federal Government, (5) refer your loan to the Department of Justice, or (6) foreclose on collateral or take other action permitted in the loan instruments.

**Right to Financial Privacy Act of 1978 (12 U.S.C. 3401)** – The Right to Financial Privacy Act of 1978, grants SBA access rights to financial records held by financial institutions that are or have been doing business with you or your business including any financial Paycheck Protection Program Borrower Application Form 4 SBA Form 2483 (04/20) institutions participating in a loan or loan guaranty. SBA is only required provide a certificate of its compliance with the Act to a financial institution in connection with its first request for access to your financial records. SBA’s access rights continue for the term of any approved loan guaranty agreement. SBA is also authorized to transfer to another Government authority any financial records concerning an approved loan or loan guarantee, as necessary to process, service or foreclose on a loan guaranty or collect on a defaulted loan guaranty.

**Freedom of Information Act (5 U.S.C. 552)** – Subject to certain exceptions, SBA must supply information reflected in agency files and records to a person requesting it. Information about approved loans that will be automatically released includes, among other things, statistics on our loan programs (individual borrowers are not identified in the statistics) and other information such as the names of the borrowers (and their officers, directors, stockholders or partners), the collateral pledged to secure the loan, the amount of the loan, its purpose in general terms and the maturity. Proprietary data on a borrower would not routinely be made available to third parties. All requests under this Act are to be addressed to the nearest SBA office and be identified as a Freedom of Information request.

**Occupational Safety and Health Act (15 U.S.C. 651 et seq.)** – The Occupational Safety and Health Administration (OSHA) can require businesses to modify facilities and procedures to protect employees. Businesses that do not comply may be fined, forced to cease operations, or prevented from starting operations. Signing this form is certification that the applicant, to the best of its knowledge, is in compliance with the applicable OSHA requirements, and will remain in compliance during the life of the loan.

**Civil Rights (13 C.F.R. 112, 113, 117)** – All businesses receiving SBA financial assistance must agree not to discriminate in any business practice, including employment practices and services to the public on the basis of categories cited in 13 C.F.R., Parts 112, 113, and 117 of SBA Regulations. All borrowers must display the "Equal Employment Opportunity Poster" prescribed by SBA.

**Equal Credit Opportunity Act (15 U.S.C. 1691)** – Creditors are prohibited from discriminating against credit applicants on the basis of race, color, religion, national origin, sex, marital status or age (provided the applicant has the capacity to enter into a binding contract); because all or part of the applicant's income derives from any public assistance program; or because the applicant has in good faith exercised any right under the Consumer Credit Protection Act.

**Debarment and Suspension Executive Order 12549; (2 CFR Part 180 and Part 2700)** – By submitting this loan application, you certify that neither the Applicant or any owner of the Applicant have within the past three years been:  
(a) debarred, suspended, declared ineligible or voluntarily excluded from participation in a transaction by any Federal Agency; (b) formally proposed for debarment, with a final determination still pending; (c) indicted, convicted, or had a civil judgment rendered against you for any of the offenses listed in the regulations or (d) delinquent on any amounts owed to the U.S. Government or its instrumentalities as of the date of execution of this certification.

PAYCHECK PROTECTION NOTE

**VIRGINIA BORROWERS: THIS INSTRUMENT CONTAINS A CONFESSION OF JUDGMENT PROVISION WHICH CONSTITUTES A WAIVER OF IMPORTANT RIGHTS YOU MAY HAVE AS A DEBTOR AND ALLOWS THE CREDITOR TO OBTAIN A JUDGMENT AGAINST YOU WITHOUT FURTHER NOTICE.**

SBA Loan #	82984971-08
SBA Loan Name	GSE Systems Inc
Date	4/20/2020
Loan Amount	\$10,000,000.00
Fixed Interest Rate	1.0%
Borrower	GSE Systems Inc
Lender	Citizens Bank N.A. 1 Citizens Plaza Providence, RI 02903

1. PROMISE TO PAY:

In return for the Loan, Borrower promises to pay to the order of Lender the amount of 10,000,000.00 Dollars, interest on the unpaid principal balance, and all other amounts required by this Note.

2. DEFINITIONS:

“Forgiveness Period” means the 8-week period beginning on the date of first disbursement of the Loan.

“Loan” means the loan evidenced by this Note.

“Loan Documents” means the documents related to this loan signed by Borrower.

“Program” means the Paycheck Protection Program created by the Coronavirus Aid, Relief, and Economic Security Act, also known as the “CARES Act” (P.L. 116-136).

“SBA” means the Small Business Administration, an Agency of the United States of America.

3. LOAN FORGIVENESS; PAYMENT TERMS:

A. *Loan Forgiveness*: Borrower may apply to Lender for forgiveness of the amount due on the Loan in an amount equal to the sum of the following costs incurred by Borrower during the 8- week period beginning on the date of first disbursement of the Loan:

- i. Payroll costs
- ii. Any payment of interest on a covered mortgage obligation (which shall not include any prepayment of or payment of principal on a covered mortgage obligation)
- iii. Any payment on a covered rent obligation



iv. Any covered utility payment

The amount of loan forgiveness shall be calculated (and may be reduced) in accordance with the requirements of the Program, including the provisions of Section 1106 of the CARES Act. Not more than 25% of the amount forgiven can be attributable to non-payroll costs. If Borrower has received an SBA Economic Injury Disaster Loan (“EIDL”) during the period between January 1, 2020 and April 4, 2020 and used the proceeds of that EIDL for payroll costs, that amount shall be subtracted from the loan forgiveness amount.

Forgiveness will be subject to Borrower’s submission to Lender of information and documentation as required by the SBA and Lender.

B. *Submission of Information and Documents:* Forgiveness will be subject to Borrower’s submission to Lender of information and documentation as required by the SBA and Lender. Not before July 1, 2020 and by August 15, 2020, Borrower shall provide Lender with information, in form and substance acceptable to Lender, specifying the amount of forgiveness Borrower requests, together with all documentation required by the CARES Act, the SBA and/or Lender to evidence and/or verify such information. Required information shall include, without limitation:

- (i) the total dollar amount of payroll costs during the Forgiveness Period and the dollar amounts of covered mortgage interest payments, covered rent payments and covered utilities for the Forgiveness Period to the extent Borrower seeks forgiveness for these costs.
- (ii) the average number of full-time equivalent employees of Borrower per month during (a) the period from February 15, 2020 through June 30, 2020 (the “Covered Period”); (b) the same period in 2019, and (c) if the average number of full-time equivalent employees is lower than the average number for the period described in subsection (ii)(b) above, the period from January 1, 2020 through February 29, 2020;
- (iii) the number of full-time equivalent employees of Borrower as of February 15, 2020, April 26, 2020 and June 30, 2020;
- (iv) the total amount of salary and wages during the Covered Period and during the fourth calendar quarter of 2019 of each employee who had the amount or rate of such salary and wages reduced by more than 25% during the Covered Period from the amount or rate in the fourth quarter of 2019 (each, a “Lowered Employee”);
- (v) the rate of salary and wages of each Lowered Employee as of February 15, 2020, April 26, 2020 and June 30, 2020; and
- (v) such further information and documents as Lender or the SBA shall require.

C. *Initial Deferment Period:* No payments are due on the Loan for 6 months from the date of first disbursement of the Loan. Interest will continue to accrue during the deferment period.

D. *Maturity:* This Note will mature two years from date of first disbursement of the Loan.

E. *Payments from End of Deferment Period through Maturity Date:* To the extent the Loan is not forgiven during the deferment period or thereafter, the outstanding balance of the Loan, and interest thereon, shall be repaid in eighteen substantially equal monthly payments of principal and interest, commencing on the first business day after the end of the deferment period.

F. *Payment Authorization:* Borrower hereby authorizes Lender to initiate payments from Borrower’s bank account, by wire or ACH transfer, for each monthly or other payment required hereunder.

In the event any such payment is unsuccessful, Borrower shall remain liable for such payment and shall take all steps required to make such payment.

- G. *Interest Computation; Repayment Terms:* The interest rate on this Note is one percent per year. The interest rate is fixed and will not be changed during the life of the Loan. Interest will be calculated based upon actual days over a 365-day year.
- H. *Payment Allocation:* Lender will apply each installment payment first to pay interest accrued to the day Lender received the payment, then to bring principal current, and will apply any remaining balance to reduce principal.
- I. *Loan Prepayment:* Notwithstanding any provision in this Note to the contrary, Borrower may prepay this Note at any time without penalty. Borrower may prepay 20 percent or less of the unpaid principal balance at any time without notice. If Borrower prepays more than 20 percent and the Loan has been sold on the secondary market, Borrower must: (i) give Lender written notice; (ii) pay all accrued interest; and (iii) if the prepayment is received less than 21 days from the date Lender received the notice, pay an amount equal to 21 days interest from the date Lender received the notice, less any interest accrued during the 21 days and paid under (ii) of this paragraph. If Borrower does not prepay within 30 days from the date Lender received the notice, Borrower must give Lender a new notice.

4. NON-RECOURSE: Lender and SBA shall have no recourse against any individual shareholder, member or partner of Borrower for non-payment of the loan, except to the extent that such shareholder, member or partner uses the loan proceeds for an unauthorized purpose.

5. USE OF PROCEEDS:

Borrower represents and warrants that all proceeds of the Loan will be used for the following eligible business purposes, as required by the CARES Act: (I) payroll costs; (II) costs related to the continuation of group health care benefits during periods of paid sick, medical, or family leave, and insurance premiums; (III) employee salaries, commissions, or similar compensations; (IV) payments of interest on any mortgage obligation (which shall not include any prepayment of or payment of principal on a mortgage obligation); (V) rent (including rent under a lease agreement); (VI) utilities; and (VII) interest on any other debt obligations that were incurred before February 15, 2020, provided that not less than 75% of expended Loan proceeds shall be devoted to items (I)-(III) above.

6. DEFAULT:

Borrower is in default under this Note if Borrower does not make a payment when due under this Note, or if Borrower:

- A. Fails to do anything required by this Note and other Loan Documents;
- B. Does not disclose, or anyone acting on its behalf does not disclose, any material fact to Lender or SBA;
- C. Makes, or anyone acting on its behalf makes, a materially false or misleading representation to Lender or SBA;
- D. Reorganizes, merges, consolidates, or otherwise changes ownership or business structure without Lender's prior written consent;
- E. Does any of the following after Lender makes a determination (an "Adverse Forgiveness Determination") that the Loan is not entitled to full forgiveness (or in such other period as specified below):

- (i) Defaults on any other loan with Lender;
- (ii) Defaults on any loan or agreement with another creditor, if Lender believes the default may materially affect Borrower's ability to pay this Note;
- (iii) Fails to pay any taxes when due;
- (iv) Becomes the subject of a proceeding under any bankruptcy or insolvency law;
- (v) Has a receiver or liquidator appointed for any part of their business or property;
- (vi) Makes an assignment for the benefit of creditors;
- (vii) Has any adverse change in financial condition or business operation from the date of this Note that continues after the Adverse Forgiveness Determination and that Lender believes may materially affect Borrower's ability to pay this Note; or
- (viii) Becomes the subject of a civil or criminal action from the date of this Note that continues after the Adverse Forgiveness Determination and that Lender believes may materially affect Borrower's ability to pay this Note.

7. LENDER'S RIGHTS IF THERE IS A DEFAULT:

Upon a default by Borrower, without notice or demand and without giving up any of its rights, Lender may:

- A. Require immediate payment of all amounts owing under this Note; or
- B. File suit and obtain judgment.

8. LENDER'S GENERAL POWERS:

Without notice and without Borrower's consent, Lender may:

- A. Incur expenses to collect amounts due under this Note and enforce the terms of this Note or any other Loan Document. Among other things, the expenses may include reasonable attorney's fees and costs. If Lender incurs such expenses, it may demand immediate repayment from Borrower or add the expenses to the principal balance; and
- B. Take any action necessary to collect amounts owing on this Note.

9. WHEN FEDERAL LAW APPLIES:

When SBA is the holder, this Note will be interpreted and enforced under federal law, including SBA regulations. Lender or SBA may use state or local procedures for filing papers, recording documents, giving notice, foreclosing liens, and other purposes. By using such procedures, SBA does not waive any federal immunity from state or local control, penalty, tax, or liability. As to this Note, Borrower may not claim or assert against SBA any local or state law to deny any obligation, defeat any claim of SBA, or preempt federal law.

10. SUCCESSORS AND ASSIGNS:

Under this Note, Borrower includes the original Borrower's successors, and Lender includes the original Lender's successors and assigns.

11. GENERAL PROVISIONS:

- A. All individuals and entities signing this Note are jointly and severally liable.

- B. Borrower waives all suretyship defenses.
- C. Borrower must sign all documents necessary at any time to comply with the Loan Documents.
- D. Lender may exercise any of its rights separately or together, as many times and in any order it chooses. Lender may delay or forgo enforcing any of its rights without giving up any of them.
- E. Borrower may not use an oral statement of Lender or SBA to contradict or alter the written terms of this Note.
- F. If any part of this Note is unenforceable, all other parts remain in effect.
- G. To the extent allowed by law, Borrower waives all demands and notices in connection with this Note, including presentment, demand, protest, and notice of dishonor. Borrower also waives any defenses based upon any claim that Lender did not obtain any guarantee or collateral.

12. STATE-SPECIFIC PROVISIONS:

- A. If Borrower's principal place of business is in Delaware, the following provision applies:

**CONFESSION OF JUDGMENT. BORROWER HEREBY IRREVOCABLY AUTHORIZES AND EMPOWERS ANY ATTORNEY-AT-LAW, AFTER THE OCCURRENCE OF A DEFAULT, TO APPEAR IN ANY COURT OF RECORD AND TO CONFESS JUDGMENT AGAINST BORROWER FOR THE UNPAID AMOUNT OF THIS NOTE, AND TO RELEASE ALL ERRORS, AND WAIVE ALL RIGHTS OF APPEAL. IF A COPY OF THIS NOTE, VERIFIED BY AN AFFIDAVIT, SHALL HAVE BEEN FILED IN THE PROCEEDING, IT WILL NOT BE NECESSARY TO FILE THE ORIGINAL AS A WARRANT OF ATTORNEY. BORROWER WAIVES THE RIGHT TO ANY STAY OF EXECUTION AND THE BENEFIT OF ALL EXEMPTION LAWS NOW OR HEREAFTER IN EFFECT. NO SINGLE EXERCISE OF THE FOREGOING WARRANT AND POWER TO CONFESS JUDGMENT WILL BE DEEMED TO EXHAUST THE POWER, WHETHER OR NOT ANY SUCH EXERCISE SHALL BE HELD BY ANY COURT TO BE INVALID, VOIDABLE, OR VOID; BUT THE POWER WILL CONTINUE UNDIMINISHED AND MAY BE EXERCISED FROM TIME TO TIME AS LENDER MAY ELECT UNTIL ALL AMOUNTS OWING ON THIS NOTE HAVE BEEN PAID IN FULL.**

- B. If Borrower's principal place of business is in Maryland, the following provision applies:

**POWER TO CONFESS JUDGMENT. BORROWER HEREBY EMPOWERS ANY ATTORNEY OF ANY COURT OF RECORD, AFTER THE OCCURRENCE OF A DEFAULT HEREUNDER, TO APPEAR FOR BORROWER AND, WITH OR WITHOUT COMPLAINT FILED, CONFESS JUDGMENT, OR A SERIES OF JUDGMENTS, AGAINST BORROWER IN FAVOR OF LENDER OR ANY HOLDER HEREOF FOR THE ENTIRE PRINCIPAL BALANCE OF THIS NOTE, ALL ACCRUED INTEREST AND ALL OTHER AMOUNTS DUE HEREUNDER, AND FOR DOING SO, THIS NOTE OR A COPY VERIFIED BY AFFIDAVIT SHALL BE A SUFFICIENT WARRANT. BORROWER HEREBY FOREVER WAIVES AND RELEASES ALL ERRORS IN SAID PROCEEDINGS AND ALL RIGHTS OF APPEAL AND ALL RELIEF FROM ANY AND ALL APPRAISEMENT, STAY OR EXEMPTION LAWS OF ANY STATE NOW IN FORCE OR HEREAFTER ENACTED. BORROWER ACKNOWLEDGES AND AGREES THAT, PURSUANT TO THE FOREGOING POWER TO CONFESS JUDGMENT GRANTED TO LENDER, BORROWER IS VOLUNTARILY AND KNOWINGLY WAIVING ITS RIGHT TO NOTICE AND A HEARING PRIOR TO THE ENTRY OF A JUDGMENT BY LENDER AGAINST BORROWER. NO SINGLE EXERCISE OF THE FOREGOING POWER TO CONFESS JUDGMENT, OR A SERIES OF JUDGMENTS, SHALL BE DEEMED TO EXHAUST THE POWER, WHETHER OR NOT ANY SUCH EXERCISE SHALL BE HELD BY ANY COURT TO BE INVALID, VOIDABLE, OR VOID, BUT THE POWER SHALL CONTINUE UNDIMINISHED AND IT MAY BE EXERCISED FROM TIME TO TIME AS OFTEN AS**

**LENDER SHALL ELECT UNTIL SUCH TIME AS LENDER SHALL HAVE RECEIVED PAYMENT UNTIL ALL AMOUNTS OWING ON THIS NOTE HAVE BEEN PAID IN FULL.**

C. If Borrower's principal place of business is in Missouri, the following provision applies:

**Oral or unexecuted agreements or commitments to loan money, extend credit or to forbear from enforcing repayment of a debt including promises to extend or renew such debt are not enforceable, regardless of the legal theory upon which it is based that is in any way related to the credit agreement. To protect you (Borrowers(s)) and us (Creditor) from misunderstanding or disappointment, any agreements we reach covering such matters are contained in this writing, which is the complete and exclusive statement of the agreement between us, except as we may later agree in writing to modify it.**

D. If Borrower's principal place of business is in Oregon, the following provision applies:

**UNDER OREGON LAW, MOST AGREEMENTS, PROMISES AND COMMITMENTS MADE BY [BENEFICIARY]/US CONCERNING LOANS AND OTHER CREDIT EXTENSIONS WHICH ARE NOT FOR PERSONAL, FAMILY, OR HOUSEHOLD PURPOSES OR SECURED SOLELY BY GRANTOR'S/BORROWER'S RESIDENCE MUST BE IN WRITING, EXPRESS CONSIDERATION AND BE SIGNED BY [AN AUTHORIZED REPRESENTATIVE OF BENEFICIARY]/US TO BE ENFORCEABLE.**

E. If Borrower's principal place of business is in Pennsylvania, the following provision applies:

**CONFESSION OF JUDGMENT. BORROWER HEREBY IRREVOCABLY AUTHORIZES AND EMPOWERS ANY ATTORNEY OR THE PROTHONOTARY OR CLERK OF ANY COURT IN THE COMMONWEALTH OF PENNSYLVANIA, OR ELSEWHERE, TO APPEAR AT ANY TIME FOR BORROWER AFTER A DEFAULT UNDER THIS NOTE AND WITH OR WITHOUT COMPLAINT FILED, CONFESS OR ENTER JUDGMENT AGAINST BORROWER FOR THE ENTIRE PRINCIPAL BALANCE OF THIS NOTE AND ALL ACCRUED INTEREST, ON WHICH JUDGMENT OR JUDGMENTS ONE OR MORE EXECUTIONS MAY ISSUE IMMEDIATELY; AND FOR SO DOING, THIS NOTE OR A COPY OF THIS NOTE VERIFIED BY AFFIDAVIT SHALL BE SUFFICIENT WARRANT. THE AUTHORITY GRANTED IN THIS NOTE TO CONFESS JUDGMENT AGAINST BORROWER SHALL NOT BE EXHAUSTED BY ANY EXERCISE OF THAT AUTHORITY, BUT SHALL CONTINUE FROM TIME TO TIME AND AT ALL TIMES UNTIL PAYMENT IN FULL OF ALL AMOUNTS DUE UNDER THIS NOTE. BORROWER HEREBY WAIVES ANY RIGHT BORROWER MAY HAVE TO NOTICE OR TO A HEARING IN CONNECTION WITH ANY SUCH CONFESSION OF JUDGMENT AND STATES THAT EITHER A REPRESENTATIVE OF LENDER SPECIFICALLY CALLED THIS CONFESSION OF JUDGMENT PROVISION TO BORROWER'S ATTENTION OR BORROWER HAS BEEN REPRESENTED BY INDEPENDENT LEGAL COUNSEL.**

F. If Borrower's principal place of business is in Virginia, the following provision applies:

**Upon any default under this Note Borrower authorizes the clerk of any court and any attorney admitted to practice before any court of record in the United States, on behalf of Borrower, to then confess judgment against the Borrower in favor of Lender in the full amount due on this Note. For the purpose of allowing the Lender to file a confession of judgment in the Commonwealth of Virginia, the Borrower hereby duly constitutes and appoints , its true and lawful attorney-in-fact, to confess judgment against it in any court of record in the Commonwealth of Virginia, and Borrower further consents to the jurisdiction of and agrees that venue shall be proper in the Circuit Court of any county or city of the Commonwealth of Virginia and/or in any other court of record in the Commonwealth of Virginia. Borrower waives all errors, defects and imperfections in the**

entry of judgment as aforesaid or in any proceeding pursuant thereto and the benefit of any and every statute, ordinance or rule of court which may be lawfully waived conferring upon Borrower any right or privilege of exemption, stay of execution, or supplementary proceedings, or other relief from the enforcement or immediate enforcement of a judgment or related proceedings on a judgment. The authority and power to appear for and to enter judgment against Borrower shall not be extinguished by any judgment entered pursuant thereto; such authority and power may be exercised on one or more occasions from time to time, in the same or different courts or jurisdictions, as often as Lender shall deem necessary or advisable until all sums due under this Note have been paid in full.

G. If Borrower's principal place of business is in Washington, the following provision applies:

**Oral agreements or oral commitments to loan money, extend credit, or to forbear from enforcing repayment of a debt are not enforceable under Washington law.**

H. If Borrower is an individual residing in Wisconsin, the following provision applies:

Each Borrower who is married represents that this obligation is incurred in the interest of his or her marriage or family.

13. ARBITRATION CLAUSE:

Borrower agrees to the Arbitration Clause attached as Exhibit A. Lender also agrees to the Arbitration Clause.

14. BORROWER'S NAME AND SIGNATURE:

By signing below, each individual or entity becomes obligated under this Note as Borrower.

**BORROWER:** GSE Systems Inc

Emmett Pepe, Authorized Signer

**ARBITRATION CLAUSE (EXHIBIT A).**

Lender (together with its "Related Parties," as defined below, "we," "us" and "our") has put this Clause in question and answer form to make it easier to understand. However, this Clause is part of this Agreement and is legally binding on Borrower ("you" and "your").

<u>Question.</u>	<u>Short Answer.</u>	<u>Further Detail.</u>
<b>Background and Scope.</b>		
<b>What is arbitration?</b>	<b>An alternative to a court case.</b>	In arbitration, a third party arbitrator ("TPA") solves Claims in a hearing. It is less formal than a court case.
<b>Is it different from court and jury trials?</b>	<b>Yes.</b>	The hearing is private. There is no jury. It is usually less formal, faster and less expensive than a lawsuit. Pre-hearing fact finding (called "discovery") is limited. Appeals are limited. Courts rarely overturn arbitration awards.
<b>What is this Clause about?</b>	<b>The parties' agreement to arbitrate Claims.</b>	You and we agree that any party may elect to arbitrate or require arbitration of any "Claim" as defined below.
<b>Who does the Clause cover?</b>	<b>You and us, including certain "Related Parties".</b>	This Clause governs you and us, including our "Related Parties": (1) any parent, subsidiary or affiliate of ours; (2) our employees, directors, officers, shareholders, members and representatives; and (3) any person or company (but not the SBA) that is involved in a Claim you pursue at the same time you pursue a related Claim with us.
<b>What Claims does the Clause cover?</b>	<b>All Claims (except certain Claims about this Clause).</b>	This Clause governs all "Claims" that would usually be decided in court and are between you and us. In this Clause, the word "Claims" has the broadest reasonable meaning. It includes contract and tort (including intentional tort) claims and claims under constitutions, statutes, ordinances, rules and regulations. It includes all claims even indirectly related to your application and/or supplemental application for the Loan, this Note, the Loan or our relationship with you. It includes claims related to any decisions we have made or subsequently make concerning your Loan, including decisions regarding the Loan forgiveness to which you are or are not entitled. It includes claims related to collections, privacy and customer information. It includes claims related to the validity in general of this Note. <b>However, it does not include disputes about the validity, coverage or scope of this Clause or any part of this Clause. All such disputes are for a court and not the TPA to decide.</b>
<b>Who handles the arbitration?</b>	<b>Usually AAA or JAMS.</b>	Arbitrations are conducted under this Clause and the rules of the arbitration administrator in effect at the time the arbitration is commenced. However, arbitration rules that conflict with this Clause do not apply. The arbitration administrator will be either: <ul style="list-style-type: none"> <li>• The American Arbitration Association ("AAA"), 1633 Broadway, 10th Floor, New York, NY 10019, <a href="http://www.adr.org">www.adr.org</a>.</li> <li>• JAMS, 620 Eighth Avenue, 34th Floor, New York, NY 10018,</li> </ul>

Question.	Short Answer.	Further Detail.
		<p>www.jamsadr.org</p> <ul style="list-style-type: none"> <li>Any other company picked by agreement of the parties.</li> </ul> <p>If all the above options are unavailable, a court will pick the administrator. <b>No arbitration brought on a class basis may be administered without our consent by any administrator that would permit class arbitration under this Clause.</b></p> <p>The TPA will be selected under the administrator's rules. However, the TPA must be a lawyer with at least ten years of experience or a retired judge unless you and we otherwise agree.</p>
Can Claims be brought in court?	Sometimes.	<p>Either party may bring a lawsuit if the other party does not demand arbitration. We will not demand arbitration of any lawsuit you bring as an individual action in small claims court. However, we may demand arbitration of any appeal of a small-claims decision or any small-claims action brought on a class basis.</p>
Are you giving up any rights?	Yes.	<p><b>For Claims subject to this Clause, you give up your right to:</b></p> <ol style="list-style-type: none"> <li>Have juries decide Claims.</li> <li>Have courts, other than small-claims courts, decide Claims.</li> <li>Serve as a private attorney general or in a representative capacity.</li> <li>Join a Claim you have with a dispute by other consumers.</li> <li>Bring or be a class member in a class action or class arbitration.</li> </ol> <p><b>We also give up the right to a jury trial and to have courts decide Claims you wish to arbitrate.</b></p>
Can you or another business start class arbitration?	No.	<p><b>The TPA is <u>not</u> allowed to handle any Claim on a class or representative basis.</b> All Claims subject to this Clause must be decided in an <b>individual</b> arbitration or an individual small-claims action. This Clause will be void if a court rules that the TPA can decide a Claim on a class basis and the court's ruling is not reversed on appeal.</p>
What happens if part of this Clause cannot be enforced?	It depends.	<p>If any portion of this Clause cannot be enforced, the rest of this Clause will continue to apply, except that:</p> <p>(A) If a court rules that the TPA can decide a Claim on a class or other representative basis and the court's ruling is not reversed on appeal, only this sentence will apply and the remainder of this Clause will be void. <b>AND</b></p> <p>(B) If a party brings a Claim seeking public injunctive relief and a court determines that the restrictions in this Clause prohibiting the TPA from awarding relief on behalf of third parties are unenforceable with respect to such Claim (and that determination becomes final after all appeals have been exhausted), the Claim for public injunctive relief will be determined in court and any individual Claims seeking monetary relief will be arbitrated. In such a case the parties agree to request that the court stay the Claim for public injunctive relief until the arbitration award pertaining to individual relief has been entered in court.</p> <p><b>In no event will a Claim for class relief or public injunctive relief be</b></p>

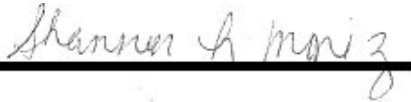


<b>Short Answer.</b>		
<b>Question.</b>	<b>Short Answer.</b>	<b>Further Detail.</b>
		<b>arbitrated.</b>
<b>What law applies?</b>	<b>The Federal Arbitration Act (“FAA”).</b>	This Agreement and related sale involve interstate commerce. Thus, the FAA governs this Clause. The TPA must apply substantive law consistent with the FAA. The TPA must honor statutes of limitation and privilege rights. Punitive damages are governed by the constitutional standards that apply in judicial proceedings.
<b>Will anything I do make this Clause ineffective?</b>	<b>No.</b>	This Clause stays in force even if you: (1) cancel this Note; (2) default, renew, prepay or pay the Loan in full; or (3) go into or through bankruptcy.
<b>Process.</b>		
<b>What must a party do before starting a lawsuit or arbitration?</b>	<b>Send a written Claim notice and work to resolve the Claim.</b>	Before starting a lawsuit or arbitration, the complaining party must give the other party written notice of the Claim. The notice must explain in reasonable detail the nature of the Claim and any supporting facts. If you are the complaining party, you must send the notice in writing (and not electronically) to our Legal Department, at our normal notice address. You or an attorney you have personally hired must sign the notice and must provide your full name and a phone number where you (or your attorney) can be reached. Once a Claim notice is sent, the complaining party must give the other party a reasonable opportunity over the next 30 days to resolve the Claim on an individual basis.
<b>How does arbitration start?</b>	<b>Mailing a notice.</b>	If the parties do not reach an agreement to resolve the Claim within 30 days after notice of the Claim is received, the complaining party may commence a lawsuit or arbitration, subject to the terms of this Clause. To start arbitration, the complaining party picks the administrator and follows the administrator's rules. If one party begins or threatens a lawsuit, the other party can demand arbitration. This demand can be made in court papers. It can be made if a party begins a lawsuit on an individual basis and then tries to pursue a class action. Once an arbitration demand is made, no lawsuit may be brought and any existing lawsuit must stop.
<b>Will any hearing be held nearby?</b>	<b>Yes.</b>	The TPA may decide that an in-person hearing is unnecessary and that he or she can resolve a Claim based on written filings and/or a conference call. However, any in-person arbitration hearing must be held at a place reasonably convenient to you.
<b>What about appeals?</b>	<b>Very limited.</b>	Appeal rights under the FAA are very limited. Except for FAA appeal rights and except for Claims involving more than \$50,000 (including Claims involving requests for injunctive relief that could cost more than \$50,000), the TPA's award will be final and binding. For Claims involving more than \$50,000, any party may appeal the award to a three-TPA panel appointed by the administrator, which will reconsider from the start anything in the initial award that is appealed. The panel's decision will be final and binding, except for any FAA appeal right. Any appropriate court may enter judgment upon the TPA's award.

<b>Short Answer.</b>		
<b>Question.</b>		<b>Further Detail.</b>
<b>Do arbitration awards affect other disputes?</b>	<b>No.</b>	No arbitration award involving the parties will have any impact as to issues or claims in any dispute involving anyone who is not a party to the arbitration, nor will an arbitration award in prior disputes involving other parties have any impact in an arbitration between the parties to this Clause.
<b>Arbitration Fees and Awards.</b>		
<b>Who bears arbitration fees?</b>	<b>Usually, we do.</b>	We will pay all filing, administrative, hearing and TPA's fees if you act in good faith, cannot get a waiver of such fees and ask us to pay.
<b>When will we cover your legal fees and costs?</b>	<b>If you win.</b>	If you win an arbitration, we will pay your reasonable fees and costs for attorneys, experts and witnesses. We will also pay these amounts if required under applicable law or the administrator's rules or if payment is required to enforce this Clause. The TPA shall not limit his or her award of these amounts because your Claim is for a small amount.
<b>Will you ever owe us for arbitration or attorneys' fees?</b>	<b>Only for bad faith.</b>	The TPA can require you to pay our fees if (and only if): (1) the TPA finds that you have acted in bad faith (as measured by the standards set forth in Federal Rule of Civil Procedure 11(b)); and (2) this power does not make this Clause invalid.
<b>Can an award be explained?</b>	<b>Yes.</b>	A party may request details from the TPA, within 14 days of the ruling. Upon such request, the TPA will explain the ruling in writing.

By signing below, we agree to this Arbitration Clause.

**LENDER: CITIZENS BANK, N.A.**



Shannon L Moniz Vice President  
Loan Operations Manager

**AUTHORIZATION**  
**(SBA Paycheck Protection Program Express Loan)**

SBA Loan# **82984971-08**  
U.S. Small Business Administration  
**LITTLE ROCK COMMERCIAL LOAN SERVICING CENTER OFFICE OF  
FINANCIAL PROGRAM OPERATIONS**  
**2120 Riverfront Drive**  
**Little Rock, AR 72202**

Lender:  
**Citizens Bank N.A.**  
  
**1 Citizens Plaza**  
**Providence, RI 02903**

Lender is issuing this SBA Paycheck Protection Program Express Loan Authorization for SBA to guarantee 100% of a loan in the amount of **\$10,000,000.00** to be made by Lender to assist:

Borrower: **GSE Systems Inc, 1332 Londontown Blvd 200, Sykesville, MD 21784**

Lender must have a valid SBA Loan Guarantee Agreement (SBA Form 750 and a valid SBA Express Supplemental Loan Guaranty Agreement (SBA Form 2424).

Lender's issuance is in accordance with the SBA Express Supplemental Loan Guaranty Agreement between Lender and SBA for an SBA Express Loan and the Paycheck Protection Program created by the Coronavirus Aid, Relief, and Economic Security Act, also known as the "CARES Act" (H.R. 748).

Lender must comply with all SBA Loan Program Requirements, as defined in 13 CFR 120.10, all of which may be amended from time to time.

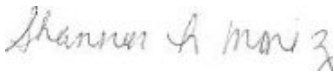
This Authorization is subject to the application (including SBA Form 2483) submitted by Borrower to the Lender, the Lender's representations to SBA, and the following terms and conditions:

15. Lender must make complete disbursement of the loan no later than **24** months from the date of this Authorization.
16. The SBA Guarantee Fee is \$0.
17. Lender must have Borrower execute a Note containing the following repayment terms:
  - A. At the request of the Borrower and on receipt of information and documentation as required by the SBA, Lender will forgive repayment of such portion of the Loan, and interest thereon, as and to the extent required by the CARES Act for loans under the Program. The amount of forgiveness shall not exceed the principal amount of this Note.
  - B. At any time as requested by the Lender, but not later than 90 days after Borrower receives funds pursuant to this Note, Borrower will provide Lender with information, in form and substance acceptable to Lender, specifying the amount of forgiveness Borrower requests, together with all documentation required by the CARES Act, the SBA and/or Lender to evidence and/or verify the information in such report. Required information shall include, without limitation, (i) the number of full-time equivalent employees of Borrower and the dollar amount of payroll costs during all relevant periods (including the Forgiveness Period), as well as (ii) the dollar amounts of covered mortgage interest payments, covered rent payments and covered utilities for the Forgiveness Period to the extent Borrower seeks forgiveness for these costs.

- C. To the extent the Loan is not forgiven, the outstanding balance of the Loan, and interest thereon, shall be repaid in eighteen substantially equal monthly payments of principal and interest, commencing six (6) months after the date of this Loan and ending two (2) years after the date of this Loan. Borrower hereby authorizes Lender to initiate payments from Borrower's bank account, by wire or ACH transfer, for each monthly or other payment required hereunder. In the event any such payment is unsuccessful, Borrower shall remain liable for such payment and shall take all steps required to make such payment.
- D. Interest will be calculated based upon actual days over a 365-day year.

- 18. Lender must develop and maintain evidence of a system or process to reasonably ensure that loan proceeds were used for the following eligible business purposes: (I) payroll costs; (II) costs related to the continuation of group health care benefits during periods of paid sick, medical, or family leave, and insurance premiums; (III) employee salaries, commissions, or similar compensations; (IV) payments of interest on any mortgage obligation (which shall not include any prepayment of or payment of principal on a mortgage obligation); (V) rent (including rent under a lease agreement); (VI) utilities; and (VII) interest on any other debt obligations that were incurred before February 15, 2020.
- 19. Lender must satisfy the following collateral conditions: None

LENDER

By:   
Shannon L Moniz Vice President  
Loan Operations Manager

Date: 4/20/2020

# SBA FORM 1050, SETTLEMENT SHEET

OMB Approval No.: 3245-0200 Expiration Date: 04/30/2022

**Purpose:** The purpose of this form is to document and verify that loan proceeds have been disbursed in accordance with the Authorization and to document that the Borrower's contribution has been injected into the business prior to the Lender disbursing any loan proceeds.

**General Instructions:** This form may be used for all 7(a) loans and for all disbursements. It must be used for the first disbursement on all standard 7(a) loans over \$350,000.

This form is to be completed by the Lender and signed by the Lender and the Borrower at the time of the initial loan disbursement. The Lender must retain a copy of the signed form in its loan file. For all disbursements, the Lender must also retain documentation that is acceptable to SBA (such as joint payee checks, cancelled checks, paid receipts or invoices, wire transfer account records, etc.) and that evidences compliance with the Use of Proceeds section of the Authorization.

The Lender must submit the completed form and all supporting documentation to SBA upon request, or, in the event of a loan default, with the Lender's request for guaranty purchase.

Providing this information is required to comply with program requirements; failure to provide it when required may impair the Lender's ability to collect on the SBA loan guaranty.

If additional space is required to complete the form or provide additional details please attach a separate sheet.

**Specific Instructions for Completing the Form:**

- 1) In the first section, fill in all identifying information. For "Loan Type," check the box to indicate whether the loan is a term loan or a revolving line of credit.
- 2) Complete the "Use of Proceeds" section with information related to the initial disbursement.
  - a) On the line associated with each applicable use of proceeds, indicate:
    - i) The name of the payee (must identify the ultimate recipient, not an intermediary such as a title company);
    - ii) Amount disbursed; and
    - iii) Remaining amount to be disbursed, in accordance with the Authorization.
  - b) For the "Settlement charges/out of pocket costs" line, insert total amount of settlement charges and other out of pocket costs in the appropriate field within the grid. Attach an itemized list of all charges and costs, including the name of payee and amount paid for each charge or cost. Reminder: SBA Form 159 is required for all fees paid or to be paid by the Lender (except Lender Service Provider fees) and for all fees paid or to be paid by the Applicant to any agent in connection with the SBA loan application.)
  - c) For "Other (Explain)," enter any other use of proceeds authorized in the Authorization that is not already listed in the grid, if applicable.
- 3) Complete the "Borrower's Injection" section.
  - a) For each type of injection, indicate the source.
  - b) If the Seller contributed toward required equity, attach a copy of the Note and evidence of full standby for the life of the loan.
  - c) Note: The Borrower's Injection must be in the business bank account prior to any disbursement of loan proceeds.
- 4) The Lender and the Borrower must review the certification and execute the form in the space provided.

SBA Form 1050 (04-19) Previous Editions Obsolete

Page 1 of 2

**U.S. Small Business  
Settlement Sheet**

OMB APPROVAL NO.: 3245-  
0200 EXPIRATION DATE:  
04/30/2022

<b>SBA Loan Number</b> 82984971-08	<b>Lender Name</b> Citizens Bank N.A.	<b>Lender FIRS Number</b> 7060330
<b>SBA Loan Name</b> GSE Systems Inc		<b>Note Amount</b> 10,000,000.00

<b>Loan Type:</b> Term Loan	<b>Line of Credit Type:</b> First Disbursement	<b>Disbursement</b>	<b>Subsequent Disbursement</b>	<b>Full Disbursement</b>
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Authorized Use of Proceeds:			Name of Payee:	Amount Disbursed:	Authorized Amount Remaining:
Land Acquisition:	Raw	Improved		\$ -	\$ -
Construction:	New	Expansion/Renovation		\$ -	\$ -
Leasehold Improvements to property owned by others				\$ -	\$ -
Machinery & Equipment				\$ -	\$ -
Furniture & Fixtures				\$ -	\$ -
Inventory Purchase				\$ -	\$ -
Working Capital	GSE Systems Inc Deposit to: 8203063002			\$10,000,000.00	\$ -
Acquire Business (Change of Ownership)				\$ -	\$ -
SBA Guarantee Fee				\$ -	\$ -
Settlement Charges/Out of Pocket Costs				\$ -	\$ -
Other (Explain):				\$ -	\$ -
<b>Total:</b>				<b>\$10,000,000.00</b>	<b>\$ -</b>

<b>Borrower's Injection (including any deposit or earnest money):</b>				
Cash	Source:			\$ -
Assets	Source:			\$ -
Seller contribution toward required equity (on full standby for life of loan)				\$ -
Other (Explain):				\$ -
<b>Total Borrower Injection:</b>				<b>\$ -</b>

At the time of completion of this form, the Lender and the Borrower certify that:

- The loan proceeds were disbursed and received and will be used in accordance with the Use of Proceeds section of the Authorization, including any and all SBA/Lender approved modifications, and that all required equity or Borrower injections have been made in accordance with the Authorization and any approved modifications; and
- There has been no unremedied adverse change in the Borrower's or Operating Company's financial condition, organization, management, operations or assets since the date of application that would warrant withholding or not making this disbursement or any further disbursement.

**At the time of each subsequent disbursement on this loan, the Lender, by disbursing the loan proceeds, and the Borrower by receiving them, are deemed to certify that the above certifications are true with respect to each and every disbursement made.**

**WARNING:** By signing below you are certifying that the above statements are accurate to the best of your knowledge. Submitting false information to the Government may result in criminal prosecution and fines up to \$250,000 and/or imprisonment for up to 5 years under 18 USC § 1001. Submitting false statements to a Federally insured institution may result in fines up to \$1,000,000 and/or imprisonment for up to 30 years under 18 USC § 1014, penalties under 15 USC § 645, and/or civil fraud liability.

Authorized Lender Official		Borrower	
<b>Signature:</b>		<b>Signature:</b>	
<b>Print Name:</b> Shannon L Moniz		<b>Print Name:</b> Emmett Pepe	
<b>Title:</b> Vice President and Loan Operations Manager		<b>Title:</b> Authorized Signer	
<b>Date:</b> 4/20/2020		<b>Date:</b> 4/23/2020	

*Shannon L Moniz*

DocuSigned by:  
*Emmett Pepe*

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SBA Form 1050 (04-19) Previous Editions Obsolete

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NOTE: According to the Paperwork Reduction Act, you are not required to respond to this collection of information unless it displays a currently valid OMB Control Number. The estimated burden for completing this form, including time for reviewing instructions, and gathering data needed, is 30 minutes. Comments or questions on the burden estimates or other aspects of this information collection should be sent to U.S. Small Business Administration, Director, RMD, 409 3rd St., SW, Washington DC 20416 and/or SBA Desk Officer, Office of Management and Budget, New Executive Office Building, Rm. 10202, Washington DC 20503. **PLEASE DO NOT SEND THE COMPLETED FORMS TO THESE ADDRESSES.**

Borrower Name: GSE Systems Inc

Loan: SBA PPP GSE Systems Inc (the "Loan")

Checking Account # : 8203063002 (the "Checking Account")

The undersigned hereby authorizes Citizens Bank to debit their Checking Account in the amount (each a "Payment Amount") of any payment due respecting the Loan. The undersigned hereby acknowledges and agrees that if a scheduled due date respecting the Loan is not a day on which the Bank is open for processing loans, the debit will be initiated on the next business day on which the Bank is open for processing loans.

This authorization may be terminated by the undersigned upon 30 days prior written notice to the Bank.

By your signature below, you authorize and agree to the terms of this Automatic Payment Authorization.

DocuSigned by:  
*Emmett Pepe*  
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Authorized Signer:

Emmett Pepe

Date:

4/23/2020

## SUBSIDIARIES OF REGISTRANT AT DECEMBER 31, 2019

The following are significant subsidiaries of GSE Systems, Inc. as of December 31, 2019, and the states or jurisdictions in which they are organized. GSE Systems, Inc. owns, directly or indirectly, at least 99% of the voting securities of substantially all of the subsidiaries included below. The names of particular subsidiaries have been omitted because, considered in the aggregate as a single subsidiary, they would not constitute, as of the end of the year covered by this report, a "significant subsidiary" as that term is defined in Regulation S-X under the Securities Exchange Act of 1934.

<u>Name</u>	<u>Place of Incorporation or Organization</u>
GSE Systems Engineering (Beijing) Company, Ltd	Peoples Republic of China
GSE Power Systems AB	Sweden
GSE Process Solutions, Inc.	State of Delaware
GSE Services Company L.L.C.	State of Delaware
GSE Systems Ltd.	United Kingdom
GSE Performance Solutions, Inc.	State of Delaware
EnVision Systems (India) Pvt. Ltd.	India
Hyperspring, LLC	State of Delaware
Absolute Consulting, Inc.	State of Delaware
GSE True North Consulting, LLC	State of Delaware
DP Engineering, Ltd	State of Delaware

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**Consent of Independent Registered Public Accounting Firm**

GSE Systems, Inc.  
Sykesville, Maryland

We hereby consent to the incorporation by reference in the Registration Statements on Forms S-8 (No. 333-212241, 333-183427, 333-150249 and 333-138702) of GSE Systems, Inc. of our report dated June 11, 2020, relating to the consolidated financial statements, which appears in this Form 10-K. Our report contains an explanatory paragraph regarding the Company's ability to continue as a going concern.

/s/ BDO USA, LLP  
McLean, Virginia  
June 11, 2020

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## POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Kyle J. Loudermilk and Emmett A. Pepe, and each of them, with full power of substitution and reconstitution and each with full power to act for him and without the other, as his true and lawful attorney-in-fact and agent, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments to this Annual Report on Form 10-K, and to file the same, with all exhibits thereto and all documents in connection therewith, with the Securities and Exchange Commission or any state, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in and about the premises, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, or their, his or her substitutes or substitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Security Exchange Act of 1934, this Annual Report on Form 10-K has been signed by the following persons in the capacities and on the date indicated.

Date: June 11, 2020

/s/ Kyle J. Loudermilk

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 Kyle J. Loudermilk  
 Chief Executive Officer

Date: June 11, 2020

/s/ Emmett A. Pepe

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 Emmett A. Pepe  
 Chief Financial Officer

Date: June 11, 2020

/s/ Chris Sorrells

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 Chris Sorrells  
 Chief Operating Officer

Date: March 14, 2019

/s/ Jone D. Fuller

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 Jone D. Fuller  
 Chairman of the Board

Date: March 14, 2019

/s/ Jim Stanker

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 Jim Stanker  
 Chairman of the Audit Committee

Date: March 14, 2019

/s/ J. Barnie Beasley

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 J. Barnie Beasley  
 Director

Date: March 14, 2019

/s/ Suresh Sundaram

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 Suresh Sundaram  
 Director

## Certification of the Chief Executive Officer

I, Kyle J. Loudermilk, certify that:

1. I have reviewed this annual report on Form 10-K of GSE Systems, 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 annual 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 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 registrant's board of directors:
  - 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: June 11, 2020

/s/ Kyle J. Loudermilk  
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Kyle J. Loudermilk  
Chief Executive Officer  
(Principal Executive Officer)

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## Certification of the Chief Financial Officer

I, Emmett A. Pepe, certify that:

1. I have reviewed this annual report on Form 10-K of GSE Systems, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant, as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
  - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors:
  - 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: June 11, 2020

/s/ Emmett A. Pepe  
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Emmett A. Pepe  
Chief Financial Officer  
(Principal Financial and Accounting Officer)

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

In connection with the Annual Report on Form 10-K of GSE Systems, Inc. (the "Company") for the year ended December 31, 2019 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Kyle J. Loudermilk, Chief Executive Officer of the Company, and I, Emmett A. Pepe, Chief Financial Officer, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that,

1. The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
2. To my knowledge, the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: June 11, 2020

/s/ Kyle J. Loudermilk

Kyle J. Loudermilk  
Chief Executive Officer

/s/ Emmett A. Pepe

Emmett A. Pepe  
Chief Financial Officer