
INNOVATION3
Technology.
Endurance.
Vision.
CARBO
2015 ANNUAL REPORT

Innovation to the third power: Technology. Endurance. Vision.

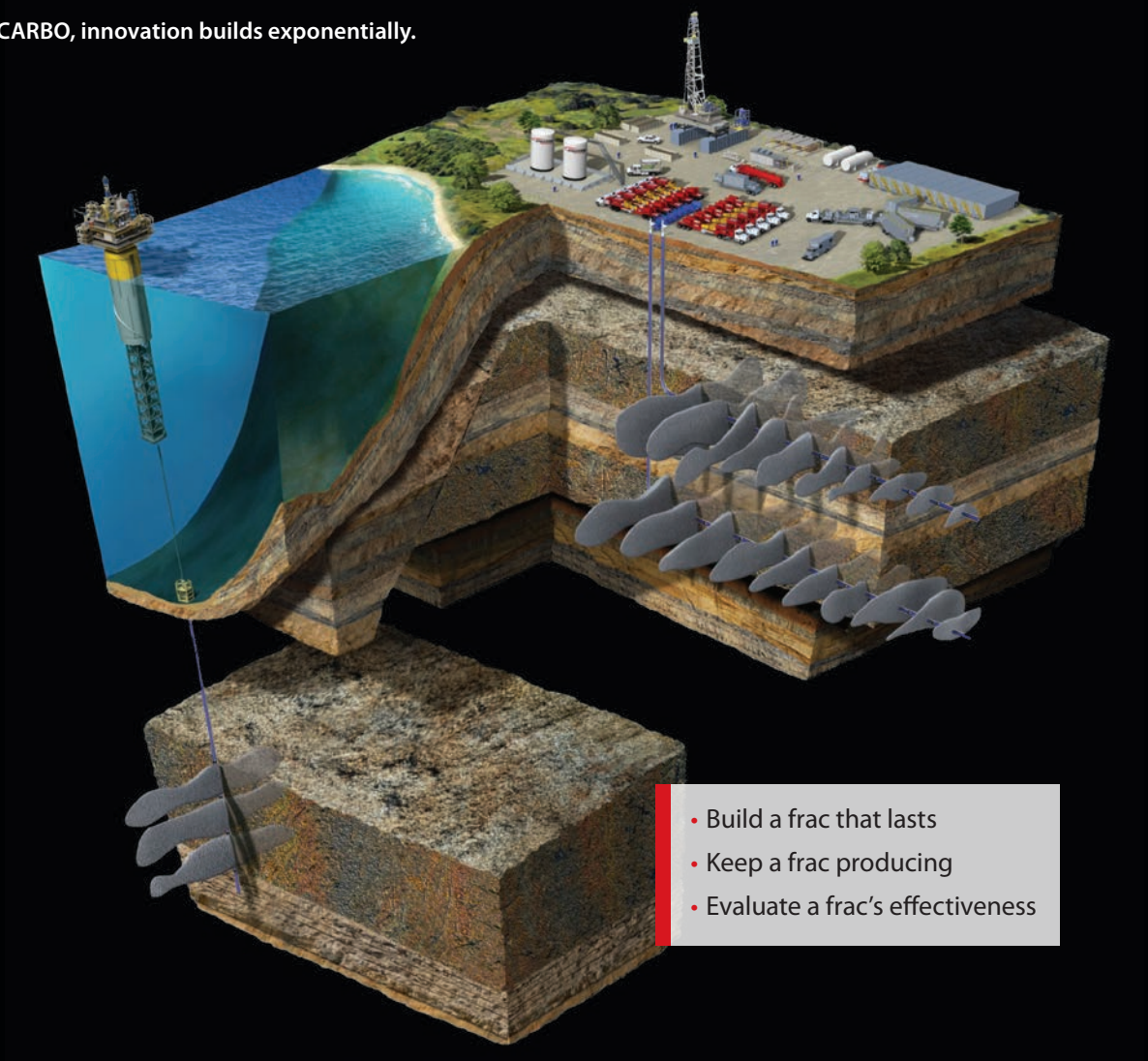
CARBO® is powered by innovation. To an oil and gas industry in need of resourceful thinking and effective solutions, CARBO delivers Technology. Endurance. Vision.

CARBO is built on technology, from targeted R&D that develops industry-leading products to state-of-the-art manufacturing facilities. This foundation allows CARBO to continuously create engineered proppant that provides superior productivity from within the fracture.

CARBO's innovations endure. Since 1979, CARBO has been solving some of our industry's most challenging problems. We continue to create technology products and solutions that break industry barriers and stand the test of time. This is evident in KRYPTOSPHERE®, which is the strongest, most enduring proppant ever made. In addition, the GUARD™ family of infused proppant technology prevents production-damaging precipitates such as scale or paraffin from forming, thereby assuring that wells keep producing at maximum rates, while also reducing lease operating expenses. We are building a strong technology-based company that can endure the cycles of our industry.

Finally, CARBO delivers unprecedented vision of the fracture. For clients seeking advancements that directly detect proppant placement so that well spacing can be optimized and fractures can be evaluated with more certainty, CARBO has developed and is enhancing unrivaled capabilities. And CARBO's vision is not limited to the reservoir. We believe we have the strategic focus needed to manage through the current cycle and maintain CARBO's industry-leading position in the future.

At CARBO, innovation builds exponentially.



CARBO increases the production of oil and natural gas wells and helps exploration and production (E&P) clients achieve higher ultimate recovery rates. The Company also reduces clients' environmental risk and provides environmental services.

To Our Shareholders, Clients and Employees:

In 2015, CARBO, like the rest of the oil and natural gas industry, endured one of the worst cyclical downturns in recent history. Unlike most companies, however, CARBO was able to introduce new technologies and products that can immediately help producers reduce operating costs and increase the economic performance of wells. As we prudently manage through the downturn, we are confident that there is a developing market for these products and technologies, even in the most challenging times.

Aggressive cost control

The CARBO management team has experienced multiple industry cycles in our careers, and we understand what is required to manage through them. Throughout 2015, CARBO pursued aggressive cash preservation and cost reduction efforts. We idled several of our proppant manufacturing facilities in order to rationalize our capacity to the demands of the industry. We worked with our supply chain to achieve lower costs and minimize capital expenditures. These and other steps reduced operational and overhead costs across the company.

Delivering value in any conditions

When the industry entered this downturn, some exploration and production (E&P) companies focused almost solely on cost cutting and began experimenting with pumping large quantities of inexpensive sand proppant rather than higher-performing ceramic proppant.

However, even during a down cycle, clients that use the CARBO "Design, Build, and Optimize the Frac®" platform continue to experience successful production results. This platform allows our clients to configure a customized solution for their reservoir, increase well production and estimated ultimate recovery (EUR), and reduce finding and development (F&D) costs.

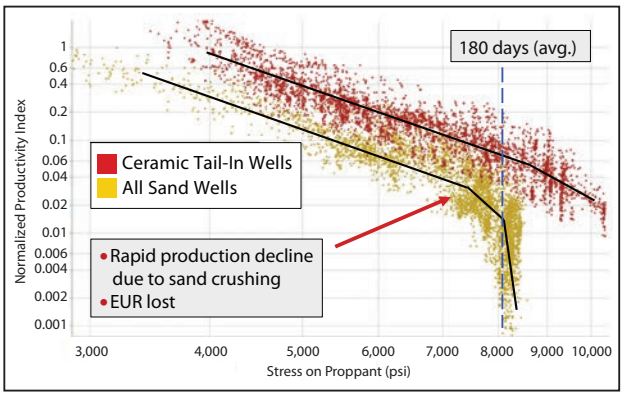
This process integrates STRATAGEN® (our independent fracture consulting business) and our FRACPRO® simulation and reservoir modeling software to design well completions using various fracture stimulation scenarios, including trade-offs of sand versus ceramic proppant pumped in varying amounts. Optimizing the frac with the increased conductivity of ceramic proppant allows for improved production and longer well life. This approach

can also reduce environmental impact, water usage, trucking shipments and stimulation horsepower, further reducing costs.

A three-pronged message

Innovation and technology have always differentiated CARBO from competitors. In particular, we have identified three vital aspects of fracture optimization where CARBO offers clear performance advantages and unmatched cost-reduction capability.

BUILD A FRAC THAT LASTS. This has been our core business since the Company was founded. Ceramic proppant has been conclusively proven to provide greater conductivity, superior crush resistance and longer well life than sand or any other proppant. For example, a field study showed that an industry operator who opted to experiment and cut costs by pumping large amounts



Downhole closure pressure causes sand proppant to crush and dramatically lose conductivity. Adding a ceramic tail-in yields higher initial productivity, longer well life and greater EUR.

of sand in horizontal wells found that sand was soon crushed by high closure stresses, conductivity was lost, and production fell off dramatically. We solved this problem by recommending a "ceramic tail-in" in which ceramic proppant is pumped in after the sand on each frac stage. This preserves high conductivity where it is needed the most—near the wellbore, where all of the hydrocarbons must pass. Even among proponents of extensive sand use, a ceramic tail-in is a common completion procedure.

KEEP A FRAC PRODUCING. As a well produces, changes in pressure and temperature cause damaging precipitates such as scale or paraffin to form, thereby impeding production. CARBO technology products address these problems by infusing technology into proppant grains to prevent the formation of these production-damaging precipitates. This controlled release technology eliminates the need for costly workovers while at the same time lowering lease operating expenses and increasing EUR.

EVALUATE A FRACTURE ACCURATELY. This "holy grail" technology has long been desired by the industry. The first generation of technologies, microseismic measurement and radioactive tracing, did not allow us to know where all of the proppant was placed within a fracture, or whether the fracture had been completed as designed. Being able to "see" the entire proppant pack could revolutionize fracture design, stimulation techniques and well placement to maximize production and EUR.

In each of these three areas, CARBO brought breakthrough technologies forward during 2015.

KRYPTOSPHERE: Expanding a revolutionary product line

At the request of a major client, CARBO engineered KRYPTOSPHERE HD, the world's first ultra-conductive proppant, designed to provide twice the conductivity over existing proppant in the world's deepest, highest-pressure (20,000 psi) wells. In 2015, multiple deep wells were pumped in the Lower Tertiary formation of the Gulf of Mexico using KRYPTOSPHERE HD. In addition, other clients have confirmed plans to use KRYPTOSPHERE HD in their wells.

The exceptional characteristics of KRYPTOSPHERE—superior strength, surface smoothness, consistent roundness and uniform size which creates more space for oil and gas to flow—provide superior conductivity and productivity in less-demanding downhole conditions as well. In 2015, CARBO introduced KRYPTOSPHERE LD, a low-density proppant that provides more EUR than competitors' intermediate and low-density ceramic proppant across a broad range of conditions, with closure stress of 6,000 to 14,000 psi, due to its dramatic increase in conductivity. The first commercial job with KRYPTOSPHERE LD was pumped in late December 2015.

Build a frac that lasts

KRYPTOSPHERE provides more space for oil and gas to flow

KRYPTOSPHERE technology delivers superior strength, smoothness, roundness, uniform size and unmatched crush resistance, providing more space to flow through the fracture. KRYPTOSPHERE HD (high density), the world's first ultra-conductive proppant, was engineered to perform in deepwater wells. In 2015, CARBO developed and tested KRYPTOSPHERE LD (low density), taking the superior conductivity of KRYPTOSPHERE to a wider range of reservoirs.

Also in 2015, we began developing CARBOAIR™, an ultra-low density proppant engineered to transport deeper into the frac than sand to maximize reservoir coverage and contact. We plan to introduce CARBOAIR to the market in early to mid-2016.

With our full product suite of proppant—from ultra-conductive KRYPTOSPHERE HD and LD for the world's critical wells to value-oriented products such as efficiently manufactured ECONOPROP® and HYDROPROP® and even sand—we can meet the needs of any client.

The GUARD Family: Game-changing production assurance

SCALEGUARD® technology continued to grow in sales volume and number of clients throughout 2015. The deep wells that used KRYPTOSPHERE HD also incorporated SCALEGUARD, which speaks highly of client confidence in the technology's effectiveness.

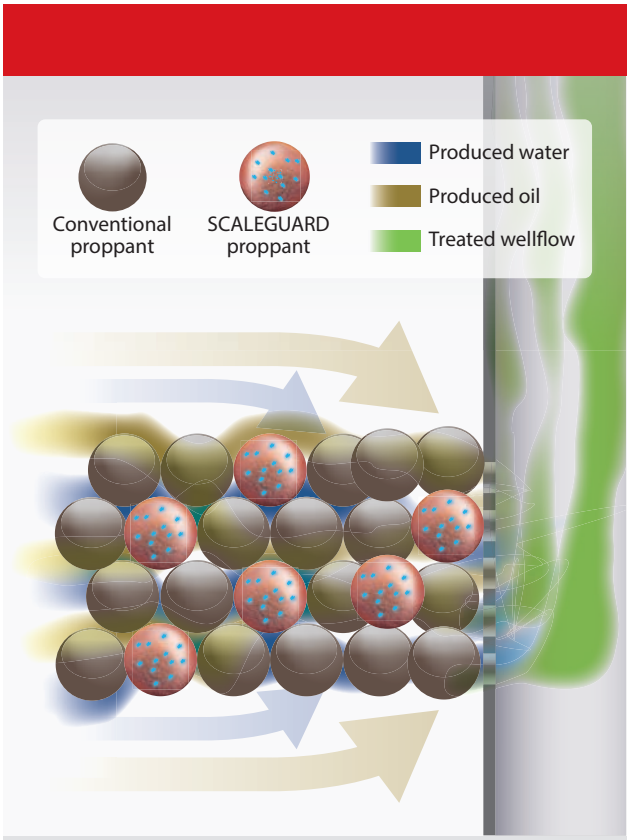
SCALEGUARD can eliminate the cost of workovers that require shutting down a well for cleaning, sometimes as often as every 90 days. With SCALEGUARD technology, a scale inhibitor is embedded in grains of proppant and released only upon contact with water that causes mineral build-up, thus protecting the wellbore and equipment for the life of the well.

Our unique GUARD production assurance technology can be applied to many industry problems. In addition to SCALEGUARD, we began tests of SALTGUARD™ to prevent salt precipitation, PARAGUARD™ to inhibit paraffin build-up, and H2SGUARD™ to control hydrogen sulfide gas.

GUARD products reduce operating costs, keep production flowing and increase EUR. They can be used with ceramic or sand-based proppant, thereby opening the potential market to all fracs. We believe the GUARD products have the potential for strong sales growth, even in an extremely cost-focused market.

FRACTUREVISION: See how to optimize fracture and completion design

In 2015, CARBO began field testing FRACTUREVISION™ technology, a breakthrough that, for the first time, enables an operator to see the position of the entire proppant pack in the fracture. CARBO detectable proppant, deployed as part of the regular proppant pack, can be traced to provide unprecedented accuracy for fracture evaluation. This allows an operator to optimize fracture and completion design, well spacing and field development plans.



Keep a frac producing

GUARD technology prevents production problems before they occur

Production-damaging precipitates, such as scale deposits, result in frequent, costly workovers for producers. Through controlled-release technology, one application of SCALEGUARD can last the life of the well, eliminating ongoing costs of lost production and remedial treatments. In addition, we began tests of SALTGUARD, PARAGUARD, and H2SGUARD. The GUARD products immediately reduce operating costs, keep production flowing and increase EUR.

Evaluate a fracture accurately

FRACTUREVISION shows where the proppant actually went

The industry has long sought a way to analyze and evaluate completed fractures. In 2015, CARBO developed FRACTUREVISION, the first technology that allows an operator to see the position of the entire proppant pack in the fracture. Using CARBO detectable proppant to determine the actual height and length of fractures, FRACTUREVISION technology helps an operator optimize fracture design and completion strategies, ultimately providing reduced costs and greater ultimate recovery.

FRACTUREVISION technology can be used in vertical and horizontal wells with ceramic and sand proppant, thereby increasing its applications to all fracs. Additionally, our traceable proppant is non-radioactive, enabling precise fracture evaluation to be performed safely throughout the life of the well.

FRACTUREVISION technology will allow an operator to reduce costs, improve completion efficiency and maximize EUR.

Our approach

The current downturn has been longer and deeper than expected. Although the U.S. Energy Information Administration forecasts improved market conditions and increasing crude oil prices through 2016 and 2017, we remain cautious.

In the near term, we are managing through this down cycle by focusing on cash flow and cost reduction measures. We will adjust to industry activity and balance inventory levels by idling/starting ceramic proppant plants as appropriate. On a positive note, imports of cheap, low-quality Chinese proppant have virtually ceased. We will continue to focus on distribution cost reductions. We will also minimize 2016 capital expenditures.

As always, CARBO will continue with our strategy of creating technology to improve our clients' well production and EUR, and reduce F&D costs.

We expect technology will continue to play a larger role in our Company's performance. Although our overall business was down in 2015, the technology aspect of our business showed strong growth, and revenues from new technologies nearly tripled compared to 2014. As a result, we have set aggressive growth targets for our technology, even in this down market.

As we manage through this downturn, we are also building a company for the future. We expect the technology and products we have developed to be the foundation for our growth ahead.

As we look forward, I want to recognize the CARBO employees, management team and Board of Directors who have met extraordinary challenges with extraordinary ability, energy, determination and innovation. You have my appreciation, admiration and thanks.

Sincerely,

Gary Kolstad
President and Chief Executive Officer

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

Form 10-K

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

For the fiscal year ended December 31, 2015

or

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

For the transition period from _____ to _____

Commission File No. 001-15903

CARBO Ceramics Inc.

(Exact name of registrant as specified in its charter)

DELAWARE	**72-1100013**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification Number)**

575 North Dairy Ashford
Suite 300
Houston, Texas 77079
(Address of principal executive offices)

(281) 921-6400
(Registrant's telephone number)

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

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

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

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

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

Indicate by check mark whether the registrant (1) has filed all reports 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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted 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 and post such files). Yes ☒ No ☐

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

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

Large accelerated filer ☒ Accelerated filer ☐

Non-accelerated filer ☐ (Do not check if a smaller reporting company) Smaller reporting company ☐

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

The aggregate market value of the Common Stock held by non-affiliates of the Registrant, based upon the closing sale price of the Common Stock on June 30, 2015, as reported on the New York Stock Exchange, was approximately $704,247,341. Shares of Common Stock held by each director and executive officer and each person who owns 10% or more of the outstanding Common Stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of February 17, 2016, the Registrant had 23,487,902 shares of Common Stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Proxy Statement for Registrant's Annual Meeting of Stockholders to be held May 17, 2016, are incorporated by reference in Part III.

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PART I

Item 1. *Business*

General

CARBO Ceramics Inc. ("we," "us," "our" or our "Company") is an oilfield services technology company that generates revenue primarily through the sale of products and services to the oil and gas industry for production enhancement and environmental services. We sell the majority of our products and services to operators of oil and natural gas wells and to oilfield service companies to help increase the production rates and the amount of oil and natural gas ultimately recoverable from these wells.

Our production enhancement businesses promote increased production and Estimated Ultimate Recovery ("EUR") of oil and natural gas by providing industry leading technology to *Design, Build, and Optimize the Frac™*. Our environmental services business is intended to protect operators' assets, minimize environmental risks, and lower lease operating expense ("LOE").

CARBO is the world's largest supplier of ceramic proppant. We also sell sand and resin-coated proppants. We provide the industry's most widely used fracture simulation software. We also provide fracture design and consulting services, and a broad range of technologies for spill prevention, containment and related countermeasures. Our products and services are primarily used in the hydraulic fracturing of natural gas and oil wells. The Company was incorporated in 1987 in Delaware. As used herein, "Company", "CARBO", "we", "our" and "us" may refer to the Company and/or its consolidated subsidiaries.

Hydraulic fracturing is the most widely used method of increasing production from oil and natural gas wells. The hydraulic fracturing process consists of pumping fluids down a natural gas or oil well at pressures sufficient to create fractures in the hydrocarbon-bearing rock formation. A granular material, called proppant, is suspended and transported in the fluid and fills the fracture, "propping" it open once high-pressure pumping stops. The proppant-filled fracture creates a conductive channel through which the hydrocarbons can flow more freely from the formation to the well and then to the surface.

There are three primary types of proppant that can be utilized in the hydraulic fracturing process: sand, resin-coated sand and ceramic. Sand is the least expensive proppant, resin-coated sand is more expensive and ceramic proppant is typically the most expensive. The higher initial cost of ceramic proppant is justified by the fact that its use in certain well conditions results in an increase in the production rate of oil and natural gas, an increase in the total oil or natural gas that can be recovered from the well and, consequently, an increase in cash flow for the operators of the well. The increased production rates are primarily attributable to the higher strength and more uniform size and shape of ceramic proppant versus alternative materials.

We manufacture various distinct ceramic proppants. KRYPTOSPHERE® HD, introduced in 2013, is a high-performance ceramic proppant engineered to deliver increased conductivity and durability in the highest closure stress wells. Even in challenging, high-cost environments such as deep water wells, KRYPTOSPHERE® HD retains its integrity and enables greater EUR from the reservoir.

Our newest proppant, KRYPTOSPHERE® LD, meets client needs for a lower density proppant than KRYPTOSPHERE® HD, yet has the same technological characteristics and similar conductivity in high stress wells.

CARBO*HSP*® and CARBO*PROP*® are high and intermediate density ceramic proppants, respectively, designed primarily for use in deep oil and gas wells.

CARBO*LITE*®, CARBO*ECONOPROP*® and CARBO*HYDROPROP*® are low-density ceramic proppants. CARBO*LITE*® is used in medium depth oil and gas wells, where higher production rates can be achieved due to

the product's uniform size and spherical shape. CARBO*ECONOPROP*® was introduced to provide a lower cost ceramic to compete more directly with resin-coated sand and sand proppant, and CARBO*HYDROPROP*® was introduced to improve performance in "slickwater" fracture treatments.

We produce resin-coated ceramic (CARBO*BOND*® LITE®), which addresses a niche market in which oil and natural gas wells are subject to the risk of proppant flow-back.

CARBO NORTHERN WHITE is a frac sand that is used by operators that still value quality, but do not wish to pay the higher costs associated with ceramic or resin-coated sand proppants.

In addition, we manufacture CARBO*NRT*®, a detectable proppant that utilizes a non-radioactive tracer material to assist operators in determining the locations of fractures in a natural gas or oil well. This tracer is added to the proppant granules during the manufacturing process, and can be added to most of the types of proppant that the Company sells.

In 2014, we began sales of SCALEGUARD, a porous ceramic proppant that is infused with scale-inhibiting chemicals and placed throughout the fracture as part of the hydraulic fracturing process. The infused scale inhibitor in SCALEGUARD is designed to be released into the fracture only on contact with water and thereby reduce or eliminate expensive remedial maintenance programs.

We, through our wholly-owned subsidiary StrataGen, Inc., also sell fracture simulation software under the brand FracPro® and provide fracture design and consulting services to oil and natural gas E&P companies under the brand StrataGen.

FracPro® provides a suite of stimulation software solutions to the industry that have marked capabilities for on-site real-time analysis. This has enabled recognition and remediation of potential stimulation problems. This stimulation software is tightly integrated with reservoir simulators, thus allowing for stimulation treatment and production optimization.

StrataGen, our specialized consulting team, works with operators around the world to help optimize well placement, fracture treatment design and production enhancement. The broad range of expertise of the StrataGen consultants includes: fracture treatment design; completion support; on-site treatment supervision, quality control; post-treatment evaluation and optimization; reservoir and fracture studies; rock mechanics and software application and training.

Generally, demand for most of our products and services depends primarily upon the supply of and demand for natural gas and oil and on the number of natural gas and oil wells drilled, completed or re-completed worldwide. More specifically, the demand for our products and services is dependent on the number of oil and natural gas wells that are hydraulically fractured to stimulate production. Because the demand for our products and services is also dependent on the commodity price of oil and natural gas, lower commodity prices result in less of our premium products being purchased.

Falcon Technologies and Services, Inc. ("Falcon Technologies"), a wholly-owned subsidiary of ours, provides spill prevention, containment and countermeasure systems for the oil and gas industry. Falcon Technologies uses proprietary technology designed to enable its clients to extend the life of their storage assets, reduce the potential for hydrocarbon spills and provide containment of stored materials.

During the year ended December 31, 2015, we generated approximately 71% of our revenues in the United States and 29% in international markets.

Competition

As the demand for proppant (including proppant produced by us) was negatively impacted by the severe decline in the oil and natural gas industry in 2015, the number of domestic and international competitors in the marketplace has decreased, and many of our competitors have shut down plants and/or reduced production. However, we do not have full visibility as to the extent or duration of these shut-downs and reductions. One of our worldwide proppant competitors is Saint-Gobain Proppants ("Saint-Gobain"). Saint-Gobain is a division of Compagnie de Saint-Gobain, a large French glass and materials company. Saint-Gobain manufactures a variety of ceramic proppants that it markets in competition with some of our products. Saint-Gobain's primary manufacturing facilities are located in Fort Smith and Bauxite, Arkansas. Saint-Gobain also manufactures ceramic proppant in China. Mineracao Curimbaba ("Curimbaba"), based in Brazil, is also a competitor and manufactures ceramic proppants that it markets in competition with some of our products. Imerys, S.A., a competitor based in France ("Imerys"), has begun to manufacture ceramic proppant in Andersonville, Georgia, and during 2013 acquired Wrens, Georgia-based ceramic proppant manufacturer Pyramax, LLC.

We are aware of two major manufacturers of ceramic proppant in Russia. Borovichi Refractory Plant ("Borovichi") located in Borovichi, Russia, and FORES Refractory Plant ("FORES") located in Ekaterinburg, Russia. Although we have limited information about Borovichi and FORES, we believe that Borovichi primarily manufactures intermediate-density ceramic proppants and markets its products principally within Russia, and that FORES manufactures intermediate-density and low-density ceramic proppant lines and markets its products both inside and outside of Russia. We believe that these companies have added manufacturing capacity in recent years and now manufacture and supply a majority of the ceramic proppant used in Russia. We are also aware of a large number of manufacturers in China. Most of these companies produce intermediate-density ceramic proppants that are marketed both inside and outside of China. Chinese proppant imports into the United States increased beginning in 2010 and 2011, which contributed to an over-supply of ceramic proppant in beginning in 2012. However, beginning in early 2015, imports declined significantly.

Competition for CARBO*HSP*® and CARBO*PROP*® principally includes ceramic proppant manufactured by Saint-Gobain, Curimbaba and various producers located in China. Our CARBO*LITE*®, CARBO*ECONOPROP*® and CARBO*HYDROPROP*® products compete primarily with ceramic proppant produced by Saint-Gobain, Curimbaba and Imerys and with sand-based proppant for use in the hydraulic fracturing of medium depth natural gas and oil wells. At this time, there is not in our view a comparable competitor's product to our KRYPTOSPHERE product line, which is the subject of patent protection.

The leading suppliers of mined sand are Unimin Corp., U.S. Silica Company, Fairmount Minerals Limited, Inc., Hi-Crush Partners LP, and Badger Mining Corp. The leading suppliers of resin-coated sand are Hexion and Santrol, a subsidiary of Fairmount Minerals.

We believe that some of the significant factors that influence a customer's decision to purchase our ceramic proppant are (i) price/performance ratio, (ii) on-time delivery performance, (iii) technical support and (iv) proppant availability. We believe that our products are competitively priced and that our delivery performance is good. We also believe that our superior technical support has enabled us to persuade customers to use ceramic proppant in an increasingly broad range of applications and has increased the overall market for our products.

Product Development

We continually conduct testing and development activities with respect to alternative raw materials to be used in our existing and alternative production methods. During 2015, we completed the first line of a plant retrofit to enable production of KRYPTOSPHERE® products including both KRYPTOSPHERE® LD and KRYPTOSPHERE® HD. We introduced KRYPTOSPHERE® HD in 2013, a proppant with greatly increased strength and conductivity when compared to our traditional proppants. This new proppant is intended for use in

ultra-high stress wells. In 2015, we introduced KRYPTOSPHERE® LD, a lower density proppant than KRYPTOSPHERE® HD. For information regarding our research and development expenditures, see Note 1 to the "Notes to Consolidated Financial Statements."

SCALEGUARD®, our new proppant-delivered, scale-inhibiting technology continues to show positive performance results in multiple basins across North America. SCALEGUARD has now been successfully used in hundreds of hydraulic fracturing stages. We are pursuing the development of other infused proppant technologies, some of which we expect will undergo field trials in 2016.

Going beyond our existing proppant detection capabilities, we are developing technology for far-field detection of proppant in a fracture, which has shown positive results in an initial field trial.

We are actively involved in the development of alternative products for use as proppant in the hydraulic fracturing process and are aware of others engaged in similar development activities. We believe that while there are potential specialty applications for these products, they will not significantly impact the use of ceramic proppants. We believe that the "know-how" and trade secrets necessary to efficiently manufacture a product of consistently high quality are difficult barriers to entry to overcome.

Customers and Marketing

Our largest customers are participants in the hydraulic fracturing industry. Specifically, Halliburton Energy Services, Inc. and Schlumberger Limited each accounted for more than 10% of our 2015 and 2014 revenues. However, the end users of our products are the operators of natural gas and oil wells that hire the pressure pumping service companies to hydraulically fracture wells. We work both with the pressure pumping service companies and with the operators of natural gas and oil wells to present the technical and economic advantages of using ceramic proppant. We generally supply our customers with products on a just-in-time basis, as specified in individual purchase orders. Continuing sales of product depend on our direct customers and the operators being satisfied with product quality, availability and delivery performance. In addition, continuing sales of product depend heavily on a favorable level of activity in the upstream natural gas and oil industries. We provide our software simulation products and consulting services directly to operators of oil and natural gas wells as well as service companies involved in hydraulic fracturing.

We recognize the importance of a technical marketing program in demonstrating long-term economic advantages when selling products and services that offer financial benefits over time. We have a broad technical sales force to advise end users on the benefits of using ceramic proppant, fracture simulation software, and related consulting services.

Although our initial products were originally intended for use in deeper, higher-stress wells that require high-strength proppant, we believe that there is economic benefit to operators of using ceramic proppant in shallower, lower-stress wells. We believe that our new product introductions and education-based technical marketing efforts have enabled us to maintain our position not only as the world's largest supplier of ceramic proppant but also as a leading innovator in our industry.

We provide a variety of technical support services and have developed computer software that models the return on investment achievable by using our ceramic proppant versus alternatives in the hydraulic fracturing of a natural gas or oil well. In addition to the technical marketing effort, we from time to time engage in field trials to demonstrate the economic benefits of our products and validate the findings of our computer simulations. Periodically, we provide proppant to operators for field trials, on a discounted basis, in exchange for their agreement to provide production data for direct comparison of the results of fracturing with ceramic proppant as compared to alternative proppants.

Our international marketing efforts are conducted primarily through our sales offices in United Arab Emirates, Canada, Russia, and South America. Our products and services are used worldwide by U.S. customers

operating domestically and abroad, and by foreign customers. Sales outside the United States accounted for 29%, 24% and 21% of our sales for 2015, 2014 and 2013, respectively. The distribution of our international and domestic revenues is shown below, based upon the region in which the customer used the products and services:

	For the years ended December 31,		
	2015	2014	2013
	($ in millions)		
Location			
United States	$199.2	$491.0	$529.6
International	80.4	157.3	137.8
Total	$279.6	$648.3	$667.4

Production Capacity

We believe that constructing adequate capacity ahead of demand while incorporating new technology to reduce manufacturing costs are important competitive strategies to increase our overall share of the market for proppant. However, in the current depressed oil and natural gas market, we are not currently constructing additional capacity, and we have reduced our production levels in line with the decreased demand.

During 2014, we completed construction of the first 250 million pound ceramic proppant production line in Millen, Georgia and the plant commenced operations. In addition, we began the construction on a second 250 million pound production line in Millen. However, due to current market conditions, the completion of this second line continues to be suspended until such time that market conditions improve sufficiently to warrant completion. Similarly, the first production line is idled due to current market conditions.

During 2015, we closed our manufacturing plant in China after market conditions deteriorated to a point where the China market was no longer a viable market for the Company. We do not intend to reopen the facility. We may soon begin legal liquidation of our China entity. Our plant in Luoyang, China had an annual production capacity of 100 million pounds of ceramic proppant and, in 2015, contributed less than 1% of our revenues.

The following table sets forth the current stated capacity of each of our existing ceramic manufacturing and other facilities:

Location	Annual Capacity
	(millions of pounds)
Eufaula, Alabama	275
McIntyre, Georgia	275 *
Toomsboro, Georgia	1,000 *
Millen, Georgia	250 *
Kopeysk, Russia	100
Total ceramic manufacturing capacity	1,900 **
Marshfield, Wisconsin – sand processing	1,500 *
New Iberia, Louisiana – resin-coating	300 ***
Total current capacity	3,700

* Given market conditions during 2015, we stopped production at our McIntyre and Millen manufacturing facilities and greatly reduced output levels at our Toomsboro and Marshfield facilities.

** During 2013, the Company began production of KRYPTOSPHERE® at its New Iberia facility. Production volumes will vary, but are not expected to exceed 15 million pounds annually.

*** Processing activities at the New Iberia facility primarily involve resin-coating of previously manufactured ceramic proppant substrate.

The retrofit of the first production line at an existing plant to produce KRYPTOSPHERE® was completed in late 2015. With this retrofit, we can now produce up to 100 million pounds of KRYPTOSPHERE® annually. While this retrofit enables production of our new KRYPTOSPHERE® technology products, it did not add additional production capacity. We have decided to defer completing retrofit of a second production line until market conditions warrant moving forward with the project.

During 2015, our overall total ceramic plant utilization was approximately 30% of stated capacity. Our sand processing plant in Marshfield operated at approximately 50% of its stated capacity during 2015. In addition, we expect our ceramic and sand processing plants to operate significantly below stated capacity during 2016. If industry conditions do not improve, we expect to reduce output levels or idle operations at plants as a result of decreased demand for our products. Construction of additional manufacturing capacity beyond these facilities is not expected in the foreseeable future, and would be dependent on the expected future demand for our products, access to needed capital and the ability to obtain necessary environmental permits.

Long-Lived Assets By Geographic Area

Long-lived assets, consisting of net property, plant and equipment, goodwill, intangibles, and other long-term assets as of December 31 in the United States and other countries are as follows:

	2015	2014	2013
		($ in millions)	
Long-lived assets:			
United States	$538.8	$578.5	$472.1
International (primarily China, Russia and Canada)	12.3	18.1	35.5
Total	$551.1	$596.6	$507.6

Distribution

We maintain finished goods inventories at each of our manufacturing facilities and at remote stocking facilities. The North American remote stocking facilities consist of bulk storage silos with truck trailer loading facilities, as well as rail yards for direct transloading from rail car to tank trucks. International remote stocking sites are duty-free warehouses operated by independent owners. North American sites are typically supplied by rail, and international sites are typically supplied by container ship. In total, we lease approximately 2,650 rail cars for use in the distribution of our products, of which we have subleased approximately 800 rail cars. The price of our products sold for delivery in the lower 48 United States and Canada typically includes just-in-time delivery of proppant to the operator's well site, which eliminates the need for customers to maintain an inventory of ceramic proppant.

Raw Materials

Ceramic proppant is made from alumina-bearing ores (commonly referred to as clay, bauxite, bauxitic clay or kaolin, depending on the alumina content) that are readily available on the world market. Bauxite is largely used in the production of aluminum metal, refractory material and abrasives. The main known deposits of alumina-bearing ores in the United States are in Arkansas, Alabama and Georgia; other economically mineable known deposits are located in Australia, Brazil, China, Gabon, Guyana, India, Jamaica, Russia and Surinam.

For the production of CARBO*HSP*® and CARBO*PROP*® in the United States we use bauxite, and have historically purchased our annual requirements at the seller's current prices. We believe that our ability to purchase bauxite on the open market and current bauxite inventories will sufficiently provide for our bauxite needs in the United States during 2016.

Our Eufaula, McIntyre, Toomsboro and Millen facilities primarily use locally mined kaolin for the production of CARBO*LITE*®, CARBO*ECONOPROP*® and CARBO*HYDROPROP*®. We have entered into bi-lateral contracts that require a supplier to sell to us, and us to purchase from the supplier, at least fifty percent of the Eufaula facility's and Millen facility's annual kaolin requirements. The Eufaula contract runs through May 2017, with options to extend this agreement for additional three year terms. The Millen contract, which commenced in July 2014, has an initial term of five years with options to extend the agreement for additional five year terms. We have obtained ownership rights in acreage in Wilkinson County, Georgia, which contains in excess of a twelve year supply of kaolin for our Georgia facilities based on full capacity production rates. We have entered into a long-term agreement with a third party to mine and transport this material at a fixed price subject to annual adjustment. The agreement requires us to utilize the third party to mine and transport a majority of the McIntyre and Toomsboro facility's annual kaolin requirement. Overall, we estimate that our fee simple and leasehold mineral rights in the states of Alabama and Georgia contain approximately 20.2 million tons of kaolin suitable for use in production of our kaolin-based proppants.

Our production facility in Kopeysk, Russia currently uses bauxite for the production of CARBO*PROP*®. Bauxite is purchased under annual agreements that stipulate fixed prices for up to a specified quantity of material.

In 2011, the Company secured a five-year contract with a supplier and consummated the purchase of two parcels of property containing sand reserves. We utilize our own CARBO Northern White sand in our sand processing facility in Marshfield, Wisconsin, which supplies raw frac sand to the proppant market.

Ceramic Production Process

Ceramic proppants are made by grinding or dispersing ore to a fine powder, combining the powder into small pellets and firing the pellets in a rotary kiln. We use three different methods to produce ceramic proppant.

Our plants in McIntyre, Georgia and Kopeysk, Russia use a dry process, which utilizes clay, bauxite, bauxitic clay or kaolin. The raw material is ground, pelletized and screened. The manufacturing process is completed by firing the product in a rotary kiln.

Our plants in Eufaula, Alabama, Toomsboro, Georgia, and Millen, Georgia, use a wet process, which starts with kaolin that is formed into slurry. The slurry is then pelletized in a dryer and the pellets are then fired in a rotary kiln.

The portion of our plant in New Iberia, Louisiana that manufactures ceramic proppant uses a new manufacturing process associated with the Company's KRYPTOSPHERE® product line. In addition, the first phase of a retrofit with this new process was substantially completed during late 2015 at our manufacturing facility in Eufaula, Alabama.

Our rotary kilns are primarily heated by the use of natural gas.

Patent Protection and Intellectual Property

We make ceramic proppant and ceramic media used in foundry and scouring processes (the latter two items comprising a minimal volume of overall sales) by processes and techniques that involve a high degree of proprietary technology, some of which is protected by patents.

We own multiple patents in the United States and various foreign countries that relate to different types of ceramic proppant and production methods used for ceramic proppant and media; however, production of products pursuant to these patents does not currently constitute a material portion of our output. We also own multiple U.S. and foreign patents that relate to methods for the detection of subterranean fractures.

During 2014 and 2015, we obtained three U.S. patents relating to our KRYPTOSPHERE® manufacturing process, and expect these patents to provide assistance in the future sales of this product line.

We own multiple U.S. patent applications (together with a number of counterpart applications pending in foreign jurisdictions). A portion of the U.S. patent applications cover ceramic proppant, detectable proppant, processes for making ceramic and detectable proppant, and detection of subterranean fractures. The applications are in various stages of the patent prosecution process, and patents may not issue on such applications in any jurisdiction for some time, if they issue at all.

Falcon Technologies owns two U.S. patents, which expire in 2026 and 2027 and relate to construction of secondary containment areas. In addition, Falcon Technologies owns a U.S. patent which expires in 2031 and relates to the construction of a polyurea-coated tank base. Falcon Technologies also owns multiple U.S patent applications (together with a number of counterpart applications pending in foreign jurisdictions), each of which relates to tank bases or methods of constructing secondary containment areas.

We believe that our patents have historically been important in enabling us to compete in the market to supply proppant to the natural gas and oil industry. We intend to enforce, and have in the past vigorously enforced, our patents. We may from time to time in the future be involved in litigation to determine the enforceability, scope and validity of our patent rights. In addition to patent rights, and perhaps more notably, we use a significant amount of trade secrets, or "know-how," and other proprietary information and technology in the conduct of our business. None of this "know-how" and technology is licensed from third parties.

Seasonality

Historically, our business has not been subject to regular material seasonality fluctuations. However, with the activity in resource plays in the northern and eastern United States, we have experienced higher levels of proppant sales activities during warmer weather periods and less during colder weather months. In addition, sales activities can be decreased by the spring snow and ice "break-up" in Canada, North Dakota, Montana, and the Northeast U.S., as well as the winter holidays in December and January.

Environmental and Other Governmental Regulations

We believe that our operations are in substantial compliance with applicable domestic and foreign federal, state and local environmental and safety laws and regulations.

Existing federal environmental requirements such as the Clean Air Act and the Clean Water Act, as amended, impose certain restrictions on air and water pollutants from our operations via permits and regulations. Those pollutants include volatile organic compounds, nitrogen oxides, sulfur dioxide, particulate matter, storm water and wastewater discharges and other by-products. In addition to meeting environmental requirements for existing operations, we must also demonstrate compliance with environmental regulations in order to obtain permits prior to any future expansion. The United States Environmental Protection Agency ("EPA") and state programs require covered facilities to obtain individual permits or have coverage under an EPA general permit issued to groups of facilities. A number of federal and state agencies, including but not limited to, the EPA, the Texas Commission of Environmental Quality, the Louisiana Department of Environmental Quality, the Alabama Department of Environmental Management, the Wisconsin Department of Natural Resources, and the Georgia Environmental Protection Division, in states in which we do business, have environmental regulations applicable to our operations. Historically we have been able to obtain permits, where necessary, to build new facilities and modify existing facilities that allow us to continue compliant operations and obtaining these permits in a timely manner will continue to be an important factor in our ability to do so in the future.

Employees

As of December 31, 2015, we had 665 employees worldwide. In addition to the services of our employees, we employ the services of consultants as required. Our employees are not represented by labor unions. There have been no work stoppages or strikes during the last three years that have resulted in the loss of production or production delays. We believe our relations with our employees are satisfactory.

Executive Officers of the Registrant

Gary A. Kolstad (age 57) was elected in June 2006, by our Board of Directors to serve as President and Chief Executive Officer and a Director of the Company. Mr. Kolstad previously served in a variety of positions over 21 years with Schlumberger. Mr. Kolstad became a Vice President of Schlumberger in 2001, where he last held the positions of Vice President, Oilfield Services – U.S. Onshore and Vice President, Global Accounts.

Ernesto Bautista III (age 44) joined the Company as a Vice President and Chief Financial Officer in January 2009. From July 2006 until joining the Company, Mr. Bautista served as Vice President and Chief Financial Officer of W-H Energy Services, Inc., a Houston, Texas based diversified oilfield services company ("W-H Energy"). From July 2000 to July 2006, he served as Vice President and Corporate Controller of W-H Energy. From September 1994 to May 2000, Mr. Bautista served in various positions at Arthur Andersen LLP, most recently as a manager in the assurance practice, specializing in emerging, high growth companies. Mr. Bautista is a certified public accountant in the State of Texas.

Don P. Conkle (age 51) was appointed Vice President, Marketing and Sales in October 2012. Mr. Conkle previously held a variety of domestic and international managerial positions in engineering, marketing and sales, and technology development over a 26 year period with Schlumberger. He served in the positions of Vice President of Stimulation Services from 2007 until 2009, as GeoMarket Manager (Qatar & Yemen) from 2009 until 2011 and as Production Group Marketing and Technology Director from 2011 until he joined the Company.

Roger Riffey (age 57) joined the Company in July 2006 as Director of Logistics and Customer Service. He was appointed Plant Manager of the Toomsboro, Georgia, facility in July 2010, and was named Vice President, Manufacturing in May 2013. Previously, Mr. Riffey held positions with Rio Tinto Energy in Special Projects, U.S. Borax as Global Logistics Manager and Kerr-McGee Coal Corporation as Manager of Marketing.

John R. Bakht (age 46) was appointed Vice President, General Counsel, Corporate Secretary and Chief Compliance Officer in June 2015. Mr. Bakht joined the Company after 13 years with Baker Hughes Incorporated, where he last served as Vice President – Legal, U.S. Operations, Strategy and Corporate Development, and Reservoir Development Services. Mr. Bakht holds a B.A. in Economics from the University of North Carolina at Chapel Hill and a J.D. from The University of Texas.

All officers are elected for one-year terms or until their successors are duly elected. There are no arrangements between any officer and any other person pursuant to which he was selected as an officer. There is no family relationship between any of the named executive officers or between any of them and the Company's directors.

Forward-Looking Information

The Private Securities Litigation Reform Act of 1995 provides a "safe harbor" for forward-looking statements. This Form 10-K, our Annual Report to Shareholders, any Form 10-Q or any Form 8-K of the Company or any other written or oral statements made by or on behalf of the Company may include forward-looking statements which reflect the Company's current views with respect to future events and financial performance. The words "believe", "expect", "anticipate", "project", "estimate", "forecast", "plan" or "intend" and similar expressions identify forward-looking statements. Readers are cautioned not to place undue reliance on these forward-looking statements, each of which speaks only as of the date the statement was made. We

undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. Our forward-looking statements are based on assumptions that we believe to be reasonable but that may not prove to be accurate. All of our forward-looking information is subject to risks and uncertainties that could cause actual results to differ materially from the results expected. Although it is not possible to identify all factors, these risks and uncertainties include the risk factors discussed below.

Our results of operations could be adversely affected if our business assumptions do not prove to be accurate or if adverse changes occur in our business environment, including but not limited to:

- a potential decline in the demand for oil and natural gas;
- potential declines or increased volatility in oil and natural gas prices that would adversely affect our customers, the energy industry or our production costs;
- potential reductions in spending on exploration and development drilling in the oil and natural gas industry that would reduce demand for our products and services;
- seasonal sales fluctuations;
- an increase in competition in the proppant market, including imports from foreign countries;
- logistical and distribution challenges relating to certain resource plays that do not have the type of infrastructure systems that are needed to efficiently support oilfield services activities;
- the development of alternative stimulation techniques, such as extraction of oil or gas without fracturing;
- increased governmental regulation of hydraulic fracturing;
- increased regulation of emissions from our manufacturing facilities;
- the development of alternative proppants for use in hydraulic fracturing;
- general global economic and business conditions;
- an increase in raw materials costs;
- fluctuations in foreign currency exchange rates; and
- the potential expropriation of assets by foreign governments.

Our results of operations could also be adversely affected as a result of worldwide economic, political and military events, including, but not limited to, war, terrorist activity or initiatives by the Organization of the Petroleum Exporting Countries ("OPEC"). For further information, see "Item 1A. Risk Factors."

Available Information

Our annual reports on Form 10-K, proxy statements, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 ("Exchange Act") are made available free of charge on our internet website at http://www.carboceramics.com as soon as reasonably practicable after such material is filed with, or furnished to, the Securities and Exchange Commission ("SEC").

The public may read and copy any materials that we file with the SEC at the SEC's Public Reference Room at 100 F Street, Room 1580, N.E., Washington, D.C. 20549. The public may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC, at http://www.sec.gov.

Item 1A. ***Risk Factors***

You should consider carefully the trends, risks and uncertainties described below and other information in this Form 10-K and subsequent reports filed with the SEC before making any investment decision with respect to our securities. If any of the following trends, risks or uncertainties actually occurs or continues, our business, financial condition or operating results could be materially adversely affected, the trading prices of our securities could decline, and you could lose all or part of your investment.

Our business and financial performance depend on the level of activity in the natural gas and oil industries.

Our operations are materially dependent upon the levels of activity in natural gas and oil exploration, development and production. More specifically, the demand for our products is closely related to the number of natural gas and oil wells completed in geologic formations where ceramic or sand proppants are used in fracture treatments. These activity levels are affected by both short-term and long-term trends in oil and natural gas prices. In recent years, oil and natural gas prices and, therefore, the level of exploration, development and production activity, have experienced significant fluctuations. Worldwide economic, political and military events, including war, terrorist activity, events in the Middle East and initiatives by OPEC, have contributed, and are likely to continue to contribute, to price volatility. The global supply of oil is currently at historically high levels, and there is potential for geopolitical and regulatory events, such as normalization of trade relations with the Islamic Republic of Iran, to further increase supply of oil. Additionally, warmer than normal winters in North America and other weather patterns may adversely impact the short-term demand for natural gas and, therefore, demand for our products and services. Natural gas prices experienced a significant decline during 2012 and have remained low since then, which has resulted in a decline in the United States drilling rig count. Further, the price of oil has declined precipitously since the second half of 2014. This reduction in oil and natural gas prices has depressed the level of natural gas and oil exploration, development, production and well completions activity, resulting in significantly reduced demand and pricing for our products. This decline has had and continues to have a significant adverse impact on our results. If oil and natural gas prices and well completion activity do not materially improve and/or demand for our products does not otherwise increase, this decline could reasonably be expected to have a material adverse effect on our financial condition or operations, including, but not limited to, temporary idling all or a portion of our facilities until such time as market conditions improve.

We may be unable to comply with certain financial covenants under our existing credit facility, and there may be few attractive alternatives in the credit and capital markets, making it potentially difficult to secure on acceptable terms the cash needed to meet our liquidity needs.

Our primary sources of liquidity are cash on hand, cash flow from operations, and borrowing capacity under our revolving credit facility, subject to certain limitations contained in the agreement for that facility. Our ability to fund our working capital, capital expenditures, debt service and other obligations and to comply with the financial covenants under our credit facility depends on our future operating performance and cash from operations and other liquidity-generating transactions, which are in turn subject to prevailing oil and natural gas prices, economic conditions and other factors, many of which are beyond our control. We currently believe that cash on hand, cash flow from operations, borrowing capacity under our credit facility and cash flow from other liquidity-generating transactions will enable us to meet our working capital, capital expenditure, debt service and other funding requirements for the remainder of the year. However, if our future operating performance falls materially below our expectations, our plans prove to be materially inaccurate, or industry conditions do not materially improve, we may require additional financing, and there is no guarantee that such financing will be available. Moreover, our credit facility requires our compliance with certain financial covenants, and there can be no assurance that we will remain in compliance with them. In addition, there is no assurance our lender will agree to waive or modify these financial covenants. An event of default under our existing credit facility could have a material adverse impact on the Company and its financial condition.

If we are unable to generate sufficient cash flow from operations and cannot amend our existing credit facility, our ability to support our liquidity needs, including, but not limited to, servicing our debt obligations will depend on our ability to access the credit and capital markets, neither of which may be available to us on acceptable terms, or at all. Even if such financing is or becomes available, future financing transactions may significantly increase the Company's interest expense, which could in turn reduce our financial flexibility and our ability to fund other activities and could make us more vulnerable to changes in operating performance or economic downturns generally. The inability to generate sufficient cash, modify our financial covenants, or obtain replacement or additional financing could have a material adverse effect on our financial condition and on our ability to meet our obligations.

We cannot provide any assurance that we will be able to access the capital or credit markets on acceptable terms or timing, or at all. Access to the capital markets and the cost and availability of credit may be adversely affected by factors beyond our control, including turmoil in the financial services industry, volatility in securities trading markets, the continuing downturn in the oil and gas industry and general economic conditions. Currently, we no longer qualify as a "well-known seasoned issuer," which previously enabled us to, among other things, file automatically effective shelf registration statements. Now, even if we are able to access the capital markets, any attempt to do so could be more expensive or subject to significant delays when compared with previous periods.

Our business and financial performance has suffered and could suffer further if the levels of hydraulic fracturing continue to decline or cease as a result of the low commodity price of oil and natural gas, development of new processes, increased regulation or a continued decrease in drilling activity.

Substantially all of our products are proppants used in the completion and re-completion of natural gas and oil wells through the process of hydraulic fracturing. Completion activity is directly impacted by the price of oil and natural gas. In addition, demand for our proppants is substantially higher in the case of horizontally drilled wells, which allow for multiple hydraulic fractures within the same well bore but are more expensive to develop than vertically drilled wells. A reduction in horizontal drilling or the development of new processes for the completion of natural gas and oil wells leading to a reduction in, or discontinuation of the use of, hydraulic fracturing could cause a decline in demand for our products. Additionally, increased regulation or environmental restrictions on hydraulic fracturing or the materials used in this process could negatively affect our business by increasing the costs of compliance or resulting in operational delays, which could cause operators to abandon the process due to commercial impracticability. Moreover, future federal, state local or foreign laws or regulations could otherwise limit or ban hydraulic fracturing. Several states in which our customers operate have adopted, or are considering adopting, regulations that have imposed, or could impose, more stringent permitting, transparency, disposal and well construction requirements on hydraulic fracturing operations. Some states, such as New York, have banned the process of hydraulic fracturing altogether. Similar efforts have been proposed in other states. Any of these events could have a material adverse effect on our results of operations and financial condition. As stated elsewhere, the upstream oil and natural gas industry is in the midst of a severe contraction, resulting in a significant reduction in horizontal drilling and further resulting in a material decline in demand for our products and services.

We have distribution and logistical challenges in our business

As oil and natural gas prices fluctuate, our customers may shift their focus back and forth between different resource plays, some of which can be located in geographic areas that do not have well-developed transportation and distribution infrastructure systems. Transportation and logistical operating expenses continue to comprise a significant portion of our total delivered cost of sales. Therefore, serving our clients in these less-developed areas presents distribution and other operational challenges that affect our sales and negatively impact our operating costs. Disruptions in transportation services, including shortages of rail cars or a lack of rail transportation services or developed infrastructure, could affect our ability to timely and cost effectively deliver to our customers and could provide a competitive advantage to competitors located in closer proximity to customers. Additionally, increases in the price of diesel fuel could negatively impact operating costs if we are unable to pass

those increased costs along to our customers. Failure to find long-term solutions to these logistical challenges could adversely affect our ability to respond quickly to the needs of our customers or result in additional increased costs, and thus could negatively impact our results of operations and financial condition.

We operate in an increasingly competitive market.

The proppant market is highly competitive. We compete with other domestic and international suppliers of ceramic proppant, as well as with suppliers of sand for use as proppant, in the hydraulic fracturing of natural gas and oil wells. The expiration of key patents owned by the Company has resulted in additional competition in the market for ceramic proppant. Specifically, Chinese manufacturers have imported ceramic proppant of varying quality into North America, which has led to an oversupply of product in the marketplace. While we believe our ceramic proppant can be differentiated from low quality imports, the oversupply in the marketplace had resulted in pricing and margin pressures. In 2014 and 2013, ceramic proppant imports from China decreased somewhat when compared to early 2012, but these imports were still present in the market. Imports of ceramic proppant from China into North America were at significantly lower levels in 2015, as demand and pricing for ceramic proppant weakened. The entry of additional competitors into the market to supply ceramic proppant or a surge in the level of ceramic proppant imports into North America could have a material adverse effect on our results of operations and financial condition.

We have been and may continue to be adversely affected by decreased demand for our proppant or the development by our competitors of alternative proppants.

Ceramic proppant is a premium product capable of withstanding higher pressure and providing more highly conductive fractures than mined sand, which is the most commonly used proppant type. During 2015, we saw some operators that have traditionally used ceramic proppant experiment with the use of mined sand in its place. As commodity prices in the oil and natural gas industry have further declined, pressure on operators to reduce cost has had a detrimental impact on the demand for ceramic proppant, which is a higher cost product than mined sand. Although we believe that the use of ceramic proppant or resin-coated sand generates higher production rates and more favorable production economics than mined sand, the shifting of customer demand to lower cost products, such as mined sand or resin-coated sand, has had an adverse effect on our results of operations and could have a material adverse effect on our financial condition. The development and use of alternative proppant could also cause a decline in demand for our products, and could have a material adverse effect on our results of operations and financial condition.

We rely upon, and receive a significant percentage of our revenues from, a limited number of key customers and end users.

During 2015, our key customers included several of the largest participants in the worldwide petroleum pressure pumping industry. Two of these customers each accounted for more than 10% of our 2015 revenues. However, the end users of our products are numerous operators of natural gas and oil wells that hire pressure pumping service companies to hydraulically fracture wells. During 2015, a majority of our ceramic proppant sales were directed to a concentrated number of end users. We generally supply our domestic pumping service customers with products on a just-in-time basis, with transactions governed by individual purchase orders. Continuing sales of product depend on our direct customers and the end user well operators being satisfied with product quality, pricing, availability and delivery performance. While we believe our relations with our customers and our end users are satisfactory, a material decline in the level of sales to any one of our major customers or loss of a key end user due to unsatisfactory product performance, pricing, delivery delays or any other reason could have a material adverse effect on our results of operations and financial condition.

The operations of our customers, and thus the results of our operations, are subject to a number of operational risks, interruptions and seasonal trends.

As hydraulic fracturing jobs have increased in size and intensity, common issues such as weather, equipment delays or changes in the location and types of oil and natural gas plays can result in increased variability in proppant sales volumes. Our business operations and those of our customers involve a high degree of operational risk. Natural disasters, adverse weather conditions, collisions and operator error could cause personal injury or loss of life, severe damage to and destruction of property, equipment and the environment, and suspension of operations. Our customers perform work that is subject to unexpected or arbitrary interruption or termination. The occurrence of any of these events could result in work stoppage, loss of revenue, casualty loss, increased costs and significant liability to third parties. We have not historically considered seasonality to be a significant risk, but with the increase in resource plays in the northern and eastern United States as well as our operations in Marshfield, Wisconsin, our results of operations are exposed to seasonal variations and inclement weather. Operations in certain regions involve more seasonal risk in the winter months, and work is hindered during other inclement weather events. This variability makes it more difficult to predict sales and can result in greater fluctuations to our quarterly financial results. These quarterly fluctuations could result in operating results that are below the expectations of public market analysts and investors, and therefore may adversely affect the market price for our common stock.

The ability of our customers to complete work, as well as our ability to mine sand from cold climate areas, could be affected during the winter months. Our revenue and profitability could decrease during these periods and in other severe weather conditions because work is either prevented or more costly to complete. If a substantial amount of production is interrupted, our cash flow and, in turn, our results of operations could be materially and adversely affected.

Our North American ceramic proppant production is manufactured at two plants. All of our mined sand is processed at one plant. Any adverse developments at those plants could have a material adverse effect on our financial condition and results of operations.

With the idling of our McIntyre and Millen plants, we are producing the majority of our North American ceramic production from two plants. Our Marshfield, Wisconsin plant represents 100% of our annual mined sand processing capacity. Any adverse developments at these plants, including a material disruption in production, an inability to supply the plant with raw materials at a competitive cost, or adverse developments due to catastrophic events, could have a material adverse effect on our financial condition and results of operations.

We provide environmental warranties on certain of our containment and spill prevention products.

Falcon Technologies' tank liners, secondary containments and related products and services are designed to contain or avoid spills of hydrocarbons and other materials. If a release of these materials occurs, it could be harmful to the environment. Although we attempt to negotiate appropriate limitations of liability in the applicable terms of sale, some customers have required expanded warranties, indemnifications or other terms that could hold Falcon Technologies responsible in the event of a spill or release under particular circumstances. If Falcon Technologies is held responsible for a spill or release of materials from one of its customer's facilities, it could have a material adverse effect on our results of operations and financial condition.

We rely upon intellectual property to protect our proprietary rights. Failure to protect our intellectual property rights may affect our competitive position, and protecting our rights or defending against third-party allegations of infringement may be costly.

The Company uses a significant amount of trade secrets, or "know-how," and other proprietary information and technology in the conduct of its business. In some cases, we rely on trade secrets, trademarks or contractual restrictions to protect intellectual property rights that are not patented. The steps we take to protect the non-patented intellectual property may not be sufficient to protect it and any loss or diminishment of such intellectual

property rights could negatively impact our competitive advantage. Additionally, our competitors could independently develop the same or similar technologies that are only protected by trade secret and thus do not prevent third parties from competing with us. Furthermore, even protected intellectual property rights can be infringed upon by third parties. Monitoring unauthorized use of Company intellectual property can be difficult and expensive, and adequate remedies may not be available.

Although the Company does not believe that it is infringing upon the intellectual property rights of others by using such proprietary information and technology, it is possible that such a claim might be asserted against the Company in the future. In the event any third party makes a claim against us for infringement of patents or other intellectual property rights of a third party, such claims, with or without merit, could be time-consuming and result in costly litigation. In addition, the Company could experience loss or cancellation of customer orders, experience product shipment delays, or be subject to significant liabilities to third parties. If our products or services were found to infringe on a third party's proprietary rights, the Company could be required to enter into royalty or licensing agreements to continue selling its products or services. Royalty or licensing agreements, if required, may not be available on acceptable terms, if at all, which could seriously harm our business. Involvement in any patent dispute or other intellectual property dispute or action to protect trade secrets and expertise could have a material adverse effect on the Company's business.

Significant increases in fuel prices for any extended periods of time will increase our operating expenses.

The price and supply of natural gas are unpredictable, and can fluctuate significantly based on international, political and economic circumstances, as well as other events outside of our control, such as changes in supply and demand due to weather conditions, actions by OPEC and other oil and gas producers, regional production patterns and environmental concerns. Natural gas is a significant component of our direct manufacturing costs and price escalations will likely increase our operating expenses and can have a negative impact on income from operations and cash flows. We operate in a competitive marketplace and may not be able to pass through all of the increased costs that could result from an increase in the cost of natural gas.

Environmental compliance costs and liabilities could reduce our earnings and cash available for operations.

We are subject to increasingly stringent laws and regulations relating to environmental protection, including laws and regulations governing air emissions, water discharges and waste management. The technical requirements of complying with these environmental laws and regulations are becoming increasingly expensive and complex, and may affect the Company's ability to expand its operations. Our ability to continue the expansion of our manufacturing capacity to meet market demand is contingent upon obtaining required environmental permits and compliance with their terms, which continue to be more restrictive and require longer lead times to obtain in anticipation of any efforts to expand and increase capacity. We incur, and expect to continue to incur, capital and operating costs to comply with environmental laws and regulations.

In addition, we use some hazardous substances and generate certain industrial wastes in our operations. Many of our current and former properties are or have been used for industrial purposes. Accordingly, we could become subject to potentially material liabilities relating to the investigation and cleanup of contaminated properties, and to claims alleging personal injury or property damage as the result of exposures to, or releases of, hazardous substances. These laws also may provide for "strict liability" for damages to natural resources or threats to public health and safety. Strict liability can render a party liable for environmental damage without regard to negligence or fault on the part of the party. Some environmental laws provide for joint and several strict liability for remediation of spills and releases of hazardous substances.

Stricter enforcement of existing laws and regulations, new laws and regulations, the discovery of previously unknown contamination or the imposition of new or increased requirements could restrict our expansion efforts, require us to incur costs, or become the basis of new or increased liabilities. Any of these events could reduce our earnings and our cash available for operations.

Our international operations subject us to risks inherent in doing business on an international level that could adversely impact our results of operations.

International revenues accounted for approximately 29%, 24% and 21% of our total revenues in 2015, 2014 and 2013, respectively. We may not succeed in overcoming the risks that relate to or arise from operating in international markets. Risks inherent in doing business on an international level include, among others, the following:

- economic and political instability (including as a result of the threat or occurrence of armed international conflict or terrorist attacks);
- potential declines or increased volatility in oil and natural gas prices that would adversely affect our customers, the energy industry or our production costs;
- changes in regulatory requirements, economic sanctions, tariffs, customs, duties and other trade barriers;
- transportation delays and costs;
- power supply shortages and shutdowns;
- difficulties in staffing and managing foreign operations and other labor problems;
- currency rate fluctuations, convertibility and repatriation;
- taxation of our earnings and the earnings of our personnel;
- potential expropriation of assets by foreign governments; and
- other risks relating to the administration of or changes in, or new interpretations of, the laws, regulations and policies of the jurisdictions in which we conduct our business.

In particular, we are subject to risks associated with our production facility in Kopeysk, Russia. The legal systems in Russia are still developing and are subject to change. Accordingly, our operations and orders for products in Russia could be adversely impacted by changes to or interpretation of the country's law. Moreover, some parts of our Russian operations have been impacted by the imposition of trade sanctions enacted by the U.S. government in response to the ongoing conflict in Ukraine. These sanctions continue in place and changes to them or additional measures implemented by the U.S. government or other applicable authorities could further affect our sales and operations in the region. Further, if manufacturing in the region is disrupted, our overall capacity could be significantly reduced and sales and/or profitability could be negatively impacted.

Undetected defects in our fracture simulation software could adversely affect our business.

Despite extensive testing, our software could contain defects, bugs or performance problems. If any of these problems are not detected, the Company could be required to incur extensive development costs or costs related to product recalls or replacements. The existence of any defects, errors or failures in our software products may subject us to liability for damages, delay the development or release of new products and adversely affect market acceptance or perception of our software products or related services, any one of which could materially and adversely affect the Company's business, results of operations and financial condition.

The market price of our common stock will fluctuate, and could fluctuate significantly.

The market price of the Company's common stock will fluctuate, and could fluctuate significantly, in response to various factors and events, including the following:

- the liquidity of the market for our common stock;
- seasonal or quarterly sales fluctuations;
- differences between our actual financial or operating results and those expected by investors and analysts;

- changes in analysts' recommendations or projections;
- new statutes or regulations or changes in interpretations of existing statutes and regulations affecting our business;
- changes in general economic or market conditions; and
- broad market fluctuations.

Our actual results could differ materially from results anticipated in forward-looking statements we make.

Some of the statements included or incorporated by reference in this Form 10-K are forward-looking statements. These forward-looking statements include statements relating to trends in the natural gas and oil industries, the demand for ceramic proppant and our performance in the "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Business" sections of this Form 10-K. In addition, we have made and may continue to make forward-looking statements in other filings with the SEC, and in written material, press releases and oral statements issued by us or on our behalf. Forward-looking statements include statements regarding the intent, belief or current expectations of the Company or its officers. Our actual results could differ materially from those anticipated in these forward-looking statements. See "Business–Forward-Looking Information."

Item 1B. ***Unresolved Staff Comments***

Not applicable.

Item 2. ***Properties***

We maintain our corporate headquarters in leased office space in Houston, Texas and also lease space for our technology center in Houston. We own our manufacturing facilities, land and substantially all of the related production equipment in New Iberia, Louisiana, Eufaula, Alabama, and Kopeysk, Russia and lease our McIntyre, Toomsboro, and Millen, Georgia, facilities. We own the buildings and production equipment at our facility in Luoyang, China, and have been granted use of the land on which the facility is located through 2051 under the terms of a land use agreement with the People's Republic of China. The Luoyang, China facility was shut down during 2015, and we do not intend to resume production.

The facilities in McIntyre and Toomsboro, Georgia, include real property, plant and equipment that we lease from the Development Authority of Wilkinson County. The original lease was executed in 1997 and was last amended in 2008. The term of the current lease, which covers both locations, terminates on November 1, 2017, and includes a Company renewal option to extend through November 1, 2021. Under the terms of the lease, we are responsible for all costs incurred in connection with the premises, including costs of construction of the plant and equipment. At the termination of the lease, title to all of the real property, plant and equipment is to be conveyed to us in exchange for nominal consideration. We have the right to purchase the property, plant and equipment at any time during the term of the lease for a nominal price.

In November 2012, we entered into a lease with the Development Authority of Jenkins County for the land and improvements associated with the construction of a plant in Millen, Georgia. The lease term continues until the tenth anniversary of the completion of the last phase of the facility. Similar to lease terms of the two other Georgia facilities, the Millen lease requires us to be responsible for all costs (including construction costs) incurred in connection with the premises. Moreover, title to the real property, plant and equipment of the facility is to be conveyed to us at the end of the lease term for nominal consideration, and may be purchased by us at any time for a nominal price. We completed construction and commenced operations of the first 250 million pound ceramic production line in Millen during 2014. We began the construction on a second 250 million pound production line in Millen. However, due to current market conditions, the construction and completion of this second line has been suspended until market conditions warrant completion.

The Marshfield, Wisconsin sand processing plant, which became operational during 2012, is located on land owned by us. We made a decision that we will not move forward with construction of a resin coating plant in Marshfield, Wisconsin for which we had previously developed engineering plans and procured certain equipment that had long-lead delivery times.

We own or otherwise utilize distribution facilities in multiple locations around the world. See "Item 1. Business – Distribution."

We own approximately 4,618 acres of land and leasehold interests near our plants in Georgia and Alabama. The land contains raw material for use in the production of our lightweight ceramic proppants. We also hold approximately 313 acres of land and leasehold interests in Wisconsin.

Falcon Technologies owns its service facility located in Decatur, Texas, and leases other regional service facilities within the United States.

Item 3. ***Legal Proceedings***

From time to time, we are the subject of legal proceedings arising in the ordinary course of business. We do not believe that any of these proceedings will have a material adverse effect on our business or our results of operations.

Item 4. ***Mine Safety Disclosure***

Several of our U.S. manufacturing facilities process mined minerals, and therefore are viewed as mine operations subject to regulation by the federal Mine Safety and Health Administration under the Federal Mine Safety and Health Act of 1977. Information concerning mine safety violations or other regulatory matters required by section 1503(a) of the Dodd-Frank Wall Street Reform and Consumer Protection Act and the recently proposed Item 106 of Regulation S-K (17 CFR 229.106) is included in Exhibit 95 to this annual report.

PART II

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

Common Stock Market Prices, Dividends and Stock Repurchases

Our common stock is traded on the New York Stock Exchange (ticker symbol CRR). The number of record and beneficial holders of our common stock as of February 1, 2016 was approximately 11,973.

The following table sets forth the high and low sales prices of our common stock on the New York Stock Exchange and dividends for the last two fiscal years:

	2015			2014		
	Sales Price		Cash Dividends	Sales Price		Cash Dividends
Quarter Ended	High	Low	Declared (1)	High	Low	Declared (2)
March 31	$41.61	$30.00	$0.43	$137.99	$105.78	$0.60
June 30	46.00	30.04	—	154.12	131.23	—
September 30	39.05	18.99	0.20	150.22	59.23	0.66
December 31	24.74	15.40	—	57.16	34.10	—

(1) Represents quarters during which dividends were declared. The payment months for cash dividends were February 2015 ($0.33), May 2015 ($0.10), August 2015 ($0.10) and November 2015 ($0.10).
(2) Represents quarters during which dividends were declared. The payment months for cash dividends were February 2014 ($0.30), May 2014 ($0.30), August 2014 ($0.33) and November 2014 ($0.33).

In January 2016, our Board of Directors suspended our policy of paying quarterly cash dividends, and there can be no assurance as to the payment of future dividends because they depend on future earnings, capital requirements and financial condition.

On January 28, 2015, our Board of Directors authorized the repurchase of up to two million shares of our common stock. Shares are effectively retired at the time of purchase. As of February 26, 2016, we had not repurchased any shares under this plan.

Securities Authorized for Issuance Under Equity Compensation Plans

For information regarding securities authorized for issuance under equity compensation plans, refer to "ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS" and "NOTE 10 — Stock Based Compensation" in the accompanying "Notes to Consolidated Financial Statements" in this Annual Report.

The following table provides information about our repurchases of common stock during the quarter ended December 31, 2015, all of which represent shares surrendered to us for tax withholding obligations upon the vesting of restricted stock:

ISSUER PURCHASES OF EQUITY SECURITIES

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plan (1)	Maximum Number of Shares that May be Purchased Under the Plan (2)
10/01/15 to 10/31/15	1,445 (3)	$18.44	—	2,000,000
11/01/15 to 11/30/15	91 (3)	$19.31	—	2,000,000
12/01/15 to 12/31/15	—	—	—	2,000,000
Total	1,536		—	

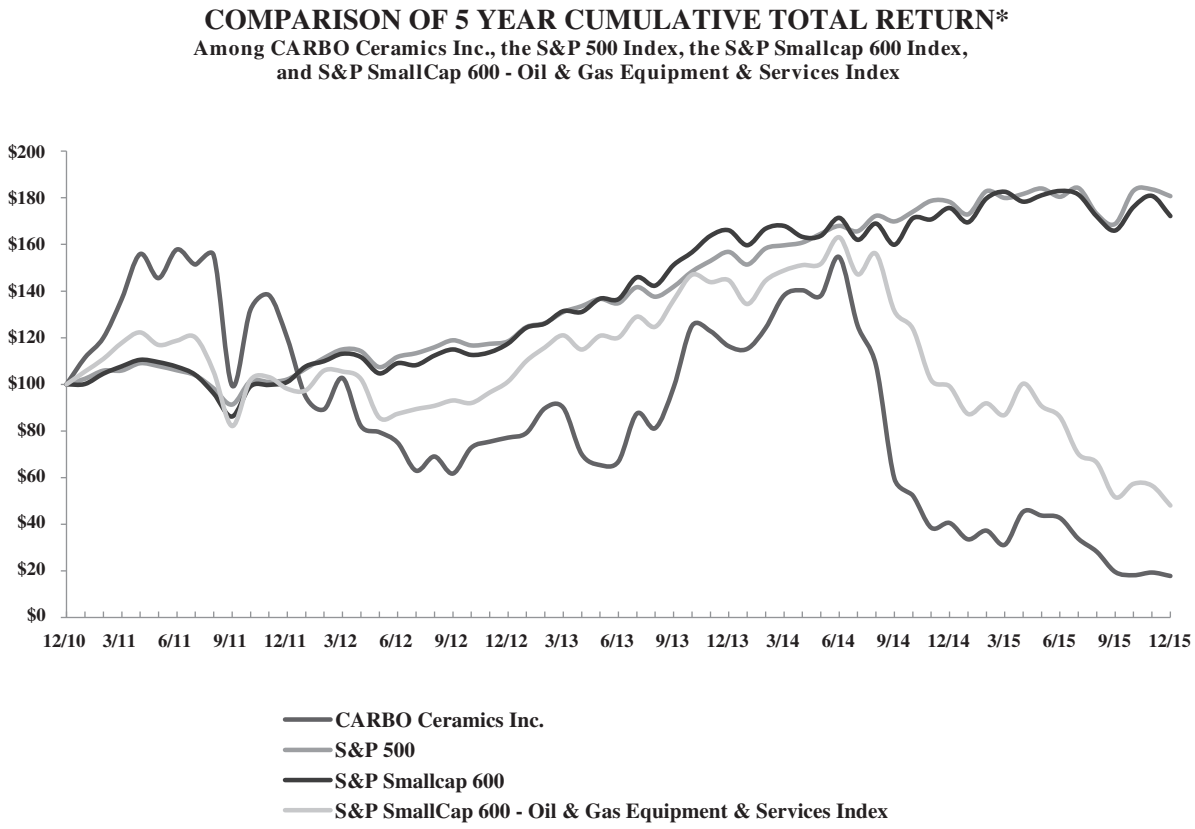
(1) On January 28, 2015, we announced the authorization by our Board of Directors for the repurchase of up to two million shares of our Common Stock.

(2) Represents the maximum number of shares that may be repurchased under the plan as of period end. As of February 26, 2016, a maximum of 2,000,000 shares may be repurchased under the plan.

(3) Represents shares of stock withheld for the payment of withholding taxes upon the vesting of restricted stock.

Stock Performance Graph

The graph below compares the cumulative shareholder return on our common stock with the cumulative returns of the the S&P 500 index, the S&P Smallcap 600 index, and the S&P SmallCap 600 - Oil & Gas Equipment & Services index. The graph tracks the performance of a $100 investment in our common stock and in each of the indexes (with the reinvestment of all dividends) from December 31, 2010 to December 31, 2015.



* $100 invested on 12/31/10 in stock or index, including reinvestment of dividends. Fiscal year ending December 31.

Item 6. *Selected Financial Data*

The following selected financial data are derived from our audited consolidated financial statements. The data should be read in conjunction with Management's Discussion and Analysis of Financial Condition and Results of Operations and the consolidated financial statements and notes thereto included elsewhere in this Form 10-K.

	Years ended December 31,				
	2015	2014	2013	2012	2011
	($ in thousands, except per share data)				
Statement of Income Data:					
Revenues	$ 279,574	$648,325	$667,398	$645,536	$625,705
Cost of sales	335,699	467,045	474,403	422,031	363,990
Gross (loss) profit	(56,125)	181,280	192,995	223,505	261,715
Selling, general, & administrative expenses	62,199	72,535	68,447	64,033	62,381
Other operating expenses (income) (1)	44,908	15,890	(43)	586	1,732
Operating (loss) profit	(163,232)	92,855	124,591	158,886	197,602
Other (expense) income, net	(517)	16	610	(296)	(152)
(Loss) income before income taxes	(163,749)	92,871	125,201	158,590	197,450
Income tax (benefit) expense	(54,205)	37,283	40,315	52,657	67,314
Net (loss) income	$(109,544)	$ 55,588	$ 84,886	$105,933	$130,136
(Loss) earnings per share:					
Basic	$ (4.76)	$ 2.41	$ 3.67	$ 4.59	$ 5.62
Diluted	$ (4.76)	$ 2.41	$ 3.67	$ 4.59	$ 5.62

	December 31,				
	2015	2014	2013	2012	2011
	($ in thousands, except per share data)				
Balance Sheet Data:					
Current assets	$285,277	$337,611	$371,382	$349,917	$302,565
Current liabilities	70,290	77,415	56,688	50,830	79,066
Property, plant and equipment, net	537,731	568,716	478,535	426,232	392,659
Total assets	836,369	934,226	878,951	808,878	740,865
Total shareholders' equity	642,306	776,057	768,587	713,078	630,158
Cash dividends per share	$ 0.63	$ 1.26	$ 1.14	$ 1.02	$ 0.88

(1) Other operating expenses include costs of start-up activities and gains/losses on disposal or impairment of assets.

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

Executive Level Overview

CARBO Ceramics Inc. is an oilfield service technology company that generates revenue primarily through the sale of products and services to the oil and gas industry for production enhancement and environmental services.

Our production enhancement businesses promote increased operators' production and EUR by providing industry leading technology to *Design, Build, and Optimize the Frac™*. Our environmental services business is intended to protect operators' assets, minimizes environmental risk, and lowers LOE.

Our principal business consists of manufacturing and selling proppant products for use primarily in the hydraulic fracturing of oil and natural gas wells. These proppant products include ceramic and raw frac sand. We, through our wholly-owned subsidiary StrataGen, Inc., also provide the industry's most widely used hydraulic fracture simulation software under the brand FracPro®, as well as hydraulic fracture design and consulting services under the brand StrataGen. Falcon Technologies, a wholly-owned subsidiary of ours, uses proprietary technology to provide products that are designed to enable its clients to extend the life of their storage assets, reduce the potential for hydrocarbon spills and provide containment of stored materials.

Our products and services help oil and gas producers increase production and recovery rates from their wells, thereby lowering overall finding and development costs. As a result, our business is dependent to a large extent on the level of drilling and hydraulic fracturing activity in the oil and gas industry worldwide. Although our ceramic proppants are more expensive than alternative non-ceramic proppants, we have been able to demonstrate the cost-effectiveness of our products to numerous operators of oil and gas wells through technical marketing activity. We believe our future prospects benefit from both an increase in drilling and hydraulic fracturing activity worldwide and the desire of industry participants to improve production results and lower their overall development costs.

We believe international sales will continue to have an important role in our business. International revenues represented 29%, 24% and 21% of total revenues in 2015, 2014 and 2013, respectively.

Operating profit margin for our ceramic proppant business is principally impacted by sales volume, product mix, sales price, distribution costs, manufacturing costs, including natural gas, and our production levels as a percentage of our capacity. The level of selling, general and administrative spending, as well as other operating expenses, can also impact operating profit margins. In 2013, 2014 and 2015, operating profit margin was also impacted by spending to bring our new KRYPTOSPHERE® proppant technology to a commercial state. And, in 2015 and 2014, the Company recognized asset impairment charges related to certain long-lived assets.

As a result of the depressed commodity price for oil during 2015 and the resulting negative impact on industry activity levels, which is having a negative impact on demand for ceramic proppant, we are currently focused on cash preservation and cost reduction strategies. During 2015, we slowed and idled proppant production to assist in managing cash and inventory levels. We mothballed our proppant facility in McIntyre, Georgia and shut down our facility in Luoyang, China, both in early 2015. We idled our proppant facility in Millen, Georgia in late 2015 as market conditions further deteriorated. These events resulted in significant negative impact to the financial results of our operations. Additionally, we suspended completion of two large construction projects until such time that market conditions improve enough to warrant completion. We suspended completion of the second production line at Millen, Georgia and also the second phase of the retrofit of an existing plant with our new KRYPTOSPHERE® technology. As of December 31, 2015, the value of the temporarily suspended assets relating to these two projects totaled approximately 85% of the Company's total construction in progress and we estimate that both projects are over 90% complete. We intend to continue to reduce our cost base to better match anticipated activity in 2016, including a reduction in SG&A costs from 2015 levels. See "Item 1–Business" and "Item 1A–Risk Factors".

Although most direct manufacturing expenses have been relatively stable or predictable over time, we have experienced volatility in the cost of natural gas, which is used in production by our domestic manufacturing facilities. The cost of natural gas has been a significant component of total monthly domestic direct production expense. In recent years, the price of natural gas has been low compared to historical prices, as well as fairly stable from period to period. However, in an effort to mitigate volatility in the cost of natural gas purchases and reduce exposure to short term spikes in the price of this commodity, we contract in advance for portions of our future natural gas requirements. Our gas contract commitments can extend several years into the future. Despite the efforts to reduce exposure to changes in natural gas prices, it is possible that, given the significant portion of manufacturing costs represented by this item, gross margins as a percentage of sales may decline and changes in net income may not directly correlate to changes in revenue. Historically, we had taken delivery of all natural gas

quantities under contract, which exempted us from accounting for the contracts as derivative instruments. However, due to the severe decline in industry activity beginning in early 2015, we significantly reduced production levels and consequently did not take delivery of all of the contracted natural gas quantities. As a result, we began to account for relevant contracts as derivative instruments.

In 2013, we began selling raw frac sand. Raw frac sand products sell at much lower prices and with lower gross profit margins than our ceramic proppant. While gross profit is generally not meaningfully impacted by the sale of this product, given the level of sales volumes, our overall gross profit margin as a percent of revenues can be affected as can the overall average selling price of all proppants sold.

General Business Conditions

Our proppant business is impacted by the number of natural gas and oil wells drilled in North America, and the need to hydraulically fracture these wells. In markets outside North America, sales of our products are also influenced by the overall level of drilling and hydraulic fracturing activity. Furthermore, because the decision to use ceramic proppant is based on comparing the higher initial costs to the future value derived from increased production and recovery rates, our business is influenced by the current and expected prices of natural gas and oil.

Beginning in late 2014 and continuing throughout 2015, a severe decline in oil and natural gas prices led to a significant decline in oil and natural gas industry drilling activities and capital spending. We expect that these low oil and natural gas prices will continue for the foreseeable future and will continue to negatively impact both pricing and demand for proppant. During 2015, the average price of West Texas Intermediate ("WTI") crude oil fell 48% to $48.69 per barrel compared to $93.26 per barrel in 2014. The average United States rig count fell 48% in 2015 to 977 rigs compared to 1,862 rigs in 2014. In addition, exploration and production ("E&P") operators used more raw frac sand in place of ceramic proppant during 2015 when compared to 2014, a trend that we expect to continue in 2016, as our customers are under increasing pressure to consider lower cost alternatives in the current commodity price environment, notwithstanding the superior performance results of our products. These events, along with an oversupplied ceramic proppant market and low oil and natural gas prices, drove lower demand and lower average prices for our proppants during 2015, when compared with 2014. Our revenues in 2015 totaled $279.6 million compared to $648.3 million in 2014.

Beginning early in 2015, we implemented a number of initiatives to preserve cash and lower costs, including: reducing workforce across our organization, lowering our production output levels in order to align with lower demand, limiting capital expenditures and reducing dividends. As a result of these measures, in the United States, during the first quarter of 2015, we temporarily idled production (including furloughing employees) at the Toomsboro and Millen, Georgia manufacturing plants for approximately 90 days and mothballed our manufacturing plant in McIntyre, Georgia. During the second quarter of 2015, production resumed at both of the temporarily idled facilities; however, during the fourth quarter of 2015, we again idled production at the Millen, Georgia manufacturing plant. The plant in McIntyre, Georgia resumed production at low output levels in late 2015 but will again be mothballed during the first half of 2016. We continue to assess our liquidity needs and manage cash flows and, if industry conditions do not improve and/or demand for our products does not otherwise increase, we would expect to temporarily idle all or a portion of our currently active facilities in the short term. Mothballed facilities are expected to remain closed for one year or longer. In the event that the market demand for proppants further decreases, we may further reduce operations at our active manufacturing plants. As a result of operating these plants below their normal production capacity, we expensed $33.7 million of production overhead costs in excess of amounts that would have been allocated to each unit of production at normal production levels. Also, we did not take delivery of all of the contracted natural gas quantities and, as a result, we began to account for relevant contracts as derivative instruments and recorded a loss on these contracts of $15.0 million for the year ended December 31, 2015.

Due to worsening market conditions during the fourth quarter of 2015, we evaluated our long-lived assets for possible impairment and in doing so recognized an impairment charge totaling $43.7 million primarily related

to our McIntyre, Georgia manufacturing plant, Marshfield, Wisconsin sand processing facility, and long-term bauxite inventories. In addition, we recognized an impairment of $9.5 million associated with Falcon goodwill and intangible assets.

Furthermore, conditions in the North American oil and natural gas market also negatively impacted the proppant market inside China beginning during the second half of 2014. Proppant manufacturers in China experienced excess production capacity due to market conditions in North America. As a result, during the second half of 2014, we recognized an impairment charge on our long-lived assets in China and wrote down the value of certain inventories in China down to lower market prices, and further wrote down the value of certain of our finished goods and raw materials in China down to lower market prices during the first quarter of 2015. During the course of 2015, we released substantially all of our employees inside China, sold off inventories and proceeded to wind-down the operation. We do not intend to resume operations in China. During the fourth quarter of 2015, we substantially liquidated the China assets and liabilities, as defined by U.S. generally accepted accounting principles. Consequently, we recognized a non-cash gain of $8.9 million from realizing our China-related cumulative foreign currency translation adjustment ("CTA"). The Company anticipates in the near term commencing the process to legally dissolve the entity, which is expected to be completed by the end of 2016.

Critical Accounting Policies

Our Consolidated Financial Statements are prepared in accordance with accounting principles generally accepted in the U.S., which require us to make estimates and assumptions (see Note 1 to the Consolidated Financial Statements). We believe that, of our significant accounting policies, the following may involve a higher degree of judgment and complexity.

Revenue is recognized when title passes to the customer (generally upon delivery of products) or at the time services are performed. We generate a significant portion of our revenues and corresponding accounts receivable from sales to the petroleum pressure pumping industry. In addition, we generate a significant portion of our revenues and corresponding accounts receivable from sales to two major customers, both of which are in the petroleum pressure pumping industry. As of December 31, 2015, approximately 28% of the balance in trade accounts receivable was attributable to those two customers. We record an allowance for doubtful accounts based on our assessment of collectability risk and periodically evaluate the allowance based on a review of trade accounts receivable. Trade accounts receivable are periodically reviewed for collectability based on customers' past credit history and current financial condition, and the allowance is adjusted, if necessary. If the economic downturn in the petroleum pressure pumping industry worsens or does not materially improve or, for some other reason, any of our primary customers were to experience significant adverse conditions, our estimates of the recoverability of accounts receivable could be reduced by a material amount and the allowance for doubtful accounts could be increased by a material amount. At December 31, 2015, the allowance for doubtful accounts totaled $2.7 million.

We value inventory using the weighted average cost method. Assessing the ultimate realization of inventories requires judgments about future demand and market conditions. We regularly review inventories to determine if the carrying value of the inventory exceeds market value and we record an adjustment to reduce the carrying value to market value, as necessary. We evaluate the carrying value of our inventories relative to market value generally on a geographic by-country basis. As needed, more specific reviews within a particular country are made on a product group basis. Future changes in demand and market conditions could cause us to be exposed to additional obsolescence or slow moving inventory. If actual market conditions are less favorable than those projected by management, lower of cost or market adjustments may be required. Due to increasing competition in the China proppant market, we evaluated the carrying values of our inventories in China and concluded that market prices had fallen below carrying costs. During 2015, we recorded a $4.5 million lower of cost or market adjustment primarily related to inventories in China.

Income taxes are provided for in accordance with ASC Topic 740, "*Income Taxes*". This standard takes into account the differences between financial statement treatment and tax treatment of certain transactions. Deferred

tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect of a change in tax rates is recognized as income or expense in the period that includes the enactment date. This calculation requires us to make certain estimates about our future operations. Changes in state, federal and foreign tax laws, as well as changes in the Company's financial condition, could affect these estimates.

Long-lived assets, which include net property, plant and equipment, goodwill, intangibles and other long-term assets, comprise a significant amount of the Company's total assets. The Company makes judgments and estimates in conjunction with the carrying values of these assets, including amounts to be capitalized, depreciation and amortization methods and useful lives. Additionally, the carrying values of these assets are periodically reviewed for impairment or whenever events or changes in circumstances indicate that the carrying amounts may not be recoverable. An impairment loss is recorded in the period in which it is determined that the carrying amount is not recoverable. This requires the Company to make long-term forecasts of its future revenues and costs related to the assets subject to review. These forecasts require assumptions about demand for the Company's products and services, future market conditions and technological developments. Significant and unanticipated changes to these assumptions could require a provision for impairment in a future period.

During the first quarter of 2015, we temporarily idled production and furloughed employees at our Toomsboro and Millen, Georgia manufacturing plants (both for approximately 90 days) and mothballed our manufacturing plant in McIntyre, Georgia. We shut down our manufacturing plant at Luoyang, China, and we do not intend to resume production at that facility. Temporarily idled facilities are expected to remain closed for a short period of time, generally less than one year. Mothballed facilities are expected to remain closed for one year or longer. The accounting treatment is the same for both temporarily idled and mothballed facilities, except that mothballed assets are evaluated for possible impairment while temporarily idled assets are not necessarily assessed for impairment. In the instances of idling both the Toomsboro and Millen, Georgia plants in early 2015 for approximately 90 days each, we did not assess the temporarily idled assets for impairment because such short-term stoppages of production were designed to temporarily reduce inventory levels and as such did not significantly impact the long-term expected cash flows of the plants. We continue to depreciate both temporarily idled and mothballed assets.

At the time the manufacturing facility in McIntyre, Georgia was mothballed, we conducted an interim impairment analysis of the related long-lived assets. Key assumptions used in the analysis included: 1) the plant would remain closed for two years; 2) in year 3 production would start-up at 50% of capacity and thereafter return to production levels within normal capacity; and 3) market pricing would be similar to lower 2015 levels, thus conservatively reducing expected gross profit and thus cash flows. Pursuant to that analysis, we determined that the projected gross cash flows attributable to that facility substantially exceeded the carrying value of the assets; therefore, we concluded that there was no impairment.

Later, as a result of worsening conditions in the oil and natural gas industry during the fourth quarter of 2015, we evaluated substantially of all our long-lived assets for possible impairment as of December 31, 2015. Key assumptions used in the analysis varied by facility. The overriding assumptions included: 1) the industry downturn would last longer than originally anticipated, taking up to five years to fully recover; 2) production levels would rise over the recovery period eventually returning to production levels within normal capacity; 3) market pricing would be similar to lower 2015 levels, thus conservatively reducing expected gross profit and thus cash flows; 4) our wet process manufacturing plants were evaluated as a group of assets because they manufacture like products; and 5) other facilities were separately evaluated. Pursuant to that analysis, we determined that the projected gross cash flows attributable to certain assets did not exceed the carrying value of the assets; therefore, we concluded that there was indication of possible impairment. We engaged the services of a third party consulting firm to assist with the determination of the fair market value of the related assets and concluded that the assets were impaired. The key assumptions and inputs impacting the fair value analysis were

the weighted average cost of capital and perpetuity growth rate as well as certain market data with respect to the property and equipment at each facility. As a result, we recorded a $43.7 million impairment of long-lived assets, primarily relating to the McIntyre, Georgia manufacturing plant, the Marshfield, Wisconsin sand processing facility, and long-term bauxite inventories. We separately evaluated our goodwill and in doing so recorded a $9.5 million impairment of Falcon goodwill and an unamortized intangible asset, totaling the full carrying value of the assets.

Early in 2015, we identified an existing accounting policy as critical related to the accounting for derivative instruments as a result of not taking delivery of all of our contracted natural gas quantities. We began accounting for relevant natural gas contracts as derivative instruments, which requires us to recognize the gas contracts as either assets or liabilities at fair value with an offsetting entry in earnings. We use the income approach in determining the fair value of our derivative instruments. The model used considers the difference, as of each balance sheet date, between the contracted prices and the New York Mercantile Exchange ("NYMEX") forward strip price for each contracted period. The estimated cash flows from these contracts are discounted using a discount rate of 5.5%, which reflects the nature of the contracts as well as the timing and risk of estimated cash flows associated with the contracts. The discount rate had an immaterial impact on the fair value of the contracts for the year ended December 31, 2015. The last natural gas contract will expire in December 2018. During the year ended December 31, 2015, we recognized a loss on derivative instruments of $15.0 million in cost of sales. As of December 31, 2015, gas contracts covering 6,600,000 MMBtu are subject to accounting as derivative instruments. Future decreases in the NYMEX forward strip prices will result in additional derivative losses while future increases in the NYMEX forward strip prices will result in derivative gains. Future gains or losses will approximate the change in NYMEX natural gas prices relative to the total quantity of natural gas under contracts subject to accounting as derivatives.

Early in 2015, low production levels triggered the component of our inventory accounting policy relating to operating at production levels below normal capacity. We expense fixed production overhead amounts in excess of amounts that would have been allocated to each unit of production at normal production levels. As a result of low production levels and idled and mothballed facilities, we expensed $33.7 million of production costs during the year ended December 31, 2015.

Results of Operations

Net (Loss) Income

($ in thousands)	2015	Percent Change	2014	Percent Change	2013
Net (Loss) Income	$(109,544)	(297)%	$55,588	(35)%	$84,886

For the year ended December 31, 2015, we reported net loss of $109.5 million, a decrease of 297% compared to the $55.6 million net income reported in the previous year. Operations in 2015 were negatively impacted by the severe decline in the oil and natural gas industry. Net loss in 2015 was impacted by a 48% reduction in the North American rig count which resulted in lower ceramic proppant sales volumes, a decrease in the average selling price of ceramic proppant, a $43.7 million impairment of long-lived and other assets, a $9.5 million impairment of goodwill and intangible assets, a $15.0 million loss on natural gas derivative instruments, and $33.7 million in production costs expensed as a result of low production levels and idled and mothballed facilities. Further impacting net loss was $9.5 million in severance costs, and $4.5 million of lower of cost or market inventory adjustments. Net loss was partially offset by actions taken throughout 2015 to reduce our cost base and an $8.9 million non-cash gain from realizing our China-related cumulative foreign currency translation adjustment.

For the year ended December 31, 2014, we reported net income of $55.6 million, a decrease of 35% compared to the $84.9 million reported in the previous year. Operations in 2014 continued to be impacted by the shift in drilling activity away from natural gas basins due to the severe decline in natural gas prices in late 2011.

In late 2014, the industry experienced a severe decline in oil and natural gas prices, which has caused drilling activity to be further reduced. In addition, operations were impacted by a growing number of operators experimenting with the use of raw frac sand and delays in some well completions during the third and fourth quarters of 2014. While we achieved record sales volume of nearly 2.9 billion pounds, net income in 2014 decreased primarily as a result of lower ceramic proppant sales volumes, a $15.1 million impairment of long-lived assets, $5.4 million lower of cost or market adjustments to reduce China finished goods and raw materials carrying values to their lower market prices and higher SG&A expenses. Income tax expense in 2014 decreased primarily due to lower pretax income but was negatively impacted by valuation allowances recorded against certain deferred tax assets.

Individual components of financial results are discussed below.

Revenues

($ in thousands)	2015	Percent Change	2014	Percent Change	2013
Consolidated revenues	$279,574	(57)%	$648,325	(3)%	$667,398

Revenues of $279.6 million for the year ended December 31, 2015 decreased 57% compared to $648.3 million in 2014. The decrease was mainly attributable to a decrease in proppant sales volumes, in conjunction with market-driven reductions in the average selling prices, both which are presented in the table below. The decline in ceramic sales volume was largely attributable to a 48% reduction in the North American rig count and a depressed commodity price for oil and the resulting negative impact on industry activity levels, along with an increased number of operators using a higher percentage of raw frac sand as an alternative to proppant due to its lower cost.

Revenues of $648.3 million for the year ended December 31, 2014 decreased 3% compared to $667.4 million in 2013. Revenues decreased primarily due to a 6% decrease in ceramic proppant sales volume, a 33% decrease in resin-coated sand sales volumes, and a decrease in Falcon revenues. These decreases were partially offset by an increase in Northern White Sand sales volumes.

Worldwide proppant sales volumes were as follows.

Proppant Sales Volumes (Volumes in million pounds)	For the years ended December 31,					
	2015		2014		2013	
	Volumes	Price/lb	Volumes	Price/lb	Volumes	Price/lb
Ceramic	818	$0.27	1,618	$0.33	1,718	$0.33
Resin Coated Sand	19	0.19	162	0.22	241	0.20
Northern White Sand	819	0.03	1,131	0.03	101	0.03
Total	1,656	0.15	2,911	$0.21	2,060	$0.30

North American (defined as Canada and the U.S.) proppant sales volume decreased 44% in 2015 compared to 2014. North American ceramic proppant sales volume decreased 54% in 2015 compared to 2014. International (excluding Canada) proppant sales volume decreased 36% in 2015 compared to 2014, primarily due to decreases in Mexico, Latin America, and China, partially offset by an increase in Russia.

North American (defined as Canada and the U.S.) proppant sales volume increased 46% in 2014 compared to 2013 on higher sales of Northern White Sand. North American ceramic proppant sales volume decreased 10% in 2014 compared to 2013, partly as a result of some customers experimenting with more sand proppant and delays in some well completions during the third and fourth quarters of 2014, partly due to falling oil and natural gas prices. International (excluding Canada) proppant sales volume increased 6% in 2014 compared to 2013 primarily due to increases in Mexico, partially offset by a decrease in China.

Primarily due to the change in product mix and reductions in selling prices due to the down cycle, the average selling price per pound of all proppant was $0.15 during 2015 compared to $0.21 during 2014 and $0.30 in 2013. In addition to product mix and sales prices, average selling prices can be impacted by geographic areas of sale, customer requirements and delivery methods.

Gross (Loss) Profit

($ in thousands)	2015	Percent Change	2014	Percent Change	2013
Consolidated gross (loss) profit	$(56,125)	(131)%	$181,280	(6)%	$192,995
As a % of revenues	(20)%		28%		29%

Our cost of sales related to proppant manufacturing consists of manufacturing costs, packaging and transportation expenses associated with the delivery of our products to our customers and handling costs related to maintaining finished goods inventory and operating our remote stocking facilities. Variable manufacturing costs include raw materials, labor, utilities and repair and maintenance supplies. Fixed manufacturing costs include depreciation, property taxes on production facilities, insurance and factory overhead.

Gross loss for the year ended December 31, 2015 was $56.1 million, or (20)% of revenues, compared to gross profit of $181.3 million, or 28% of revenues, for 2014. The decrease in gross (loss) profit was primarily the result of a 49% decline in ceramic proppant sales volumes and a decrease in the average selling price of ceramic proppant. In addition, we recorded a $15.0 million loss on natural gas derivative instruments and expensed $33.7 million in production costs as a result of low production levels and idled and mothballed facilities. We expect to incur these types of expenses in the future until our production levels return to normal capacity. Gross (loss) profit was further reduced by $6.8 million in severance costs incurred as a result of the reductions in workforce and $4.5 million of lower of cost or market inventory adjustments primarily associated with inventories in China.

Gross profit for the year ended December 31, 2014 was $181.3 million, or 28% of revenues, compared to $193.0 million, or 29% of revenues, for 2013. The decrease in gross profit was primarily the result of lower ceramic proppant sales volumes and a decrease in Falcon gross profit, partially offset by a favorable change in ceramic sales mix to higher margin lightweight ceramic proppants and improved margins on sand proppants. In addition, due to increasing competition in the China proppant market, the Company recorded $5.4 million lower of cost or market adjustments in 2014 to reduce finished goods and raw materials carrying values to their lower market prices.

Selling, General & Administrative (SG&A) and Other Operating Expenses

($ in thousands)	2015	Percent Change	2014	Percent Change	2013
Consolidated SG&A and start-up	$62,996	(14%)	$73,346	7%	$68,447
As a % of revenues	23%		11%		10%
Loss (gain) on disposal or impairment of assets	44,111	193%	15,079	—	(43)

SG&A and start-up expenses consisted of $62.2 million of SG&A expenses and $0.8 million of start-up costs for the year ended December 31, 2015 compared to $72.5 million of SG&A expenses and $0.8 million of start-up costs for 2014. The decrease in SG&A expenses primarily resulted from our actions taken during 2015 to reduce our cost base and preserve cash in light of the severe decline in the oil and natural gas industry. These decreases were partially offset by $2.7 million in SG&A related severance costs. Loss on disposal or impairment of assets in 2015 consisted primarily of $43.7 million of impairment charges associated with certain long-lived assets at our manufacturing facility in McIntyre, Georgia, our sand processing facility in Marshfield, Wisconsin, and various other assets, and a $9.5 million impairment of Falcon goodwill and intangible assets. These losses were partially offset by an $8.9 million non-cash gain from realizing our China-related cumulative foreign

currency translation adjustment and $0.2 million gain on disposal of assets. As a percentage of revenues, SG&A and start-up expenses for 2015 increased to 23% in 2015 compared to 11% in 2014, primarily due to the decrease in revenues.

SG&A and start-up expenses consisted of $72.5 million of SG&A expenses and $0.8 million of start-up costs for the year ended December 31, 2014 compared to $68.4 million of SG&A expenses for 2013. The increase in SG&A expenses primarily resulted from higher research and development spending, higher compensation costs, and increased marketing spending. Loss on disposal or impairment of assets in 2014 consisted primarily of $15.1 million of impairment charges associated with certain long-lived assets at our manufacturing facility in China, as a result of deteriorating market conditions inside China, and our resin coating business, as a result of our decision that it will not move forward with construction of a resin coating plant in Marshfield, Wisconsin for which we had previously developed engineering plans and procured certain equipment that had long-lead delivery times. The resin coating assets were classified as available for sale. Gain on disposal or impairment of assets in 2013 consisted of asset disposals. As a percentage of revenues, SG&A and start-up expenses for 2014 increased to 11% in 2014 compared to 10% in 2013.

Income Tax (Benefit) Expense

($ in thousands)	2015	Percent Change	2014	Percent Change	2013
Income Tax (Benefit) Expense	$(54,205)	(245)%	$37,283	(8)%	$40,315
Effective Income Tax Rate	33.1%		40.1%		32.2%

Consolidated income tax benefit was $54.2 million, or 33.1% of pretax loss, for the year ended December 31, 2015 compared to $37.3 million, or 40.1% of pretax income for 2014. The tax benefit is due largely to net operating losses sustained during 2015. We intend to file amended 2013 and 2014 income tax returns early in 2016 in an effort to receive refunds on those tax returns. As a result of the net operating loss in 2015, we lost the benefit of our Section 199 manufacturing deduction, which negatively impacted the effective tax rate.

Consolidated income tax expense was $37.3 million, or 40.1% of pretax income, for the year ended December 31, 2014 compared to $40.3 million, or 32.2% of pretax income for 2013. The $3.0 million decrease is primarily due to lower pre-tax income partially offset by a higher effective tax rate. The higher effective tax rate is primarily associated with recording a valuation allowance on foreign deferred tax assets for which recoverability was not certain.

Outlook

During 2015, we have taken significant steps to reduce future costs and align production levels with lower customer demands resulting from the severe decline in the oil and natural gas industry. The timing and magnitude of an industry recovery is uncertain. The cost-cutting reaction by many operators has been significant, as evidenced by the sharp reduction in industry activity. The impact on the entire ceramic proppant industry has been severe, leading other domestic proppant suppliers to make similar decisions to mothball and idle ceramic proppant manufacturing capacity. While U.S. imports of ceramic proppant have declined significantly compared to 2014, we believe that inventory levels of low quality imported ceramic proppant in the U.S. may still be at levels that keep pressure on pricing.

The continued decline in commodity prices during the fourth quarter of 2015 and early into 2016 creates an increasingly challenging operating environment as completion activity by operators remains very depressed. Various industry sources have estimated that the North American rig count will likely decline by double digits in the first quarter of 2016 compared to the fourth quarter of 2015. With a lower rig count, we expect continued pressure on our proppant sales in the first half of 2016.

As we move into 2016, managing cash and our cost structure will be important to navigate what we anticipate will be another very challenging year. We expect to spend less than $10.0 million in capital expenditures in 2016, a significant decrease when compared to the $62.7 million in capital expenditures in 2015. In addition, as previously announced, the Board of Directors has decided to suspend our policy of paying quarterly cash dividends. Going forward, we will continue to assess our liquidity needs and make adjustments to manage cash flows.

Also, we remain focused on advancing our production enhancement technologies. These technologies, which increase hydrocarbon recovery and lower finding and development costs for operators, continued to result in new client gains across most of the major oil and gas basins in North America. We recently completed the first line of the plant retrofit to enable production of KRYPTOPSHERE, which is another important step in driving our production enhancement technologies forward. With this retrofit, we can now produce up to 100 million pounds of KRYPTOSPHERE® annually. We began a retrofit of a second production line, but have decided to defer completing the retrofit until market conditions warrant moving forward with the project.

Liquidity and Capital Resources

At December 31, 2015, we had cash and cash equivalents of $78.9 million compared to cash and cash equivalents of $24.3 million at December 31, 2014. During 2015, we generated $70.6 million of cash from operating activities and borrowed $70.0 million on our line of credit. Uses of cash included $62.7 million for capital expenditures, $14.7 million for the payment of cash dividends, $7.0 million for repayments on our line of credit, $1.0 million for the effect of exchange rate changes on cash, and $0.6 million for purchases of our common stock. Major capital spending in 2015 included retrofitting an existing plant with the new KRYPTOSPHERE® proppant technology.

On January 19, 2016, our Board of Directors suspended our policy of paying quarterly cash dividends. Future quarterly dividends to holders of our common stock, if at all, will be dependent on our financial condition, the amount of funds generated from operations and the level of capital expenditures. We estimate our total capital expenditures in 2016 will be less than $10.0 million. Due to market conditions, the completion of the second line at the manufacturing facility in Millen, Georgia and the second phase of a plant retrofit with new KRYPTOSPHERE® technology have been suspended until such time that market conditions warrant completion.

We maintain a line of credit with a bank. As of December 31, 2015, our outstanding debt under the credit agreement was $88.0 million. As of January 31, 2016, we were in breach of the asset coverage ratio covenant (which requires a ratio of certain assets to total debt of at least 1.25). Our asset coverage ratio for January 2016 was 1.21. In order to cure this breach, we repaid $16.1 million of borrowings in February 2016. As of February 26, 2016, our outstanding debt under the credit facility was $71.9 million. Depending on the duration and severity of the industry downturn, there is a risk that we may again not be in compliance with certain of the financial covenants under our existing credit agreement. Such a breach would constitute an event of default under our credit agreement if it remained uncured or a modification or waiver is not agreed to with our lender. We are currently in discussions with our lender about replacing our existing credit facility and addressing the aforementioned issues. In the event of non-compliance and if we are unable to secure waivers or modifications to the existing credit agreement or alternative sources of capital, it is possible that we may not have the liquidity sufficient to meet operating expenses, capital expenditures and other cash needs. Given continuing uncertainties with regards to the length of the industry downturn, we are evaluating alternative sources of capital, including modifications to our existing credit arrangement, although there can be no assurance that we will be able to obtain such financing or modifications on favorable terms, or at all.

On July 27, 2015, we entered into a fourth amendment to this credit facility that, among other items, (i) reduced the revolving credit facility from $100.0 million to $90.0 million; (ii) secures borrowings with a

blanket lien on substantially all of our accounts receivable and inventories; (iii) prohibits us from granting security interests in our fixed assets and real property; (iv) sets interest at LIBOR plus 4.00%; (v) sets the maturity date as December 31, 2018; and (vi) waives compliance with the maximum leverage ratio and fixed charge coverage ratio covenants through December 31, 2016. Our line of credit is subject to compliance with the covenants in the underlying amended credit agreement, some of which depend on our future operating performance and cash flow. These factors are in turn subject to prevailing oil and natural gas prices, economic conditions and other factors, many of which are beyond our control. Our credit facility also allows for the issuance of up to $9.5 million in standby letters of credit, of which $8.9 million was issued as of December 31, 2015, primarily as collateral related to our natural gas commitments.

The following table presents the financial covenants specified in our credit agreement and the actual covenant calculations as of December 31, 2015:

	Debt Covenant	Actual Covenant Calculation as of December 31, 2015
Tangible net worth [(1)]	$597.6 million	$635.1 million
Leverage ratio (waived through December 31, 2016)	maximum 2.50	-2.63
Fixed charge coverage ratio (waived through December 31, 2016)	minimum 1.50	-0.49
Asset coverage ratio	minimum 1.25	1.28
Capital expenditures [(2)]	Maximum $65.0 million	$62.7 million

(1) a minimum tangible net worth of $370.0 million, plus (1) 50% of consolidated net income from each quarter ending on or after March 31, 2010 and (ii) 100% of any equity issuance proceeds after the effective date of the agreement. On February 26, 2016, the Company entered into a sixth amendment to the credit facility that, among other items, removed the tangible net worth covenant effective July 1, 2016 through March 31, 2017, and replaced it with a minimum liquidity covenant calculated on a monthly basis beginning as of July 31, 2016 through as of March 31, 2017. For purposes of the minimum liquidity covenant, liquidity is as defined in the Wells Fargo Credit Agreement, and the minimum monthly liquidity is $88.3 million, $91.0 million, $91.8 million, $92.8 million, $95.6 million, $96.1 million, $88.0 million, $88.0 million, and $88.0 million for each of the respective months as of July 31, 2016 through as of March 31, 2017.

(2) a limitation on capital expenditures of $65.0 million annually through December 31, 2016, subject to maintaining pro forma liquidity of $15.0 million.

Additional information as to the applicable definitions and requirements of these covenants is contained in the credit agreement. We were in compliance with the financial covenants under our amended credit facility for the quarter ended December 31, 2015. However, there can be no assurance that we will remain in compliance in future quarters and months.

Off-Balance Sheet Arrangements

We had no off-balance sheet arrangements as of December 31, 2015.

Contractual Obligations

The following table summarizes our contractual obligations as of December 31, 2015:

($ in thousands)	Payments due in period				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
Long-term debt obligations	$ 88,000	$33,000	$ 55,000	$ —	$ —
Capital lease obligations	—	—	—	—	—
Operating lease obligations:					
- Primarily railroad equipment (net of subleases)	132,214	17,197	36,841	28,621	49,555
Purchase obligations:					
- Natural gas contracts	41,771	19,553	22,218	—	—
- Raw materials contracts	18,432	1,632	11,200	5,600	—
Other long-term obligations	—	—	—	—	—
Total contractual obligations	$280,417	$71,382	$125,259	$34,221	$49,555

See Note 3, Note 5 and Note 16 to the Notes to the Consolidated Financial Statements.

Operating lease obligations relate primarily to railroad equipment leases and include leases of other property, plant and equipment.

We use natural gas to power our domestic manufacturing plants. From time to time, we enter into contracts to purchase a portion of the anticipated natural gas requirements at specified prices. As of December 31, 2015, the last such contract was due to expire in December 2018.

We have entered into contracts to supply raw materials, primarily kaolin, bauxite, slurry and various forms of sand, to our manufacturing plants. Four outstanding contracts do not require us to purchase minimum annual quantities, but do require the purchase of minimum annual percentages, ranging from 50% to 100% of the respective plants' requirements for the specified raw materials. One outstanding contract requires us to purchase a minimum annual quantity of frac sand. Each of the contracts is described in Note 16 to the Notes to the Consolidated Financial Statements.

Item 7A. ***Quantitative and Qualitative Disclosures about Market Risk***

Our major market risk exposure is to foreign currency fluctuations that could impact our investments in Russia. As of December 31, 2015, our net investment that is subject to foreign currency fluctuations totaled $16.6 million, and we have recorded a cumulative foreign currency translation loss of $37.7 million, all related to Russia. This cumulative translation loss is included in Accumulated Other Comprehensive Loss. During 2015, we substantially completed the liquidation of our China plant, and as a result, we reclassified an $8.9 million gain to net income with no tax impact. From time to time, we may enter into forward foreign exchange contracts to hedge the impact of foreign currency fluctuations. There were no such foreign exchange contracts outstanding at December 31, 2015. During 2014 and continuing into 2015, the value of the Russian Ruble significantly declined relative to the U.S. dollar. The financial impact of this decline on our net assets in Russia is included in Other Comprehensive Income and the cumulative foreign currency translation loss noted above. No income tax benefits have been recorded on these losses as a result of the uncertainty about recoverability of the related deferred income tax benefits.

We have a $90.0 million revolving credit agreement with a bank. Under the terms of the agreement, the interest rate is set at LIBOR plus 4.00%. Our outstanding debt under the credit agreement was $88.0 million at December 31, 2015. We do not believe that we have any material exposure to market risk associated with interest rates.

We are subject to the risk of market price fluctuations of certain commodities, such as natural gas, and utilize forward purchase contracts to manage or reduce market risks relating to these costs. We do not enter into these transactions for speculative or trading purposes. As of December 31, 2015, we have contracted for a total of 7,920,000 MMBtu of natural gas at an average price of $4.48 per MMBtu through December 31, 2018.

Item 8. ***Financial Statements and Supplementary Data***

The information required by this Item is contained in pages F-3 through F-28 of this Report.

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

Not applicable.

Item 9A. ***Controls and Procedures***

(a) Evaluation of Disclosure Controls and Procedures

Disclosure controls and procedures are designed to ensure that information required to be disclosed in the reports filed or submitted under the Securities Exchange Act of 1934 (the "Exchange Act") is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed in the reports filed under the Exchange Act is accumulated and communicated to management, including the Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

As of December 31, 2015, management carried out an evaluation, under the supervision and with the participation of the Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of the Company's disclosure controls and procedures. There are inherent limitations to the effectiveness of any system of disclosure controls and procedures. Accordingly, even effective disclosure controls and procedures can only provide reasonable assurances of achieving their control objectives. Based upon and as of the date of that evaluation, the Chief Executive Officer and Chief Financial Officer have concluded that the Company's disclosure controls and procedures were effective to ensure that information required to be disclosed by the Company in the reports it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms, and to ensure that information required to be disclosed by the Company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the Company's management, including its Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

(b) Management's Report on Internal Control Over Financial Reporting

For Management's Report on Internal Control Over Financial Reporting, see page F-1 of this Report.

(c) Report of Independent Registered Public Accounting Firm

For the Report of Independent Registered Public Accounting Firm on the Company's internal control over financial reporting, see page F-2 of this Report.

(d) Changes in Internal Control over Financial Reporting

There were no changes in our internal control over financial reporting during the quarter ended December 31, 2015 that materially affected or are reasonably likely to materially affect, those controls.

Item 9B. ***Other Information***

Not applicable.

PART III

Certain information required by Part III is omitted from this Report. We will file a definitive proxy statement pursuant to Regulation 14A (the "Proxy Statement") not later than 120 days after the end of the fiscal year covered by this Report and certain information included therein is incorporated herein by reference. Only those sections of the Proxy Statement that specifically address the items set forth herein are incorporated by reference. Such incorporation does not include the Compensation Committee Report included in the Proxy Statement.

Item 10. *Directors, Executive Officers and Corporate Governance*

Information concerning executive officers under Item 401 of Regulation S-K is set forth in Part I of this Form 10-K. The other information required by this Item is incorporated by reference to the portions of the Company's Proxy Statement entitled "Security Ownership of Certain Beneficial Owners and Management," "Election of Directors," "Board of Directors, Committees of the Board of Directors and Meeting Attendance," "Code of Business Conduct and Ethics," "Section 16(a) Beneficial Ownership Reporting Compliance" and "Report of the Audit Committee."

Item 11. *Executive Compensation*

The information required by this Item is incorporated by reference to the portions of the Company's Proxy Statement entitled "Compensation of Executive Officers," "Director Compensation" and "Potential Termination and Change in Control Payments."

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

The information required by this Item is incorporated by reference from our Proxy Statement under the captions "Securities Ownership of Certain Beneficial Owners and Management" and "Equity Compensation Plan Information."

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

The information required by this Item is incorporated by reference to the portion of our Proxy Statement entitled "Election of Directors."

Item 14. *Principal Accounting Fees and Services*

The information required by this Item is incorporated by reference to the portion of our Proxy Statement entitled "Ratification of Appointment of our Independent Registered Public Accounting Firm."

PART IV

Item 15. ***Exhibits, Financial Statement Schedules***

(a) Exhibits, Financial Statements and Financial Statement Schedules:

1. Consolidated Financial Statements

The Consolidated Financial Statements of CARBO Ceramics Inc. listed below are contained in pages F-3 through F-28 of this Report:

Report of Independent Registered Public Accounting Firm
Consolidated Balance Sheets at December 31, 2015 and 2014
Consolidated Statements of Operations for each of the three years ended December 31, 2015, 2014 and 2013
Consolidated Statements of Comprehensive (Loss) Income for each of the three years ended December 31, 2015, 2014 and 2013
Consolidated Statements of Shareholders' Equity for each of the three years ended December 31, 2015, 2014 and 2013
Consolidated Statements of Cash Flows for each of the three years ended December 31, 2015, 2014 and 2013

2. Consolidated Financial Statement Schedules

All schedules have been omitted since they are either not required or not applicable.

3. Exhibits

The exhibits listed on the accompanying Exhibit Index are filed as part of, or incorporated by reference into, 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.

CARBO Ceramics Inc.

By: /s/ Gary A Kolstad
Gary A. Kolstad
President and Chief Executive Officer

By: /s/ Ernesto Bautista III
Ernesto Bautista III
Vice President and
Chief Financial Officer

Dated: February 26, 2016

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Gary A. Kolstad and Ernesto Bautista III, jointly and severally, his attorneys-in-fact, each with the power of substitution, for him in any and all capacities, to sign any amendments to this Report on Form 10-K, and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming all that each of said attorneys-in-fact, or his substitute or substitutes, may do or cause to be done by virtue hereof.

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

Signature	Title	Date
/s/ William C. Morris William C. Morris	Chairman of the Board	February 26, 2016
/s/ Gary A. Kolstad Gary A. Kolstad	President, Chief Executive Officer and Director (Principal Executive Officer)	February 26, 2016
/s/ Ernesto Bautista III Ernesto Bautista III	Vice President and Chief Financial Officer (Principal Financial and Accounting Officer)	February 26, 2016
/s/ Sigmund L. Cornelius Sigmund L. Cornelius	Director	February 26, 2016
/s/ Chad C. Deaton Chad C. Deaton	Director	February 26, 2016
/s/ James B. Jennings James B. Jennings	Director	February 26, 2016
/s/ H.E. Lentz, Jr. H.E. Lentz, Jr.	Director	February 26, 2016
/s/ Randy L. Limbacher Randy L. Limbacher	Director	February 26, 2016
/s/ Robert S. Rubin Robert S. Rubin	Director	February 26, 2016

MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

Management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934. The Company's internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external reporting purposes in accordance with generally accepted accounting principles.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Management, including our Chief Executive Officer and our Chief Financial Officer, assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2015. In making this assessment, it used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in Internal Control–Integrated Framework (2013). Based on its assessment and those criteria, management has concluded that the Company maintained effective internal control over financial reporting as of December 31, 2015.

The Company's independent registered public accounting firm, Ernst & Young LLP, has issued an attestation report on the Company's internal control over financial reporting. That report is included herein.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Shareholders
CARBO Ceramics Inc.

We have audited CARBO Ceramics Inc.'s internal control over financial reporting as of December 31, 2015, based on criteria established in *Internal Control–Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). CARBO Ceramics Inc.'s management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, CARBO Ceramics Inc. maintained, in all material respects, effective internal control over financial reporting as of December 31, 2015, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of CARBO Ceramics Inc. as of December 31, 2015 and 2014, and the related consolidated statements of operations, comprehensive (loss) income, shareholders' equity, and cash flows for each of the three years in the period ended December 31, 2015, and our report dated February 26, 2016 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

New Orleans, Louisiana
February 26, 2016

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Shareholders
CARBO Ceramics Inc.

We have audited the accompanying consolidated balance sheets of CARBO Ceramics Inc. as of December 31, 2015 and 2014, and the related consolidated statements of operations, comprehensive (loss) income, shareholders' equity, and cash flows for each of the three years in the period ended December 31, 2015. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of CARBO Ceramics Inc. at December 31, 2015 and 2014, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2015, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), CARBO Ceramics Inc.'s internal control over financial reporting as of December 31, 2015, based on criteria established in *Internal Control – Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), and our report dated February 26, 2016 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

New Orleans, Louisiana
February 26, 2016

CARBO CERAMICS INC.

CONSOLIDATED BALANCE SHEETS
($ in thousands, except per share data)

	December 31, 2015	December 31, 2014
ASSETS		
Current assets:		
Cash and cash equivalents	$ 78,866	$ 24,298
Trade accounts and other receivables, net	48,596	132,573
Inventories:		
Finished goods	77,537	106,941
Raw materials and supplies	27,021	37,502
Total inventories	104,558	144,443
Prepaid expenses and other current assets	3,762	5,241
Prepaid income taxes	—	19,708
Deferred income taxes	49,495	11,348
Total current assets	285,277	337,611
Property, plant and equipment:		
Land and land improvements	45,774	40,921
Land-use and mineral rights	19,877	19,877
Buildings	83,500	74,911
Machinery and equipment	642,396	627,517
Construction in progress	96,084	109,378
Total	887,631	872,604
Less accumulated depreciation and amortization	349,900	303,888
Net property, plant and equipment	537,731	568,716
Goodwill	3,500	12,164
Intangible and other assets, net	9,861	15,735
Total assets	$836,369	$934,226
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Bank borrowings	$ 33,000	$ 25,000
Accounts payable	10,709	22,922
Accrued payroll and benefits	6,003	12,466
Accrued freight	3,068	5,925
Accrued utilities	2,414	3,714
Accrued income taxes	139	—
Derivative instruments	6,240	—
Other accrued expenses	8,717	7,388
Total current liabilities	70,290	77,415
Deferred income taxes	63,858	80,754
Long-term portion of bank borrowings	55,000	—
Derivative instruments	4,915	—
Shareholders' equity:		
Preferred stock, par value $0.01 per share, 5,000 shares authorized, none outstanding	—	—
Common stock, par value $0.01 per share, 80,000,000 shares authorized; 23,280,696 and 23,092,674 shares issued and outstanding at December 31, 2015 and 2014, respectively	233	231
Additional paid-in capital	65,067	59,297
Retained earnings	614,708	739,498
Accumulated other comprehensive loss	(37,702)	(22,969)
Total shareholders' equity	642,306	776,057
Total liabilities and shareholders' equity	$836,369	$934,226

See accompanying notes to consolidated financial statements.

CARBO CERAMICS INC.

CONSOLIDATED STATEMENTS OF OPERATIONS
($ in thousands, except per share data)

	Years ended December 31,		
	2015	**2014**	**2013**
Revenues	$ 279,574	$648,325	$667,398
Cost of sales	335,699	467,045	474,403
Gross (loss) profit	(56,125)	181,280	192,995
Selling, general and administrative expenses	62,199	72,535	68,447
Start-up costs	797	811	—
Loss (gain) on disposal or impairment of assets, net	44,111	15,079	(43)
Operating (loss) profit	(163,232)	92,855	124,591
Other (expense) income:			
Interest (expense) income, net	(470)	597	777
Foreign currency exchange gain (loss), net	94	(303)	(17)
Other, net	(141)	(278)	(150)
	(517)	16	610
(Loss) income before income taxes	(163,749)	92,871	125,201
Income tax (benefit) expense	(54,205)	37,283	40,315
Net (loss) income	$(109,544)	$ 55,588	$ 84,886
(Loss) earnings per share:			
Basic	$ (4.76)	$ 2.41	$ 3.67
Diluted	$ (4.76)	$ 2.41	$ 3.67

See accompanying notes to consolidated financial statements.

CARBO CERAMICS INC.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE (LOSS) INCOME
($ in thousands)

	Years ended December 31,		
	2015	2014	2013
Net (loss) income	$(109,544)	$ 55,588	$84,886
Other comprehensive loss:			
Foreign currency translation adjustment	(5,880)	(17,952)	(2,031)
Reclassification of China cumulative translation gain to Net Loss upon substantial liquidation	(8,853)	—	—
Deferred income taxes	—	(1,756)	710
Other comprehensive loss, net of tax	(14,733)	(19,708)	(1,321)
Comprehensive (loss) income	$(124,277)	$ 35,880	$83,565

See accompanying notes to consolidated financial statements.

CARBO CERAMICS INC.

CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY
($ in thousands, except per share data)

	Common Stock	Additional Paid-In Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Total
Balances at January 1, 2013	231	57,364	657,423	(1,940)	713,078
Net income	—	—	84,886	—	84,886
Foreign currency translation adjustment, net of tax benefit of ($710)	—	—	—	(1,321)	(1,321)
Comprehensive income					83,565
Tax expense from stock based compensation	—	(205)	—	—	(205)
Stock granted under restricted stock plan, net	1	209	—	—	210
Stock based compensation	—	5,247	—	—	5,247
Shares repurchased and retired	(1)	(5,833)	—	—	(5,834)
Shares surrendered by employees to pay taxes	—	—	(1,124)	—	(1,124)
Cash dividends ($1.14 per share)	—	—	(26,350)	—	(26,350)
Balances at December 31, 2013	231	56,782	714,835	(3,261)	768,587
Net income	—	—	55,588	—	55,588
Foreign currency translation adjustment, net of tax expense of $1,756	—	—	—	(19,708)	(19,708)
Comprehensive income					35,880
Tax benefit from stock based compensation	—	303	—	—	303
Stock granted under restricted stock plan, net	1	699	—	—	700
Stock based compensation	—	6,688	—	—	6,688
Shares repurchased and retired	(1)	(5,175)	—	—	(5,176)
Shares surrendered by employees to pay taxes	—	—	(1,804)	—	(1,804)
Cash dividends ($1.26 per share)	—	—	(29,121)	—	(29,121)
Balances at December 31, 2014	$231	$59,297	$ 739,498	$(22,969)	$ 776,057
Net loss	—	—	(109,544)	—	(109,544)
Foreign currency translation adjustment	—	—	—	(5,880)	(5,880)
Reclassification of China cumulative translation gain to Net Loss upon substantial liquidation	—	—	—	(8,853)	(8,853)
Comprehensive loss					(124,277)
Tax expense from stock based compensation	—	(1,768)	—	—	(1,768)
Stock granted under restricted stock plan, net	2	698	—	—	700
Stock based compensation	—	6,840	—	—	6,840
Shares surrendered by employees to pay taxes	—	—	(580)	—	(580)
Cash dividends ($0.63 per share)	—	—	(14,666)	—	(14,666)
Balances at December 31, 2015	$233	$65,067	$ 614,708	$(37,702)	$ 642,306

See accompanying notes to consolidated financial statements.

CARBO CERAMICS INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS
($ in thousands)

	Years ended December 31,		
	2015	2014	2013
Operating activities			
Net (loss) income	$(109,544)	$ 55,588	$ 84,886
Adjustments to reconcile net (loss) income to net cash provided by operating activities:			
Depreciation and amortization	54,457	50,860	47,472
Provision for doubtful accounts	1,857	546	354
Deferred income taxes	(56,800)	24,389	10,121
Excess tax benefits from stock based compensation	—	(372)	(134)
Lower of cost or market adjustment	4,546	5,363	—
Loss (gain) on disposal or impairment of assets	44,111	15,079	(43)
Foreign currency transaction (gain) loss, net	(94)	303	17
Stock compensation expense	7,547	7,529	5,837
Loss on derivative instruments	11,155	—	—
Changes in operating assets and liabilities:			
Trade accounts and other receivables	81,371	(9,511)	(22,024)
Inventories	27,022	(25,624)	6,068
Prepaid expenses and other current assets	1,437	(112)	(1,136)
Long-term other assets	697	(122)	2,969
Accounts payable	(7,861)	2,079	4,330
Accrued expenses	(9,104)	(2,487)	1,677
Accrued income taxes, net	19,780	(17,726)	(2,823)
Net cash provided by operating activities	70,577	105,782	137,571
Investing activities			
Capital expenditures	(62,747)	(161,469)	(99,936)
Net cash used in investing activities	(62,747)	(161,469)	(99,936)
Financing activities			
Proceeds from bank borrowings	70,000	25,000	—
Repayments on bank borrowings	(7,000)	—	—
Dividends paid	(14,666)	(29,121)	(26,350)
Purchase of common stock	(580)	(6,979)	(6,958)
Excess tax benefits from stock based compensation	—	372	134
Net cash provided by (used in) financing activities	47,754	(10,728)	(33,174)
Effect of exchange rate changes on cash	(1,016)	(3,537)	(846)
Net increase (decrease) in cash and cash equivalents	54,568	(69,952)	3,615
Cash and cash equivalents at beginning of year	24,298	94,250	90,635
Cash and cash equivalents at end of year	$ 78,866	$ 24,298	$ 94,250
Supplemental cash flow information			
Interest paid	$ 2,613	$ 135	$ 10
Income taxes paid	$ —	$ 30,619	$ 33,015

See accompanying notes to consolidated financial statements

1. Significant Accounting Policies

Description of Business

CARBO Ceramics Inc. (the "Company") was formed in 1987 and is a manufacturer of ceramic proppants and also produces resin-coated ceramic proppants. The Company has production plants in: New Iberia, Louisiana; Eufaula, Alabama; McIntyre, Georgia; Toomsboro, Georgia; Millen, Georgia; and Kopeysk, Russia; and a sand processing facility in Marshfield, Wisconsin. The Company predominantly sells its proppant products through pumping service companies that perform hydraulic fracturing for oil and gas companies. Finished goods inventories are stored at the plant sites and various domestic and international remote distribution facilities. The Company also provides the industry's most widely used hydraulic fracture simulation software FracPro®, as well as hydraulic fracture design and consulting services. In addition, the Company provides a broad range of technologies for spill prevention, containment and countermeasures.

In late 2014 and early 2015, a severe decline in oil and natural gas prices led to a significant decline in oil and natural gas industry drilling activities and capital spending. Beginning in the three month period ended March 31, 2015, the Company implemented a number of initiatives to preserve cash and lower costs, including: reducing workforce across the organization, lowering production output levels in order to align with lower demand, limiting capital expenditures and reducing dividends. As a result of these measures, the Company temporarily idled production and furloughed employees at the Toomsboro and Millen, Georgia manufacturing plants for approximately 90 days and mothballed the manufacturing plant in McIntyre, Georgia. The manufacturing plant at Luoyang, China was shut down and is not expected to reopen. The Company incurred severance costs of $9,497 during 2015 as a result of these actions.

Temporarily idled facilities are expected to remain closed for a short period of time, generally less than one year. Mothballed facilities are expected to remain closed for one year or longer. The accounting treatment is the same for both temporarily idled and mothballed facilities, except that mothballed assets are evaluated for possible impairment while temporarily idled assets are not necessarily assessed for impairment. The Company continues to depreciate both temporarily idled and mothballed assets.

Production resumed at both of the temporarily idled facilities during the second quarter of 2015 at reduced levels. The facility in Toomsboro, Georgia is the Company's largest manufacturing facility consisting of four production lines. During the course of 2015, the Toomsboro plant produced product on one to three of the four production lines. The Company again idled the Millen, Georgia facility during the fourth quarter of 2015. The plant in McIntyre, Georgia resumed production at low output levels in late 2015 but will again be mothballed during the first half of 2016. The Company continues to assess liquidity needs and manage cash flows and, if industry conditions do not improve and/or demand for its products does not otherwise increase, the Company would expect to temporarily idle all or a portion of our currently active facilities in the short term. Given continuing uncertainties with regards to the length of the industry downturn, the Company is evaluating alternative sources of capital, including modifications to its existing credit arrangement, although there can be no assurance that the Company will be able to obtain such financing or modifications on favorable terms, or at all. As a result of the steps the Company has taken to enhance its liquidity, the Company currently believes that cash on hand, cash flow from operations, borrowing capacity under its credit facility and cash flow from other liquidity-generating transactions will enable the Company to meet its working capital, capital expenditure, debt service and other funding requirements for the remainder of the year.

Additionally, the Company suspended completion of two large construction projects until such time that market conditions improve enough to warrant completion. The two suspended projects include the second production line at Millen, Georgia and the second phase of the retrofit of an existing plant with the new

($ in thousands, except per share data)

KRYPTOSPHERE® technology. As of December 31, 2015, the value of the temporarily suspended assets relating to these two projects totaled approximately 85% of the Company's total construction in progress and both projects are over 90% complete.

Principles of Consolidation

The consolidated financial statements include the accounts of CARBO Ceramics Inc. and its operating subsidiaries. All significant intercompany transactions have been eliminated.

Concentration of Credit Risk, Accounts Receivable and Other Receivables

The Company performs periodic credit evaluations of its customers' financial condition and generally does not require collateral. Receivables are generally due within 30 days. The majority of the Company's receivables are from customers in the petroleum pressure pumping industry. The Company establishes an allowance for doubtful accounts based on its assessment of collectability risk and periodically evaluates the balance in the allowance based on a review of trade accounts receivable. Trade accounts receivable are periodically reviewed for collectability based on customers' past credit history and current financial condition, and the allowance is adjusted if necessary. Credit losses historically have been insignificant. The allowance for doubtful accounts at December 31, 2015 and 2014 was $2,688 and $1,842, respectively. Other receivables were $300 and $1,084 as of December 31, 2015 and 2014, respectively, of which related mainly to miscellaneous receivables in the United States.

Cash Equivalents

The Company considers all highly liquid investments with a maturity of three months or less when purchased to be cash equivalents. The carrying amounts reported in the balance sheet for cash equivalents approximate fair value.

Inventories

Inventories are stated at the lower of cost (weighted average) or market. Finished goods inventories include costs of materials, plant labor and overhead incurred in the production of the Company's products and costs to transfer finished goods to distribution centers. The Company evaluates the carrying value of its inventories relative to market value generally on a geographic by-country basis. As needed, more specific reviews within a particular country are made on a product group basis.

Due to increasing competition in the China proppant market, the Company evaluated the carrying values of its inventories in China and concluded that market prices had fallen below carrying costs. Consequently, the Company recognized $4,546 and $5,363 lower of cost or market adjustments in cost of sales in 2015 and 2014, respectively, to adjust finished goods and raw materials carrying values to the lower market prices.

Property, Plant and Equipment

Property, plant and equipment are stated at cost. Repair and maintenance costs are expensed as incurred. Depreciation is computed on the straight-line method for financial reporting purposes using the following estimated useful lives:

Buildings and improvements	15 to 30 years
Machinery and equipment	3 to 30 years
Land-use rights	30 years

The Company holds approximately 4,618 acres of land and leasehold interests containing kaolin reserves near its plants in Georgia and Alabama. The Company also holds approximately 313 acres of land and leasehold interests containing sand reserves near its sand processing facility in Marshfield, Wisconsin. The capitalized costs of land and mineral rights as well as costs incurred to develop such property are amortized using the units-of-production method based on estimated total tons of these reserves.

Impairment of Long-Lived Assets and Intangible Assets

Long-lived assets to be held and used and intangible assets that are subject to amortization are reviewed for impairment whenever events or circumstances indicate their carrying amounts might not be recoverable. Recoverability is assessed by comparing the undiscounted expected future cash flows from the assets with their carrying amount. If the carrying amount exceeds the sum of the undiscounted future cash flows an impairment loss is recorded. The impairment loss is measured by comparing the fair value of the assets with their carrying amounts. Intangible assets that are not subject to amortization are tested for impairment at least annually by comparing their fair value with the carrying amount and recording an impairment loss for any excess of carrying amount over fair value. Fair values are generally determined based on discounted expected future cash flows or appraised values, as appropriate. For additional information on the Company's long-lived assets and intangible assets impairment assessment, please refer to Note 4 – Impairment of Long-Lived Assets.

Manufacturing Production Levels Below Normal Capacity

As a result of the Company substantially reducing manufacturing production levels, including by idling and mothballing certain facilities, the component of the Company's accounting policy for inventory relating to operating at production levels below normal capacity was triggered and resulted in certain production costs being expensed instead of being capitalized into inventory. The Company expenses fixed production overhead amounts in excess of amounts that would have been allocated to each unit of production at normal production levels. For the year ended December 31, 2015, the Company expensed $33,724 in production costs. There were no such costs in the prior year periods.

Capitalized Software

The Company capitalizes certain software costs, after technological feasibility has been established, which are amortized utilizing the straight-line method over the economic lives of the related products, generally not to exceed five years.

Goodwill

Goodwill represents the excess of the cost of companies acquired over the fair value of their net assets at the date of acquisition. Goodwill relating to each of the Company's reporting units is tested for impairment annually, during the fourth quarter, as well as when an event, or change in circumstances, indicates an impairment is more likely than not to have occurred. For additional information on the Company's goodwill impairment assessment, please refer to Note 4 – Impairment of Long-Lived Assets.

Revenue Recognition

Revenue from proppant sales is recognized when title passes to the customer, generally upon delivery. Revenue from consulting and geotechnical services is recognized at the time service is performed. Revenue from the sale of fracture simulation software is recognized when title passes to the customer at time of shipment.

Revenue from the sale of spill prevention services is recognized at the time service is performed. Revenue from the sale of containment goods is recognized at the time goods are delivered.

Shipping and Handling Costs

Shipping and handling costs are classified as cost of sales. Shipping costs consist of transportation costs to deliver products to customers. Handling costs include labor and overhead to maintain finished goods inventory and operate distribution facilities.

Cost of Start-Up Activities

Start-up activities, including organization costs, are expensed as incurred. Start-up costs for 2015 related to the start-up of the first phase of a retrofit of an existing plant to produce KRYPTOSPHERE® products. Start-up costs for 2014 related to the start-up of the new manufacturing facility in Millen, Georgia. There were no start-up costs during 2013.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires management to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. Actual results could differ from those estimates.

Research and Development Costs

Research and development costs are charged to operations when incurred and are included in Selling, General and Administrative expenses. The amounts incurred in 2015, 2014 and 2013 were $7,047, $10,855 and $8,416, respectively.

Foreign Subsidiaries

Financial statements of the Company's foreign subsidiaries are translated using current exchange rates for assets and liabilities; average exchange rates for the period for revenues, expenses, gains and losses; and historical exchange rates for equity accounts. Resulting translation adjustments are included in, and the only component of, Accumulated Other Comprehensive Loss as a separate component of shareholders' equity. For additional information on the Company's Cumulative Translation Adjustment, please refer to Note 18 – Foreign Currencies.

New Accounting Pronouncements

In November 2015, the FASB issued ASU 2015-17, "Income Taxes (Topic 740) – Balance Sheet Classification of Deferred Taxes," ("ASU 2015-17") which requires that deferred tax liabilities and assets be classified as noncurrent in the balance sheet. ASU 2015-17 will be effective for the interim and annual periods beginning after December 15, 2016 with early adoption permitted. The Company is currently evaluating the potential impact, if any, of adopting this new guidance on the consolidated financial statements and related disclosures.

In August 2015, the FASB issued ASU 2015-14, "Revenue from Contracts with Customers (Topic 606) – Deferral of the Effective Date," which revises the effective date of ASU No. 2014-09, "Revenue from Contracts with Customers (Topic 606)," ("ASU 2014-09") to interim and annual periods beginning after December 15, 2017 with early adoption permitted no earlier than interim and annual periods beginning after December 15, 2016. In May 2014, the FASB issued ASU No. 2014-09, which amends current revenue guidance. The core

principle of the guidance is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. The Company is currently evaluating the potential impact, if any, of adopting this new guidance on the consolidated financial statements and related disclosures.

In July 2015, the FASB issued ASU No. 2015-11, *"Inventory (Topic 330),"*("ASU 2015-11") which amends and simplifies the measurement of inventory. The main provisions of the standard require that inventory be measured at the lower of cost and net realizable value. Prior to the issuance of the standard, inventory was measured at the lower of cost or market (where market was defined as replacement cost, with a ceiling of net realizable value and floor of net realizable value less a normal profit margin). ASU 2015-11 will be effective for the interim and annual periods beginning after December 15, 2016 with early adoption permitted. The Company is currently evaluating the potential impact, if any, of adopting this new guidance on the consolidated financial statements and related disclosures.

In April 2015, the FASB issued ASU No. 2015-03, *"Interest – Imputation of Interest (Subtopic 835-30),"*("ASU 2015-03") which amends and simplifies the presentation of debt issuance costs. The main provisions of the standard require that debt issuance costs related to a recognized liability be presented in the balance sheet as a direct deduction from the carrying amount of that debt liability, and amortization of the debt issuance costs must be reported as interest expense. ASU 2015-03 will be effective for the interim and annual periods beginning after December 15, 2015 with early adoption permitted. The new standard must be applied on a retroactive basis, and the Company will be required to comply with the applicable disclosures for a change in accounting principle. In August 2015, the FASB issued ASU No. 2015-15, *"Presentation and Subsequent Measurement of Debt Issuance Costs Associated with Line-of-Credit Arrangements – Amendments to SEC Paragraphs Pursuant to Staff Announcement at June 18, 2015 EITF Meeting (SEC Update)",* which clarified that the SEC staff will not object to an entity presenting the costs of securing line-of-credit arrangements as an asset. The adoption of ASU 2015-03 is not expected to have a material impact on the Company's consolidated financial position, results of operations or cash flows.

In April 2014, the FASB issued ASU No. 2014-08, *"Presentation of Financial Statements (Topic 205) and Property, Plant, and Equipment (Topic 360): Reporting Discontinued Operations and Disclosures of Disposals of Components of an Entity,"*("ASU 2014-08") which amends the reporting requirements of discontinued operations. The main provisions of the guidance require that a disposal of a component of an entity is required to be reported in discontinued operations if the disposal represents a strategic shift that has or will have a major effect on an entity's operations and financial results. The Company adopted this guidance as of January 1, 2015. The adoption did not have a material impact on the Company's financial position, results of operations or cash flows.

($ in thousands, except per share data)

2. Intangible and Other Assets

Following is a summary of intangible assets as of December 31:

	Weighted Average Life	2015 Gross Amount	2015 Accumulated Amortization	2014 Gross Amount	2014 Accumulated Amortization
Intangibles:					
Patents and licenses, software and hardware designs	6 years	$ 4,754	$2,839	$ 4,222	$2,171
Developed technology	10 years	2,782	1,739	2,782	1,461
Customer relationships and non-compete	9 years	2,838	2,042	2,838	1,753
Trademark	Indefinite	—	—	833	—
		$10,374	$6,620	$10,675	$5,385

Amortization expense for 2015, 2014 and 2013 was $1,235, $1,313 and $1,173, respectively. Estimated amortization expense for each of the ensuing years through December 31, 2020 is $915, $638, $565, $279 and $17, respectively. During 2015, the Company recognized an impairment of $833, the full value, relating to the Trademark.

Following is a summary of other assets as of December 31:

	2015	2014
Other assets:		
Bauxite raw materials:		
Inventories	$4,145	$ 9,404
Other assets	1,962	1,041
	$6,107	$10,445

Bauxite raw materials are used in the production of heavyweight ceramic products. As of December 31, 2015 and 2014, the Company has classified as long-term assets those bauxite raw materials inventories that are not expected to be consumed in production during the upcoming twelve month period. For additional information, refer to Note 4 – Impairment of Long-Lived Assets.

3. Bank Borrowings

The Company has a revolving credit agreement with a bank. On July 27, 2015, the Company entered into a fourth amendment to this credit facility that, among other items, (i) reduced the size of the revolving credit facility from $100,000 to $90,000; (ii) secures borrowings with a blanket lien on substantially all of the Company's accounts receivable and inventories; (iii) prohibits the Company from granting security interests in the Company's fixed assets and real property; (iv) sets interest at LIBOR plus 4.00%; (v) sets the maturity date as December 31, 2018; and (vi) waives compliance with the maximum leverage ratio and fixed charge ratio covenants through December 31, 2016. Additionally, the fourth amendment added covenants which (i) requires a minimum assets coverage ratio of 1.25 to 1.0 calculated on a monthly basis and (ii) limits capital expenditures to $65,000 annually through December 31, 2016, subject to maintaining pro forma liquidity of $15,000. Our credit facility also allows for the issuance of up to $9,500 in standby letters of credit, of which $8,875 was issued as of December 31, 2015, primarily as collateral relating to our natural gas commitments.

The terms of the credit agreement provide for certain affirmative and negative covenants and require the Company to maintain certain financial ratios. Commitment fees are payable quarterly at an annual rate between 0.375% and 0.50% of the unused line of credit. Commitment fees for 2015, 2014 and 2013 were $75, $207 and $154, respectively. Interest cost for 2015, 2014 and 2013 was $2,973, $135, and $10, respectively, of which $2,038 was capitalized into the cost of property, plant and equipment in 2015. No interest cost was capitalized in 2014 and 2013.

As of December 31, 2015, the Company's outstanding debt under the credit agreement was $88,000 of which $33,000 was classified as current and $55,000 was classified as long-term. The weighted average interest rate was 4.664% based on LIBOR-based rate borrowings. As of December 31, 2014, the Company's outstanding debt under the credit agreement was $25,000 and the weighted average interest rate was 2.625% based on LIBOR-based rate borrowings.

As of December 31, 2015, the Company was in compliance with its debt covenants. As of January 31, 2016, we were in breach of the asset coverage ratio covenant (which requires a ratio of certain assets to total debt of at least 1.25). Our asset coverage ratio as of January 31, 2016 was 1.21. In order to cure this breach, the Company repaid $16,100 of borrowings under the credit facility in February 2016. As of February 26, 2016, the Company's outstanding debt under the credit agreement was $71,900. Depending on the duration and severity of the industry downturn, there is a risk that the Company may again not be in compliance with certain of the financial covenants under its existing credit agreement. Such a breach would constitute an event of default under the Company's credit agreement if it remained uncured or a modification or waiver is not agreed to with its lender. In the event of non-compliance and if the Company is unable to secure waivers or modifications to the existing credit agreement or alternative sources of capital, it is possible that the Company may not have the liquidity sufficient to meet operating expenses, capital expenditures and other cash needs. Given continuing uncertainties with regards to the length of the industry downturn, the Company is evaluating alternative sources of capital, including modifications to its existing credit agreement, although there can be no assurance that the Company will be able to obtain such financing or modifications on favorable terms, or at all.

4. Impairment of Long-Lived Assets

During 2015 and 2014, the Company recorded losses totaling $43,697 and $15,120, respectively, on impairment of certain long-lived assets as market conditions changed with regard to demand for certain products offered by the Company.

A decline in oil and natural gas prices during the second half of 2014 resulted in a severe decline in market conditions beginning in early 2015. As a result, the Company temporarily idled production and furloughed employees at the Toomsboro and Millen, Georgia manufacturing plants for approximately 90 days and mothballed the manufacturing plant in McIntyre, Georgia. At the time the manufacturing facility in McIntyre, Georgia was mothballed, the Company conducted an interim impairment analysis of the related long-lived assets, with the primary assumption that the plant would resume production after two years and return to production levels at normal capacity within four years. Pursuant to that analysis, the Company determined that the projected gross cash flows attributable to the facility substantially exceed the carrying value of the assets; therefore, the Company concluded that there was no impairment. The Company did not assess the temporarily idled facilities for impairment because such short-term stoppages of production for less than one year would not significantly impact the long-term expected cash flows of the idled facilities.

During the fourth quarter of 2015, industry conditions further deteriorated as oil prices fell below $30 per barrel. As a result of these worsening conditions, the Company evaluated substantially of all its long-lived assets for possible impairment as of December 31, 2015. Key assumptions used in the analysis varied by facility.

However, the overriding assumptions included: 1) the industry downturn would last longer than originally anticipated, taking up to five years to fully recover; 2) production levels would rise over the recovery period eventually returning to production levels within normal capacity; 3) market pricing would be similar to lower 2015 levels, thus conservatively reducing expected gross profit and thus cash flows; 4) the Company's wet process manufacturing plants (Toomsboro and Millen, Georgia and Eufaula Alabama) were evaluated as a group of assets because these facilities manufacture like products; and 5) other facilities were separately evaluated. Pursuant to that analysis, the Company determined that the projected gross cash flows attributable to certain assets did not exceed the carrying value of the assets; therefore, the Company concluded that there was indication of possible impairment. The Company engaged the services of a third party consulting firm to assist with the determination of the fair market value of the related assets and concluded that the assets were impaired. The key assumptions and inputs impacting the fair value analysis were the weighted average cost of capital and perpetuity growth rate as well as certain market data with respect to the property and equipment at each facility. As a result, the Company recorded a $36,177 impairment of long-lived assets, primarily relating to machinery and equipment at the McIntyre, Georgia manufacturing plant and Marshfield, Wisconsin sand processing facility.

Related to the impairment evaluation and resulting impairment loss regarding the McIntyre, Georgia manufacturing plant, the Company also evaluated the carrying value of the long-term portion of bauxite raw materials. Much of the bauxite raw material was intended for use in production at the McIntyre facility. Based upon this evaluation, during 2015, the Company recognized an impairment charge of $6,488 on the long-term portion of the bauxite raw material inventories.

Market conditions inside China deteriorated somewhat earlier relative to conditions in the United States. As a result of deteriorating market conditions in China during the fourth quarter of 2014, the Company recorded a $10,164 impairment of its long-lived assets in China during that period. As a result of the further deterioration of conditions in 2015, the Company ceased production activities at its Luoyang, China manufacturing plant. During the course of 2015, the Company released substantially all of its employees inside China, sold off inventories and proceeded to wind-down the operation. The Company does not intend to resume operations in China. During the fourth quarter of 2015, the Company incurred a loss of $1,033 related to the write-off of abandoned inventories and other assets, and substantially liquidated the China assets and liabilities, as defined by U.S generally accepted accounting principles. As a result, the foreign currency cumulative translation gain of $8,853 was released into the statement of operations and is netted with other impairment losses. The Company anticipates in the near term commencing the process to legally dissolve the entity, which is expected to be completed by the end of 2016.

In addition, during late 2014, the Company made a decision that it will not move forward with construction of a resin coating plant in Marshfield, Wisconsin for which the Company had previously developed engineering plans and procured certain equipment that had long-lead delivery times. As such, the Company recorded a $4,956 impairment of those assets during the year ended December 31, 2014. There were no such impairments during 2013.

The Company assesses goodwill for possible impairment annually or sooner if circumstances indicate possible impairment may have occurred. The Company evaluated goodwill during the fourth quarter, and as a result of the further decline in the oil and natural gas industry during the fourth quarter of 2015, concluded that Falcon projected future cash flows were negatively impacted and thus indicated possible impairment of the Falcon goodwill. The Company engaged a third party to assist in the evaluation and concluded that impairment had occurred. Fair value, which was determined using a discounted cash flows method, fell below the carrying value. Consequently, the Company recorded an $8,664 impairment of Falcon goodwill and an $833 impairment of the indefinite-lived Falcon Trademark intangible asset, both the full value of each of those assets. Evaluation

($ in thousands, except per share data)

of the StrataGen goodwill resulted in no indication of possible impairment. There were no such impairments during 2014 or 2013.

During the years ended December 31, 2015, 2014, and 2013, the Company recognized gains of $230, $41, and $43 on disposal of various assets.

Components of loss (gain) on disposal or impairment of assets are as follows:

	For the years ended December 31, 2015	2014	2013
Domestic long-lived assets impairment	$42,664	$ 4,956	$—
China assets impairment	1,033	10,164	—
Goodwill and intangible assets impairment	9,497	—	—
China CTA gain realization	(8,853)	—	—
Gain on disposal of assets	(230)	(41)	(43)
Total	$44,111	$15,079	$ (43)

5. Leases

The Company leases certain property, plant and equipment under operating leases, primarily consisting of railroad equipment leases. Net minimum future rental payments due under non-cancelable operating leases with remaining terms in excess of one year as of December 31, 2015 are as follows:

2016	$ 17,197
2017	19,445
2018	17,396
2019	14,519
2020	14,102
Thereafter	49,555
Total	$132,214

Leases of railroad equipment generally provide for renewal options at their fair rental value at the time of renewal. In the normal course of business, operating leases for railroad equipment are generally renewed or replaced by other leases. For the years ended December 31, 2016, 2017 and 2018, minimum future rental payments in the table above are presented net of sublease income related to subleases of railroad equipment of $4,872, $301 and $71, respectively. Rent expense for all operating leases was $23,757 in 2015, $24,116 in 2014 and $22,542 in 2013. For the years ended December 31, 2015, 2014 and 2013, rent expense is stated net of sublease income of $5,031, $1,816 and $208, respectively.

($ in thousands, except per share data)

6. Income Taxes

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of the Company's deferred tax assets and liabilities as of December 31 are as follows:

	2015	2014
Deferred tax assets:		
Employee benefits	$ 1,296	$ 1,440
Inventories	7,071	6,966
Natural gas derivatives	4,183	—
Goodwill	3,980	874
Net Operating Loss	39,360	—
Other	1,723	2,942
Foreign losses	1,230	4,300
Foreign tax assets valuation allowance	(1,230)	(4,300)
Total deferred tax assets	57,613	12,222
Deferred tax liabilities:		
Depreciation	71,976	81,628
Total deferred tax liabilities	71,976	81,628
Net deferred tax liabilities	$14,363	$69,406

Significant components of the provision for income taxes for the years ended December 31 are as follows:

	2015	2014	2013
Current:			
Federal	$ 1,509	$11,310	$27,188
State	120	500	2,164
Foreign	966	1,084	842
Total current	2,595	12,894	30,194
Deferred	(56,800)	24,389	10,121
	$(54,205)	$37,283	$40,315

($ in thousands, except per share data)

The reconciliation of income taxes computed at the U.S. statutory tax rate to the Company's income tax expense for the years ended December 31 is as follows:

	2015		2014		2013	
	Amount	Percent	Amount	Percent	Amount	Percent
U.S. statutory rate	$(57,312)	(35.0)%	$32,505	35.0%	$43,820	35.0%
State income taxes, net of federal tax benefit	(3,474)	(2.1)	1,882	2.0	2,097	1.7
Mining depletion	(1,557)	(0.9)	(3,035)	(3.3)	(2,751)	(2.2)
Change in election to deduct foreign taxes paid	1,442	0.9	—	—	—	—
Foreign tax assets valuation allowance	1,230	0.7	4,300	4.6	—	—
Non-recognized benefit on foreign investments	847	0.5	2,980	3.2	—	—
Section 199 Manufacturing Benefit and other	4,619	2.8	(1,349)	(1.4)	(2,851)	(2.3)
	$(54,205)	(33.1)%	$37,283	40.1%	$40,315	32.2%

Provision has been made for deferred U.S. income taxes on all foreign earnings based on the Company's intent to repatriate foreign earnings. During the years ended December 31, 2015 and 2014, the Company did not recognize benefits on foreign investments of $847 and $2,980, respectively, and recorded valuation allowances of $1,230 and $4,300, respectively, due to the uncertainty of the Company being able to realize the foreign tax assets in light of current market conditions in China.

During 2015, the Company incurred a net operating loss in the United States. The tax benefit of this net operating loss totals $39,360 and is included in the deferred income tax asset. The Company intends to file amended 2013 and 2014 Federal income tax returns to claim refunds and thus realize this income tax benefit. Upon filing the amended Federal tax returns, approximately $36,800 of the tax benefit will become a current income tax receivable and is expected to be refunded during the first half of 2016. Amended state income tax returns will be filed later during 2016 to claim refunds associated with carryback of net operating losses.

The Company elected to claim bonus tax depreciation totaling $29,221 and $61,781 on assets placed in service in the United States during 2015 and 2014, respectively. This election increased the net operating loss in 2015 and reduced current taxable income in 2014. The Company did not claim bonus depreciation on assets placed in service during 2013.

The Company had a recorded reserve of $153 associated with uncertain tax positions as of December 31, 2015 and there were no significant changes to the recorded reserve during 2015. If these uncertain tax positions are recognized, substantially all of this amount would impact the effective tax rate. Related accrued interest and penalties are recorded in income tax expense and are not material.

The Company files its tax returns as prescribed by the tax laws of the jurisdictions in which it operates, the most significant of which are U.S. federal and certain state jurisdictions. The 2012 and subsequent tax years are still subject to examination. Various U.S. state jurisdiction tax years remain open to examination as well though the Company believes assessments, if any, would be immaterial to its consolidated financial statements.

7. Shareholders' Equity

Common Stock

Holders of Common Stock are entitled to one vote per share on all matters to be voted on by shareholders and do not have cumulative voting rights. Subject to preferences of any Preferred Stock, the holders of Common Stock are entitled to receive ratably such dividends, if any, as may be declared from time to time by the Board of Directors out of funds legally available for that purpose. In the event of liquidation, dissolution or winding up of the Company, holders of Common Stock are entitled to share ratably in all assets remaining after payment of liabilities, subject to prior distribution rights of any Preferred Stock then outstanding. The Common Stock has no preemptive or conversion rights or other subscription rights. There are no redemption or sinking fund provisions applicable to the Common Stock. All outstanding shares of Common Stock are fully paid and non-assessable.

On January 19, 2016, the Board of Directors suspended the Company's policy of paying quarterly cash dividends.

Preferred Stock

The Company's charter authorizes 5,000 shares of Preferred Stock. The Board of Directors has the authority to issue Preferred Stock in one or more series and to fix the rights, preferences, privileges and restrictions thereof, including dividend rights, conversion rights, voting rights, terms of redemption, redemption prices, liquidation preferences and the number of shares constituting any series or the designation of such series, without further vote or action by the Company's shareholders.

Common Stock Repurchase Program

On January 28, 2015, the Company's Board of Directors authorized the repurchase of up to two million shares of the Company's common stock. Shares are effectively retired at the time of purchase. As of December 31, 2015, the Company had not repurchased any shares under the plan.

8. Natural Gas Derivative Instruments

Natural gas is used to fire the kilns at the Company's domestic manufacturing plants. In an effort to mitigate potential volatility in the cost of natural gas purchases and reduce exposure to short-term spikes in the price of this commodity, from time to time, the Company enters into contracts to purchase a portion of the anticipated monthly natural gas requirements at specified prices. Contracts are geographic by plant location. Historically, the Company has taken delivery of all natural gas quantities under contract, which exempted the Company from accounting for the contracts as derivative instruments. However, due to the severe decline in industry activity in early 2015, the Company significantly reduced production levels and consequently did not take delivery of all of the contracted natural gas quantities. As a result, the Company began to account for relevant contracts as derivative instruments.

Derivative accounting requires the natural gas contracts to be recognized as either assets or liabilities at fair value with an offsetting entry in earnings. The Company uses the income approach in determining the fair value of these derivative instruments. The model used considers the difference, as of each balance sheet date, between the contracted prices and the New York Mercantile Exchange ("NYMEX") forward strip price for each contracted period. The estimated cash flows from these contracts are discounted using a discount rate of 5.5%, which reflects the nature of the contracts as well as the timing and risk of estimated cash flows associated with

($ in thousands, except per share data)

the contracts. The discount rate had an immaterial impact on the fair value of the contracts for the year ended December 31, 2015. The last natural gas contract will expire in December 2018. As a result, during the year ended December 31, 2015, the Company recognized a loss on derivative instruments of $15,040 in cost of sales. The cumulative present value of the losses on these natural gas derivative contracts as of December 31, 2015 are presented as current and long-term liabilities, as applicable, in the Consolidated Balance Sheet.

At December 31, 2015, the Company has contracted for delivery a total of 7,920,000 MMBtu of natural gas at an average price of $4.48 per MMBtu through December 31, 2018. Contracts covering 6,600,000 MMBtu are subject to accounting as derivative instruments. Future decreases in the NYMEX forward strip prices will result in additional derivative losses while future increases in the NYMEX forward strip prices will result in derivative gains. Future gains or losses will approximate the change in NYMEX natural gas prices relative to the total quantity of natural gas under contracts now subject to accounting as derivatives. The historical average NYMEX natural gas contract settlement prices for the years ended December 31, 2015 and 2014 were $2.66 per MMBtu and $4.41 per MMBtu, respectively.

9. Fair Value Measurements

The Company's derivative instruments are measured at fair value on a recurring basis. U.S. GAAP establishes a fair value hierarchy that has three levels based on the reliability of the inputs used to determine the fair value. These levels include: Level 1, defined as inputs such as unadjusted quoted prices in active markets for identical assets or liabilities; Level 2, defined as inputs other than quoted prices in active markets that are either directly or indirectly observable; and Level 3, defined as unobservable inputs for use when little or no market data exists, therefore requiring an entity to develop its own assumptions.

The Company's natural gas derivative instruments are included within the Level 2 fair value hierarchy. For additional information on the derivative instruments, refer to Note 8 – Natural Gas Derivative Instruments. The Company's impaired long-lived assets primarily relating machinery and equipment at its McIntyre, Georgia ceramic proppant manufacturing facility and its Marshfield, Wisconsin sand processing plant are included within the Level 3 fair value hierarchy. The fair value measurements used in those impairment evaluations were based on discounted cash flow estimates using unobservable inputs and certain other market data. For additional information, refer to Note 4 – Impairment of Long-Lived Assets. The following table sets forth by level within the fair value hierarchy the Company's assets and liabilities that were accounted for at fair value:

	Fair value as of December 31, 2015			
	Level 1	Level 2	Level 3	Total
Assets:				
Impaired long-lived assets	$—	$ —	$5,896	$ 5,896
Liabilities:				
Derivative instruments	—	(11,155)	—	(11,155)
Total fair value	$—	$(11,155)	$5,896	$ (5,259)

	Fair value as of December 31, 2014			
	Level 1	Level 2	Level 3	Total
Assets:				
Impaired long-lived assets	$—	$—	$2,138	$2,138
Liabilities:				
Derivative instruments	—	—	—	—
Total fair value	$—	$—	$2,138	$2,138

($ in thousands, except per share data)

At December 31, 2015, the fair value of the Company's bank borrowings approximated the carrying value.

10. Stock Based Compensation

On May 20, 2014, the shareholders approved the 2014 CARBO Ceramics Inc. Omnibus Incentive Plan (the "2014 Omnibus Incentive Plan"). The 2014 Omnibus Incentive Plan replaces the expired 2009 Omnibus Incentive Plan. Under the 2014 Omnibus Incentive Plan, the Company may grant cash-based awards, stock options (both non-qualified and incentive) and other equity-based awards (including stock appreciation rights, phantom stock, restricted stock, restricted stock units, performance shares, deferred share units or share-denominated performance units) to employees and non-employee directors. The amount paid under the 2014 Omnibus Incentive Plan to any single participant in any calendar year with respect to any cash-based award shall not exceed $5,000. Awards may be granted with respect to a number of shares of the Company's Common Stock that in the aggregate does not exceed 750,000 shares prior to the fifth anniversary of its effective date, plus (i) the number of shares that are forfeited, cancelled or returned, and (ii) the number of shares that are withheld from the participants to satisfy an option exercise price or minimum statutory tax withholding obligations. No more than 50,000 shares may be granted to any single participant in any calendar year. Equity-based awards may be subject to performance-based and/or service-based conditions. With respect to stock options and stock appreciation rights granted, the exercise price shall not be less than the market value of the underlying Common Stock on the date of grant. The maximum term of an option is ten years. Restricted stock awards granted generally vest (i.e., transfer and forfeiture restrictions on these shares are lifted) proportionately on each of the first three anniversaries of the grant date, but subject to certain limitations, awards may specify other vesting periods. As of December 31, 2015, 526,563 shares were available for issuance under the 2014 Omnibus Incentive Plan. Although the Company's 2009 Omnibus Incentive Plan has expired, certain unvested shares granted under that plan remain outstanding in accordance with its terms. Additionally, certain units of phantom stock remain outstanding under the 2009 Omnibus Incentive Plan, as described below.

A summary of restricted stock activity and related information for the year ended December 31, 2015 is presented below:

	Shares	Weighted-Average Grant-Date Fair Value Per Share
Nonvested at January 1, 2015	147,489	$99.51
Granted	225,487	$34.62
Vested	(70,089)	$98.59
Forfeited	(36,735)	$51.62
Nonvested at December 31, 2015	266,152	$51.39

As of December 31, 2015, there was $8,057 of total unrecognized compensation cost, net of estimated forfeitures, related to restricted shares granted under the Omnibus Incentive Plans. That cost is expected to be recognized over a weighted-average period of 1.8 years. The weighted-average grant date fair value of restricted stock granted during the years ended December 31, 2015, 2014 and 2013 was $34.62, $111.99 and $82.18, respectively. The total fair value of shares vested during the years ended December 31, 2015, 2014 and 2013 was $6,910, $5,638 and $4,995, respectively.

($ in thousands, except per share data)

As of December 31, 2015, the Company's outstanding market-based cash awards to certain executives of the Company had a total Target Award of $753. The amount of awards that will ultimately vest can range from 0% to 200% based on the Company's Relative Total Shareholder Return calculated over a three year period beginning January 1, 2015 through December 31, 2017.

The Company also made phantom stock awards to key international employees pursuant to the expired 2009 Omnibus Incentive Plan prior to its expiration and pursuant to the 2014 Omnibus Incentive Plan. The units subject to an award vest and cease to be forfeitable in equal annual installments over a three-year period. Participants awarded units of phantom stock are entitled to a lump sum cash payment equal to the fair market value of a share of Common Stock on the vesting date. In no event will Common Stock of the Company be issued with regard to outstanding phantom stock awards. As of December 31, 2015, there were 18,180 units of phantom stock granted under the expired 2009 Omnibus Incentive Plan, of which 12,569 have vested and 3,904 have been forfeited. As of December 31, 2015, there were 5,020 units of phantom stock granted under the 2014 Omnibus Incentive Plan, of which none have vested and 1,110 have been forfeited. As of December 31, 2015, nonvested units of phantom stock under the 2009 Omnibus Incentive Plan and the 2014 Omnibus Incentive Plan have a total value of $97, a portion of which is accrued as a liability within Accrued Payroll and Benefits.

11. (Loss) Earnings Per Share

ASC Topic 260, "*Earnings Per Share*", provides that unvested share-based payment awards that contain non-forfeitable rights to dividends or dividend equivalents (whether paid or unpaid) are participating securities and shall be included in the computation of earnings per share pursuant to the two-class method. The Company's outstanding non-vested restricted stock awards are participating securities. Accordingly, earnings per common share are computed using the two-class method.

The following table sets forth the computation of basic and diluted (loss) earnings per share under the two-class method:

	2015	2014	2013
Numerator for basic and diluted (loss) earnings per share:			
Net (loss) income	$ (109,544)	$ 55,588	$ 84,886
Effect of reallocating undistributed earnings of participating securities	—	(376)	(530)
Net (loss) income available under the two-class method	$ (109,544)	$ 55,212	$ 84,356
Denominator:			
Denominator for basic (loss) earnings per share—weighted-average shares	22,999,318	22,946,395	22,957,013
Effect of dilutive potential common shares	—	—	—
Denominator for diluted (loss) earnings per share—adjusted weighted-average shares	22,999,318	22,946,395	22,957,013
Basic (loss) earnings per share	$ (4.76)	$ 2.41	$ 3.67
Diluted (loss) earnings per share	$ (4.76)	$ 2.41	$ 3.67

($ in thousands, except per share data)

12. Quarterly Operating Results—(Unaudited)

Quarterly results for the years ended December 31, 2015 and 2014 were as follows:

	Three Months Ended			
	March 31	June 30	September 30	December 31
2015				
Revenues	$ 73,747	$ 73,752	$ 75,807	$ 56,768
Gross loss	(25,998)	(10,302)	(4,597)	(15,228)
Net loss	(28,602)	(17,004)	(13,898)	(50,040)
Loss per share:				
Basic	$ (1.24)	$ (0.74)	$ (0.60)	$ (2.17)
Diluted	$ (1.24)	$ (0.74)	$ (0.60)	$ (2.17)
2014				
Revenues	$148,564	$176,561	$155,402	$167,798
Gross profit	44,364	53,648	42,150	41,118
Net income	18,427	23,017	13,744	399
Earnings per share:				
Basic	$ 0.80	$ 1.00	$ 0.60	$ 0.02
Diluted	$ 0.80	$ 1.00	$ 0.60	$ 0.02

Quarterly data may not sum to full year data reported in the Consolidated Financial Statements due to rounding.

13. Sales to Customers

The following schedule presents customers from whom the Company derived 10% or more of total revenues for the years ended December 31:

	Major Customers	
	A	B
2015	10.7%	26.9%
2014	22.4%	29.9%
2013	13.1%	34.7%

14. Geographic Information

Long-lived assets, consisting of net property, plant and equipment and other long-term assets, as of December 31 in the United States and other countries are as follows:

	2015	2014	2013
Long-lived assets:			
United States	$531,518	$561,109	$454,031
International	12,320	18,052	35,372
Total	$543,838	$579,161	$489,403

($ in thousands, except per share data)

Long-lived international assets in 2013 are primarily associated with China and Russia. During 2014, the Company recorded an impairment of long-lived assets in China. Consequently, long-lived international assets in 2014 and 2015 are primarily associated with Russia and Canada.

Revenues outside the United States accounted for 29%, 24% and 21% of the Company's revenues for 2015, 2014 and 2013, respectively. Revenues for the years ended December 31 in the United States, Canada and other countries are as follows:

	2015	2014	2013
Revenues:			
United States	$199,187	$491,004	$529,603
Canada	33,614	73,092	43,329
Other international	46,773	84,229	94,466
Total	$279,574	$648,325	$667,398

15. Benefit Plans

The Company has defined contribution savings and profit sharing plans pursuant to Section 401(k) of the Internal Revenue Code. Benefit costs recognized as expense under these plans consisted of the following for the years ended December 31:

	2015	2014	2013
Contributions:			
Profit sharing	$ —	$2,337	$2,126
Savings	1,547	1,849	1,609
	$1,547	$4,186	$3,735

All contributions to the plans are 100% participant directed. Participants are allowed to invest up to 20% of contributions in the Company's Common Stock.

16. Commitments

In January 2011, the Company entered into an agreement with one of the Company's existing suppliers to purchase from the supplier at least 70 percent of the annual kaolin requirements for the Eufaula plant at specified contract prices. The term of the agreement was three years, with options to extend for an additional six years. In May 2012, the agreement was amended to require the Company to purchase from the supplier at least 50 percent of the annual kaolin requirements for the Eufaula, Alabama plant at specified contract prices for the remainder of 2012 and the ensuing five calendar years. The agreement has options to extend the term for an additional three years. For the years ended December 31, 2015, 2014 and 2013, the Company purchased from the supplier $2,380, $2,263 and $3,788, respectively, of kaolin under the agreement.

In January 2003, the Company entered into a mining agreement with a contractor to provide kaolin for the Company's McIntyre plant at specified contract prices, from lands owned or leased by either the Company or the contractor. The term of the agreement, which commenced on January 1, 2003, and remains in effect until such time as all Company-owned minerals have been depleted, previously required the Company to accept delivery

from the contractor of at least 80 percent of the McIntyre plant's annual kaolin requirements. In 2006, the Company's plant in Toomsboro, Georgia commenced operations and became part of this agreement. In November 2015, the agreement was amended to require the Company to accept delivery from the contractor of 100 percent of the annual kaolin requirements for the plants in McIntyre and Toomsboro. For the years ended December 31, 2015, 2014 and 2013, the Company purchased $3,245, $14,823 and $13,091, respectively, of kaolin under the agreement.

In July 2011, the Company entered into an agreement with a supplier to provide hydro sized sand for the Company's Marshfield, Wisconsin plant at a specified contract price. The term of the agreement was five years commencing on July 30, 2011 and required the Company to purchase a minimum of 40,000 tons and 100,000 tons of hydro sized sand during 2011 and 2012, respectively. Effective January 30, 2012, the agreement was amended and requires the Company to purchase a minimum of 150,000 tons of hydro sized sand annually during 2012 and 2013 and a minimum of 350,000 tons of hydro sized sand in 2014, all at a stated contract price. There were no purchase commitments required during 2015 or through the end of the agreement. For the years ended December 31, 2015, 2014 and 2013, the Company purchased $3,997, $6,922, and $3,546, respectively, of sand under this agreement.

In May 2012, the Company entered into a supply agreement to provide kaolin for the Company's manufacturing plant in Millen, Georgia at specified contract prices, from lands owned or leased by either the Company or the contractor. The term of the agreement, which commenced in July 2014, has an initial term of five years with options to extend for an additional five years and requires the Company to accept delivery from the contractor of at least 50 percent of the Millen plant's annual kaolin requirements. For the years ended December 31, 2015 and 2014, the Company purchased $561 and $1,465, respectively, of kaolin under this agreement.

In October 2014, the Company entered into an agreement with a supplier to mine kaolin and process into a slurry for the Company's manufacturing plant in Millen, Georgia at specified contract prices. The term of the agreement was five years with automatic two (2) year extensions and requires the Company to source at least 50 percent of the Millen plant's annual slurry requirement from the supplier. For the years ended December 31, 2015 and 2014, the Company purchased $1,300 and $577, respectively, of slurry under this agreement.

In November 2014, the Company entered into an agreement with a supplier to provide frac sand for the Company's Marshfield, Wisconsin plant at a specified contract price. The term of the agreement, which commenced on November 13, 2014, remains in effect until the specified sand is depleted and required the Company to purchase a minimum of 300,000 tons of frac sand during 2015 and 400,000 tons of frac sand for each year thereafter. Effective October 12, 2015, the Company entered into a Letter Agreement with the supplier resulting in the adjustment of required annual minimum purchased tons of frac sand to 123,203 and 116,599 for years 2015 and 2016, respectively. The minimum frac sand purchase requirements of 400,000 tons for years 2017 and thereafter until the specified sand is depleted remains unchanged. For the year ended December 31, 2015, the Company purchased $1,751 of frac sand under this agreement.

The Company has entered into a lease agreement dated November 1, 2008 with the Development Authority of Wilkinson County (the "Wilkinson County Development Authority") and a lease agreement dated November 1, 2012 with the Development Authority of Jenkins County (the "Jenkins County Development Authority" and together with the Wilkinson County Development Authority, the "Development Authorities") each in the State of Georgia. Pursuant to the 2008 agreement, the Wilkinson County Development Authority holds the title to the real and personal property of the Company's McIntyre and Toomsboro manufacturing

facilities and leases the facilities to the Company for an annual rental fee of $50 per year through November 1, 2017, and includes a Company renewal option to extend through November 1, 2021. Pursuant to the 2012 agreement, the Jenkins County Development Authority holds title to the real estate and personal property of the Company's Millen, Georgia manufacturing facility, and leases the facility to the Company until the tenth anniversary of completion of the final phase of the facility. At any time prior to the scheduled termination of either lease, the Company has the option to terminate the lease and purchase the property for a nominal fee plus the payment of any rent payable through the balance of the lease term. Furthermore, the Company has security interests in the titles held by the Development Authorities. The Company has also entered into a Memorandum of Understanding (the "MOU") with the Development Authorities and other local agencies, under which the Company receives tax incentives in exchange for its commitment to invest in the county and increase employment. The MOU with the Jenkins County Development Authority also requires the Company to pay an administrative payment of $50 per year during the term of the Millen lease. The Company is required to achieve certain employment levels in order to retain its tax incentives. In the event the Company does not meet the agreed-upon employment targets or the MOU is otherwise terminated, the Company would be subjected to additional property taxes annually. Based on adverse economic conditions beyond the Company's control that negatively impacted employment levels, a notice dated December 1, 2015 sent by the Company to the Development Authority of Jenkins County declared a force majeure, which suspended employment levels defined in the original agreement and preserved tax incentives until further notification of the restart of plant operations. The suspension period defined in the amended agreement cannot extend beyond January 1, 2021. Based on adverse economic conditions beyond the Company's control that negatively impacted employment levels, a notice dated February 1, 2016 sent by the Company to the Development Authority of Wilkinson County declared a force majeure, which suspended employment levels defined in the original agreement and preserved tax incentives until further notification of the restart of plant operations. The properties subject to these lease agreements are included in Property, Plant and Equipment (net book value of $316,458 at December 31, 2015) in the accompanying consolidated financial statements.

17. Employment Agreements

The Company has an employment agreement through December 31, 2016 with its President and Chief Executive Officer. The agreement provides for an annual base salary and incentive bonus. If the President and Chief Executive Officer is terminated early without cause, the Company will be obligated to pay two years base salary and a prorated incentive bonus. Under the agreement, the timing of the payment of severance obligations to the President in the event of the termination of his employment under certain circumstances has been conformed so that a portion of such obligations will be payable in a lump sum, with the remainder of the obligations to be paid over an 18 month period. The agreement also contains a two-year non-competition covenant that would become effective upon termination for any reason. The employment agreement extends automatically for successive one-year periods without prior written notice.

18. Foreign Currencies

As of December 31, 2015, the Company's net investment that is subject to foreign currency fluctuations totaled $16,559, and the Company has recorded a cumulative foreign currency translation loss of $37,702, all related to Russia. This cumulative translation loss is included in and is the only component of accumulated other comprehensive loss within shareholders' equity. As a result of the substantial liquidation of China assets and liabilities in 2015, the Company reclassified an $8,853 cumulative translation adjustment gain, with no tax impact, from accumulated other comprehensive loss to loss (gain) on disposal or impairment of assets within the statement of operations during the year ended December 31, 2015. For additional information, refer to Note 4 –

Impairment of Long-Lived Assets. During 2014 and continuing into 2015, the value of the Russian Ruble significantly declined relative to the U.S. dollar for which the financial impact on the Company's net assets in Russia is included in other comprehensive income and the cumulative foreign currency translation loss noted above. No income tax benefits have been recorded on these losses as a result of the uncertainty about recoverability of the related deferred income tax benefits.

19. Legal Proceedings and Regulatory Matters

The Company is subject to legal proceedings, claims and litigation arising in the ordinary course of business. While the outcome of these matters is currently not determinable, management does not expect that the ultimate costs to resolve these matters will have a material adverse effect on the Company's consolidated financial position, results of operations, or cash flows.

20. Subsequent Events

In January 2016, the Company awarded the following:

234,412 shares of restricted stock to certain employees. The fair value of the stock award on the date of grant totaled $4,048, which will be recognized as expense, net of estimated forfeitures, on a straight-line basis over the three-year vesting period.

6,095 units of phantom shares to certain key international employees. The fair value of the stock award on the date of grant totaled $105.

Market-based cash awards to certain executives of the Company with a total target award of $1,324. The amount of awards that will ultimately vest can range from 0 to 200% based on the Company's Relative Total Shareholder Return calculated over a three year period beginning January 1, 2016 through December 31, 2018.

As of January 31, 2016, we were in breach of the asset coverage ratio covenant (which requires a ratio of certain assets to total debt of at least 1.25). Our asset coverage ratio as of January 31, 2016 was 1.21. In order to cure this breach, the Company repaid $16,100 of borrowings under the credit facility in February 2016.

On February 26, 2016, the Company entered into a sixth amendment to the credit facility that, among other items, removed the minimum tangible net worth covenant effective July 1, 2016 through March 31, 2017, and replaced it with a minimum liquidity covenant calculated monthly beginning as of July 31, 2016 through as of March 31, 2017.

Exhibit Index

3.1	Restated Certificate of Incorporation of CARBO Ceramics Inc. (incorporated by reference to Exhibit 3.1 of the Registrant's Form 10-Q filed for the period ending June 30, 2012)
3.2	Second Amended and Restated By-Laws of CARBO Ceramics Inc. (incorporated by reference to Exhibit 3.1 of the Registrant's Form 8-K Current Report filed March 20, 2009)
4.1	Form of Common Stock Certificate of CARBO Ceramics Inc. (incorporated by reference to Exhibit 4.1 of the Registrant's Form S-1 Registration Statement No. 333-1884 filed July 19, 1996)
4.2	Certificate of Designations of Series A Preferred Stock (incorporated by reference to Exhibit 2 of the Registrant's Form 8-A12B Registration Statement No. 001-15903 filed February 26, 2002)
**10.1	Amended and Restated Mining Agreement dated as of November 30, 2015 between CARBO Ceramics Inc. and Arcilla Mining & Land Co.
10.2	Addendum to Mining Agreement dated as of November 10, 2009 between CARBO Ceramics Inc. and Arcilla Mining & Land Co. (incorporated by reference to Exhibit 10.3 of the Registrant's Form 10-K Annual Report for the year ended December 31, 2010)
*10.3	Second Amended and Restated Employment Agreement dated effective as of January 1, 2012, by and between CARBO Ceramics Inc. and Gary A. Kolstad (incorporated by reference to Exhibit 10.8 of the Registrant's Form 10-K filed for the period ending December 31, 2011)
*10.4	Third Amended and Restated Employment Agreement dated effective as of December 16, 2014, by and between CARBO Ceramics Inc. and Gary A. Kolstad (incorporated by reference to Exhibit 10.4 of the Registrant's Form 10-K filed for the period ending December 31, 2014)
10.5	Proppant Supply Agreement dated as of August 28, 2008 between CARBO Ceramics Inc. and Halliburton Energy Services, Inc. (incorporated by reference to Exhibit 10.3 of the Registrant's Form 10-Q Quarterly Report for the quarter ended September 30, 2008)
10.6	Amendment No. 1 to Proppant Supply Agreement dated as of February 28, 2011 between CARBO Ceramics Inc. and Halliburton Energy Services, Inc. (incorporated by reference to Exhibit 10.1 of the Registrant's Form 10-Q Quarterly Report for the quarter ended March 31, 2011)
10.7	Side Letter to Proppant Supply Agreement dated as of August 26, 2011 between CARBO Ceramics Inc. and Halliburton Energy Services, Inc. (incorporated by reference to Exhibit 10.1 of the Registrant's Form 10-Q Quarterly Report for the quarter ended September 30, 2011)
10.8	Amendment No. 3 to Proppant Supply Agreement dated as of March 24, 2014 by and between CARBO Ceramics Inc. and Halliburton Energy Services, Inc. (incorporated by reference to Exhibit 10.1 of the Registrant's Form 10-Q Quarterly Report for the quarter ended March 31, 2014)
10.9	Amendment No. 4 to Proppant Supply Agreement dated as of September 25, 2015 between CARBO Ceramics Inc. and Halliburton Energy Services, Inc. (incorporated by reference to Exhibit 10.1 of the Registrant's Form 10-Q Quarterly Report for the quarter ended September 30, 2015.
**10.10	Amendment No. 5 to Proppant Supply Agreement dated as of September 25, 2015 between CARBO Ceramics Inc. and Halliburton Energy Services, Inc.
10.11	Lease Agreement dated as of November 1, 2008 between the Development Authority of Wilkinson County and CARBO Ceramics Inc. (incorporated by reference to Exhibit 10.1 of the Registrant's Form 8-K Current Report filed December 30, 2008)
10.12	Option Agreement dated as of November 1, 2008 between the Development Authority of Wilkinson County and CARBO Ceramics Inc. (incorporated by reference to Exhibit 10.2 of the Registrant's Form 8-K Current Report filed December 30, 2008)
10.13	Lease Agreement dated as of November 1, 2012 between the Development Authority of Jenkins County and CARBO Ceramics Inc. (incorporated by reference to Exhibit 10.9 of the Registrant's Form 10-K Annual Report for the year ended December 31, 2012)

*10.14	CARBO Ceramics Inc. Omnibus Incentive Plan (incorporated by reference to Exhibit 10.1 of the Registrant's Form 8-K Current Report filed May 21, 2009)
*10.15	2014 CARBO Ceramics Inc. Omnibus Incentive Plan (incorporated by reference to Appendix A of the Registrant's Definitive Proxy Statement on Schedule 14A filed April 2, 2014)
*10.16	Form of Officer Restricted Stock Award Agreement for Omnibus Incentive Plan (incorporated by reference to Exhibit 10.20 of the Registrant's Form 10-K Annual Report for the year ended December 31, 2010)
*10.17	Form of Amended and Restated Officer Restricted Stock Award Agreement for Omnibus Incentive Plan (incorporated by reference to Exhibit 10.12 of the Registrant's Form 10-K Annual Report for the year ended December 31, 2013)
*10.18	Form of Non-Employee Director Restricted Stock Award Agreement for Omnibus Incentive Plan (incorporated by reference to Exhibit 10.21 of the Registrant's Form 10-K Annual Report for the year ended December 31, 2010)
*10.19	Form of Amended and Restated Non-Employee Director Restricted Stock Award Agreement for Omnibus Incentive Plan (incorporated by reference to Exhibit 10.14 of the Registrant's Form 10-K Annual Report for the year ended December 31, 2013)
10.20	Form of Performance-Based Cash Award Agreement for 2014 CARBO Ceramics Inc. Omnibus Incentive Plan (incorporated by reference to Exhibit 10.1 of the Registrant's Form 10-Q Quarterly Report for the quarter ended March 31, 2015)
*10.21	Description of Annual Non-Employee Director Stock Grants (incorporated by reference to Exhibit 10.1 of the Registrant's Form 10-Q Quarterly Report for the quarter ended June 30, 2010)
*10.22	Description of Modification to Annual Non-Employee Director Stock Grants (incorporated by reference to Exhibit 10.2 of the Registrant's Form 10-Q Quarterly Report for the quarter ended March 31, 2011)
*10.23	Description of Modification to the Annual Non-Employee Director Stock Grants (incorporated by reference to Exhibit 10.2 of the Registrant's Form 10-Q Quarterly Report for the quarter ended March 31, 2012)
*10.24	Description of Modification to Annual Non-Employee Director Stock Grants (incorporated by reference to Exhibit 10.1 of the Registrant's Form 10-Q Quarterly Report for the quarter ended March 31, 2013)
*10.25	Description of Modification to Annual Non-Employee Director Stock Grants (incorporated by reference to Exhibit 10.2 of the Registrant's Form 10-Q Quarterly Report for the quarter ended March 31, 2014)
*10.26	CARBO Ceramics Inc. Omnibus Incentive Plan Annual Incentive Arrangement (incorporated by reference to Exhibit 10.1 of the Registrant's Form 8-K Current Report filed January 21, 2010)
*10.27	CARBO Ceramics Inc. 2014 Omnibus Incentive Plan Annual Incentive Arrangement (incorporated by reference to Exhibit 10.24 of the Registrant's Form 10-K filed for the period ending December 31, 2014)
10.28	Office Lease dated as of January 20, 2009 between I-10 EC Corridor #2 Limited Partnership and CARBO Ceramics Inc. (incorporated by reference to Exhibit 10.27 of the Registrant's Form 10-K Annual Report for the year ended December 31, 2009)
10.29	First Amendment to Lease dated as of January 15, 2010 between I-10 EC Corridor #2 Limited Partnership and CARBO Ceramics Inc. (incorporated by reference to Exhibit 10.28 of the Registrant's Form 10-K Annual Report for the year ended December 31, 2009)
10.30	Second Amendment to Lease dated as of March 1, 2015 between I-10 EC Corridor #2 Limited Partnership and CARBO Ceramics Inc. (incorporated by reference to Exhibit 10.2 of the Registrant's Form 10-Q Quarterly Report for the quarter ended March 31, 2015)
10.31	Credit Agreement, dated as of January 29, 2010, among CARBO Ceramics Inc., as borrower, Wells Fargo Bank, National Association, as administrative agent, issuing lender and swing line lender, and the lenders named therein (incorporated by reference to Exhibit 10.1 of the Registrant's Form 8-K Current Report filed February 4, 2010)

10.32	Amendment No. 1, dated as of March 5, 2012, among CARBO Ceramics Inc., as borrower, Wells Fargo Bank, National Association, as administrative agent, issuing lender and swing line lender, and the lenders named therein (incorporated by reference to Exhibit 10.1 of the Registrant's Form 8-K Current Report filed March 6, 2012)
10.33	Amendment No. 2 to Credit Agreement, dated as of July 25, 2013, among CARBO Ceramics Inc., as borrower, Wells Fargo Bank, National Association, as administrative agent, issuing lender and swing line lender, and the lenders named therein (incorporated by reference to Exhibit 10.1 of the Registrant's Form 10-Q Quarterly Report for the quarter ended June 30, 2013)
10.34	Amendment No. 3 to Credit Agreement, dated as of October 31, 2014, among CARBO Ceramics Inc., as borrower, Wells Fargo Bank, National Association, as administrative agent, issuing lender and swing line lender, and the lenders named therein (incorporated by reference to Exhibit 10.1 of the Registrant's Form 10-Q Quarterly Report for the quarter ended September 30, 2014)
10.35	Amendment No. 4 to Credit Agreement, dated as of July 27, 2015, among CARBO Ceramics Inc., as borrower, Wells Fargo Bank, National Association, as administrative agent, issuing lender and swing line lender, and the lenders named therein (incorporated by reference to Exhibit 10.1 of the Registrant's Form 10-Q Quarterly Report for the quarter ended June 30, 2015)
10.36	Amendment No. 5 to Credit Agreement, dated as of September 14, 2015, among CARBO Ceramics Inc., as borrower, Wells Fargo Bank, National Association, as administrative agent, issuing lender and swing line lender, and the lenders named therein (incorporated by reference to Exhibit 10.2 of the Registrant's Form 10-Q Quarterly Report for the quarter ended September 30, 2015)
10.37	Amendment No. 6 to Credit Agreement, dated as of February 26, 2016, among CARBO Ceramics Inc., as borrower, Wells Fargo Bank, National Association, as administrative agent, issuing lender and swing line lender, and the lenders named therein
10.38	Security Agreement, dated July 27, 2015, among CARBO Ceramics Inc., as borrower and Wells Fargo Bank, National Association, as administrative agent (incorporated by reference to Exhibit 10.3 of the Registrant's Form 10-Q Quarterly Report for the quarter ended June 30, 2015)
*10.39	Form of Change in Control Severance Agreement (incorporated by reference to Exhibit 10.1 of the Registrant's Form 10-Q Quarterly Report for the quarter ended March 31, 2012)
*10.40	Summary of Initial Compensation Terms for John R. Bakht (incorporated by reference to Exhibit 10.1 of the Registrant's Form 10-Q Quarterly Report for the quarter ended June 30, 2015)
21	Subsidiaries
23	Consent of Independent Registered Public Accounting Firm
31.1	Rule 13a-14(a)/15d-14(a) Certification by Gary A. Kolstad
31.2	Rule 13a-14(a)/15d-14(a) Certification by Ernesto Bautista III
32	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
95	Mine Safety Disclosure
101	The following financial information from the Company's Annual Report on Form 10-K for the year ended December 31, 2015, formatted in XBRL: (i) Consolidated Balance Sheets; (ii) Consolidated Statements of Operations; (iii) Consolidated Statements of Comprehensive (Loss) Income; (iv) Consolidated Statements of Shareholders' Equity; (v) Consolidated Statements of Cash Flows; and (vi) Notes to the Consolidated Financial Statements.

* Management contract or compensatory plan or arrangement filed as an exhibit pursuant to Item 15(b) of the requirements for an Annual Report on Form 10-K.

** Pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended, confidential portions of these exhibits have been omitted and filed separately with the Securities and Exchange Commission pursuant to a request for confidential treatment.

Corporate Information

BOARD OF DIRECTORS

William C. Morris
Chairman of the Board, CARBO Ceramics Inc.
Chairman of the Board, Clysar, LLC and
Gulf Coast Supply & Manufacturing, LLC

Sigmund L. Cornelius
President & COO, Freeport LNG, L.P.

Chad Deaton
Retired Chairman & Chief Executive Officer,
Baker Hughes Incorporated

James B. Jennings
Former Senior Advisor,
Brown Brothers Harriman & Co.
Former Chairman, Hunt Oil Company

Gary A. Kolstad
President and Chief Executive Officer,
CARBO Ceramics Inc.

H. E. Lentz, Jr.
Former Managing Director,
Lazard Frères & Co.

Randy L. Limbacher
Former President, Chief Executive Officer
and Director, Samson Resources Corporation

Robert S. Rubin
Former Senior Vice President,
JPMorgan Chase & Co.

CORPORATE OFFICERS

Gary A. Kolstad
President and Chief Executive Officer

Ernesto Bautista, III
Vice President and Chief Financial Officer

Don P. Conkle
Vice President, Marketing and Sales

Roger Riffey
Vice President, Manufacturing

Ellen M. Smith
Vice President, Human Resources

John R. Bakht
Vice President and General Counsel

Chad D. Cannan
Vice President, Research and Development

Stephen Love
Vice President, Logistics and Frac Sand

CORPORATE OFFICES

Energy Center II
575 N. Dairy Ashford
Suite 300
Houston, Texas 77079
281-921-6400

STOCK EXCHANGE LISTING

The New York Stock Exchange
Symbol: CRR

TRANSFER AGENT AND REGISTRAR

Computershare
P.O. Box 30170
College Station, Texas 77842–3170
866-683-2970

INDEPENDENT AUDITORS

Ernst & Young LLP
New Orleans, Louisiana

FORM 10-K

A copy of the Company's Annual Report to the Securities and Exchange Commission (Form 10-K) is available free of charge by contacting:

Ernesto Bautista, III
Chief Financial Officer
CARBO Ceramics Inc.
575 N. Dairy Ashford
Suite 300
Houston, Texas 77079

CERTIFICATIONS

The certifications required by Section 302 of the Sarbanes-Oxley Act of 2002 were filed as exhibits to the Form 10-K. In addition, we have submitted to the New York Stock Exchange the annual certification of our Chief Executive Officer regarding the Company's compliance with the NYSE corporate governance listing standards.

INVESTOR RELATIONS

Additional corporate information is available from our website at www.carboceramics.com or by e-mailing the Company at IR@carboceramics.com.

Mission Statement – Profitable Growth for CARBO and Clients

Production Enhancement:
Our Production Enhancement businesses increase E&P Operators' **Production** and **EUR** by providing industry-leading technology to ***Design, Build, and Optimize the Frac.***

Environmental Services:
Our Environmental Services business protects E&P Operators' assets, minimizes environmental risk, and lowers lease operating expenses (LOE).

Core Values

We achieve our mission within the framework established by our core values.

- **HSE:** We are committed to a Safe and Healthy workplace and protection of the Environment.
- **Ethics:** We conduct our business with the highest ethical standards. We are truthful and honor our commitments and responsibilities.
- **Respect:** We foster a supportive environment by treating each other with mutual respect and understanding.
- **Goals:** We set aggressive goals and strive to exceed them.
- **Results:** We value and celebrate a high level of individual achievement and team performance.
- **Profitable Growth:** We encourage innovation and continuous improvement to ensure future profitable business growth.

Energy Center II
575 N. Dairy Ashford
Suite 300
Houston, TX 77079
Corporate Office: 281-921-6400

www.carboceramics.com