



2018 Annual Report

POWERFUL SERVICES. SUSTAINABLE SOLUTIONS.



**Charah
Solutions**

Service Above All

FELLOW

POWERFUL SERVICES

Charah® Solutions delivers essential services and superior results for the power generation industry.

SUSTAINABLE SOLUTIONS

We share our customers' commitment to environmental responsibility by providing proven sustainable solutions to each customer.



Charah
Solutions

SHAREHOLDERS

The Charah Solutions Board is pleased to have completed a very successful first year with significant forward momentum and solid results.

As your Board Chair, my starting point is clear. We went public in 2018, which reflects our strong growth as a company, and we believe we will continue to deliver future growth by expanding market share, enhancing the environmental and maintenance service offerings we provide and investing in new technologies and processes.

What this does more immediately is increase our access to capital so that we can scale our work profitably. Scaling is significant to us because Charah Solutions specializes in services for which there are large and growing demands. Power generation facilities – whether coal-fired or nuclear – have specialized and recurring environmental and maintenance service needs throughout their lifecycles. Coal-fired power plants, whether operating or retired, have environmental management needs associated with their waste byproducts and any collected coal ash. And recycled coal ash has positive environmental, economic and performance benefits to drive more widespread use. For example, recycled coal ash utilized in concrete will decrease CO₂ and other greenhouse gases that otherwise would be emitted into the atmosphere. In addition, our environmental services benefit local communities by cleaning up decades-old storage sites.

As the power generation sources and regulations in the U.S. continue to evolve and transition, Charah Solutions provides our customers specialized, cost-effective solutions to meet the demands of this changing landscape. Charah Solutions helps our customers accomplish their environmental and operating goals and has the footprint and experienced, highly skilled labor force to grow its leadership position across the power generation industry.



I personally find it a very exciting time to lead this Board as we partner with management to execute on Charah Solutions' growth strategies. My fellow directors and I bring deep power generation and nuclear services industry experience as well as energy regulatory, financial, engineering and construction expertise. With Scott Sewell's more than 10 years of operating experience at Charah Solutions and his intimate knowledge of our expanding customer base, we are confident in his abilities as President and Chief Executive Officer and his appointment to the Board as we continue to grow our market leadership and drive value for you and for all of our shareholders.

Thank you for your investment in Charah Solutions. Working together with Scott and the entire Charah Solutions team, we are committed to creating exceptional value for our shareholders. We have every confidence that great things lie ahead as the entire company drives forward to the next level of performance.

Stephen Tritch

*Chairman of the Board of Directors
Charah Solutions, Inc.*

DEAR INVESTORS

2018 was an exceptional year for Charah Solutions, and I am pleased to share with you the strong results that we achieved during this time and the solid foundation we've laid for future growth.

Today more than ever, Charah Solutions is well positioned to capitalize on the continued and attractive trends we see across the entire spectrum of the power generation industry. There is no question that demand for our maintenance and environmental services is growing, and we are confident that regulatory developments as well as new public infrastructure investment will generate new work for Charah Solutions in the near and long term.

Customers expect us to provide exceptional results that far exceed our competitors, and we are well positioned to deliver. We continue to help utilities keep their operations running smoothly through safe, clean and effective on-site maintenance, ash management and recycling practices that are critical to ensuring these energy sources are operating reliably at peak efficiency. As we introduce our utility customers to the next level of high-performance solutions and technologies, we find ourselves in a unique position where the old limits are being redefined by the new possibilities that we are uniquely suited to achieve.

I am honored to lead a highly capable and seasoned management team as President and CEO, and I look forward to working with the entire Charah Solutions team and our Board of Directors to build upon our strong foundation and accelerate our success as we continue to execute on our robust pipeline of opportunities and capitalize on the growing need for environmental remediation.



Some of the year's most notable achievements include:

- *In June 2018, we launched our initial public offering on the NYSE, gaining access to significant capital markets.*
- *We made notable advances in market share for both our environmental solutions and maintenance and technical services businesses, taking on more remediation projects and nuclear and coal plant maintenance work and increasing byproduct sales.*
- *We successfully integrated our acquisition of SCB International, which demonstrated our ability to execute strategic transactions and deploy innovative technologies to reach underserved markets and drive growth.*
- *We continue to execute against our robust project pipeline, which has billions of dollars in outstanding opportunities, including several, large-scale remediation projects.*
- *On the maintenance and technical services side of our business, we were awarded coal, gas and biomass plant contracts in different geographic regions, providing valuable diversity to our traditional nuclear maintenance business.*

Looking ahead to 2019 and beyond, we will continue to build upon our competitive strengths, delivering new technologies and significant service advantages to our customers through a clear focus on our strategic priorities:

- **Advanced Technologies** – As we expand our innovative technology portfolio, we will continue to bring cost-efficient and effective new capabilities to the industry. Our initial rollout of these new technologies has been very well received by our customers, and we continue to identify additional sites for further expansion:
 - Our proprietary MP618™ Multi-Process fly ash thermal beneficiation technology has proven to be a market-leading, cost-effective and sustainable platform to meet the needs of our utility customers.
 - Our innovative technologies for grinding granulated blast furnace slag (GBFS) can be installed at a lower cost than competing technologies and scaled up or down to meet market demands, allowing us to take advantage of compelling opportunities to serve customers in markets where the supply of fly ash or other supplementary cementitious materials (SCMs) is limited.
- **Remediation Contract Acceleration** – Regulatory and public policy trends are increasingly driving utility customer needs for creative remediation solutions, including those where ash beneficiation plays a

significant role. Our ability and experience to bundle our proprietary MP618 technology with our proven traditional remediation approaches puts us in a uniquely competitive position to develop creative and cost-effective solutions for our utility customers. The current number of plants needing remediation services will only increase in the near future, so the already high demand for our services will increase in the coming years.

- **Byproduct Sales and Marketing Growth** – We will increase our ash and SCM sales by continuing to extend our unique multiple sourcing distribution system, our MultiSource® materials network, which currently has nearly 40 locations nationwide.
- **Industry-Leading Safety Culture** – Commitment to safety is one of our core values and is integral to our culture and results. We strive to meet the highest safety standards and have implemented an industry-leading safety program. We remain a partner of choice for the power generation industry in part due to our quality, safety and compliance records, all of which are key criteria for our utility customers.

We remain intensely focused on building value for our customers by delivering the innovative solutions they have come to expect from Charah Solutions, while driving exceptional value for you, our shareholders.

Thank you for your support and for your investment. We look forward to continuing to share our successes with you for years to come.



Scott Sewell
President
Chief Executive Officer
Charah Solutions, Inc.



As our economy and the power generation industry continue to evolve, new opportunities for our services and solutions are created every day. Regulatory developments at both the federal and state levels are expanding and accelerating our business opportunities. The entire spectrum of power generation facilities will have an increasing need for ash remediation, maintenance services and the technology solutions that Charah Solutions is uniquely equipped to provide. Additionally, the current number of plants needing remediation services will only increase in the near future, meaning our services that are already in high-demand, as well as our new technologies, will become even more important in the coming years.

Our proprietary technologies give us a unique competitive position to develop creative and cost-effective solutions for our customers.

We are uniquely positioned to both enhance ash management for our utility customers and, at the same time, meet the increased beneficial use byproduct demands of the infrastructure boom. With advanced technology that better meets the needs of our utility customers to remediate ash ponds and produce high-quality, marketable ash, we are also well-equipped to provide the beneficial use materials our current customers, such as concrete producers, need to meet growing infrastructure construction demands.

Ready to Meet the Growing Need for Remediation, Ash Management and Maintenance Service

Coal-fired power plants – whether active or inactive – have significant environmental management needs associated with their waste byproducts that will continue to drive our business. Coal ash management is mission-critical to the daily operations of power plants, as, in most cases, they only have on-site storage capacity for three to four days of ash accumulation. Accordingly, for any plants going offline, the industry need for ash management and ash beneficiation services will increase in order to meet current regulations.

With over 500 large-scale power generation facilities in the U.S., our maintenance and technical services will continue to be essential in driving our business forward. These complex facilities have specialized, environmental and maintenance service needs throughout their lifecycles, all of which are provided by Charah Solutions.

Maintenance and service needs are critically important for both nuclear and coal-fired power plants and are becoming increasingly important, given heightened environmental demands and the aging infrastructure of plants. Due to the breadth and nature of these needs, power plant operators typically do not possess these capabilities internally and instead outsource these mission-critical and often regulatory-driven requirements.





Bundling Not Only Services, But Also Competitive Advantages

Charah Solutions is uniquely equipped to bundle our proprietary technologies with more traditional remediation approaches which gives us a unique, competitive position to develop creative and cost-effective solutions for our customers. We have made significant progress in marketing our comprehensive suite of services to a broader mix of customers and power plants. This enables us to provide innovative solutions to our utility customers and the materials concrete producers need to meet heavy demands – positioning Charah Solutions for growth.

In 2019 and beyond, utilities will count on us to deliver proven results for the management and beneficiation of ash byproducts generated from coal combustion, as well as complete power plant maintenance and nuclear outage services.

Demand for Beneficial Use Byproducts is Growing Significantly

The addition of our innovative, new proprietary technologies, specifically MP618 and our patented GBFS grinding technologies, will allow us to gain market share in the beneficial use of coal ash and SCMs among concrete producers and the construction segment.



2019 | Key Growth & Profit Drivers

The largest uses of fly ash are for the replacement of cement in concrete manufacturing and for cementitious uses in other building products. The American Coal Ash Association (ACAA) reports that 14.1 million tons of fly ash were used in concrete in 2017. About 20 percent of the cement used in concrete can be replaced by fly ash.

To meet the increasing demand for usable fly ash in infrastructure projects nationwide, Charah Solutions has invested in proprietary MP618 technology that will facilitate the recovery of ash deposited in landfills, surface impoundments and ash ponds. This allows us to not only meet the ash management needs of our utility customers but also our concrete producer customers as a low-cost, highly-durable ingredient in concrete manufacturing.

According to the ACAA, there is an estimated 1.5 billion tons of legacy coal combustion products (CCPs) stored in surface impoundments or landfills. If these stored CCPs could be processed to become marketable fly ash, it would help alleviate current supply shortages. The emergence of our new, advanced technology to recapture and refine unusable fly ash has the potential to transform the market. MP618 will allow Charah Solutions to unlock legacy reserves for beneficial use and gain market share in the widespread ash pond business where waste ash will now be beneficially used to improve both utility ash program profitability and the environment.

With a cost profile that is lower than competitive technologies, MP618 technology provides a far more attractive cost structure for utilities. The combination of these factors will improve our position in the beneficial use market in 2019 and beyond, enabling nationwide expansion through regional growth via the ability to scale MP618 for use in all markets throughout the country, driving new revenues while reducing CO₂ and greenhouse gases.



With a cost profile that is lower than competitive technologies, MP618 technology provides a far more attractive cost structure for utilities.

TECHNOLOGY

Our new proprietary GBFS grinding technology is another advancement that will change the way slag cement is produced and distributed – allowing us to build regional plants across the country. As a result, the market for this technology and our MultiCem® slag cement will help meet increased demand for SCMs in this new wave of nationwide infrastructure development. Consequently, MultiCem will experience strong growth throughout the U.S. market.

Strong Relationships and a Robust Pipeline

We are confident that our Environmental Solutions segment will expand through the growth of our MultiSource materials network in both domestic and international markets, which has become a true competitive advantage relied on by utilities seeking to move beneficially used ash products into construction markets and also by contractors who must have reliable sources of SCM supply.



The multiple sourcing configuration of our MultiSource materials network is a concept that continues to be well-received within the commercial markets, and we expect its size and influence to continue its strong growth in 2019 and beyond.

Our Maintenance and Technical Services segment will also continue to expand as utilities seek more reliable solutions for sustaining their aging infrastructure, plants and facilities. Our current project pipeline with more than \$3 billion in bids outstanding will continue to expand, adding to our inventory of current, large-scale remediation projects.

Our customer engagement is strong and growing across the industry, and we expect to grow our market share of 2019 utility work through a number of large, complex projects.



CHARAH SOLUTIONS AT A GLANCE

With more than 30 years of experience, Charah Solutions is the only service provider offering the full suite of byproduct management, recycling, environmental remediation and ongoing maintenance services to power generation companies – both coal-fired and nuclear power plants.

We fulfill a critical customer need to ensure operations continue to run smoothly while providing necessary electric power to communities nationwide. Utilities count on us to deliver safe, clean and effective on-site solutions for the management and beneficiation of ash byproducts generated from coal combustion, as well as the quick and efficient completion of power plant maintenance and nuclear outages.

With an industry-leading record of quality, safety and compliance, we are the partner of choice for solving our customers' most complex environmental and maintenance problems and a destination employer for some of the industry's most talented professionals. We challenge ourselves to continuously anticipate our customers' evolving environmental needs and leverage our embedded, on-site presence to identify relevant, attractive service offerings to add to our portfolio.

We provide our services through two main segments:

- *Environmental Solutions*
- *Maintenance and Technical Services*

Our Environmental Solutions segment includes Remediation and Compliance Services as well as Byproduct Sales.

With a highly skilled labor force, we provide sustainable solutions for:

- *Ash/gypsum pond management and closure*
- *Landfill construction*
- *Structural fill projects*
- *Environmental Liability Transfer*
- *SCM sales and marketing, including fly ash, slag cement and others*

Through our Remediation and Compliance Services business, we help our power generation customers design and implement multi-year environmental and sustainability initiatives to meet their goals and respond to regulatory requirements or industry expectations and standards.

Since our founding, we have continuously anticipated our customers' evolving environmental needs, increasing the number of services we provide and maintaining our embedded presence at their power generation facilities.

WHAT



We help our power generation customers profitably recycle recurring volumes of coal ash through our Byproduct Sales offering, as we are able to deliver high-quality, cost-effective raw material substitutes for our ultimate end customers, who have a growing need for these types of cement alternatives. With project locations across the country and proven results for numerous beneficial use applications, we handle more than 20 million tons of coal ash each year.

The addition of innovative products, including our proprietary MP618 Multi-Process fly ash thermal beneficiation technology and GBFS grinding technology for the production of slag cement, gives us competitive advantages to increase our market share with existing customers, while attracting new customers.

Our Maintenance and Technical Services segment includes both Fossil Services and Nuclear Services. Fossil Services is the recurring and mission-critical

management of coal ash for coal-fired power generation facilities, including plant maintenance. Nuclear Services, which we market under Allied Power, includes routine maintenance, planned outage services, facility maintenance and staffing solutions for nuclear power generation facilities.

Since our founding, we have continuously anticipated our customers' evolving environmental needs, increasing the number of services we provide and maintaining our embedded presence at their power generation facilities. Our multi-service platform allows customers to gain efficiencies from working with a single, trusted partner for multiple, required services. Our experience working in a wide variety of utility locations and applications and complying with a diverse set of environmental regulations has allowed us to establish long-term, trusted relationships and credibility with customers and regulatory agencies over the past 30+ years that would be hard to replicate.

WE DO

Commitment to Sustainability

Sustainability is a core value that we live every day at Charah Solutions. We provide an “Ability to Sustain” – born out of the services, solutions, expertise and advanced technologies that we deliver every day through our processes and products to benefit our customers, our people and our planet.

Charah Solutions’ management and employees share a strong commitment to environmental responsibility, and we demonstrate that commitment daily, both in our actions as a company and as members of the communities we serve.

Our core business is structured on beneficially using products and developing innovative solutions to highly complex environmental issues for the betterment of the planet.

Today, as part of what is regarded as one of America’s best resource conservation and recovery examples, we handle or beneficially use more than 20 million tons of ash each year, which dramatically reduces the amount of waste sent to landfills.

Charah Solutions is one of America’s best resource conservation and recovery examples. Our core business is structured on beneficially using products and developing innovative solutions to highly complex environmental issues for the betterment of the planet.

According to ACAA data, the use of CCPs in the U.S. reached 64.4 percent of all CCPs produced in 2017, up significantly from the 56 percent used in 2016. Out of the 111.3 million tons of CCPs produced in 2017, 71.8 million tons were beneficially used, which speaks to the truly remarkable impact these technologies can have.

Today, more than ever, sustainable beneficially used materials from Charah Solutions are contributing to the long-term durability of concrete used in America’s network of roads, bridges and infrastructure, while also helping to preserve our raw materials and natural resources for the use of future generations.



PROCESS.
PRODUCTS.
PROFITS.
PLANET.



BOARD OF DIRECTORS



Stephen Tritch
Chairman of the Board



Scott Sewell
President and CEO



Claire Babineaux-Fontenot
Director



Dorsey "Ron" McCall
Director



Robert Flexon
Director



Brian Ferraioli
Director



Mark Spender
Director



Jack A. Blossman
Director



Mignon Clyburn
Director

**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-K**

(Mark One)

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

For the fiscal year ended December 31, 2018

or

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

For the transition period from _____ to _____

Commission file number 001-38523

CHARAH SOLUTIONS, INC.

(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of
incorporation or organization)

82-4228671
(I.R.S. Employer
Identification No.)

12601 Plantside Drive
Louisville, Kentucky 40299
(Address of principal executive offices) (Zip Code)

(502) 245-1353
(Registrant's telephone number, including area code)

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

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

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

Large accelerated filer
Non-accelerated filer

Accelerated filer
Smaller reporting company
Emerging growth company

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

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

As of June 30, 2018, the aggregate market value of the registrant's voting common stock held by non-affiliates of the registrant was \$89,337,112. The registrant has no non-voting stock.

As of March 13, 2019, the registrant had 29,554,588 shares of common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement to be filed with the Securities and Exchange Commission in connection with the registrant's 2019 Annual Meeting of Stockholders are incorporated by reference in Part III of this Form 10-K to the extent described herein.

CHARAH SOLUTIONS, INC.

ANNUAL REPORT ON FORM 10-K
FOR THE FISCAL YEAR ENDED DECEMBER 31, 2018

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CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

The information in this Annual Report on Form 10-K (this “Annual Report”) includes “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). All statements, other than statements of historical fact included in this Annual Report, regarding our strategy, future operations, financial position, estimated revenues and losses, projected costs, prospects, plans and objectives of management are forward-looking statements. When used in this Annual Report, the words “could,” “believe,” “anticipate,” “intend,” “estimate,” “expect,” “project” and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain such identifying words. These forward-looking statements are based on management’s current belief, based on currently available information, as to the outcome and timing of future events.

Forward-looking statements may include statements about:

- our business strategy;
- our operating cash flows, the availability of capital and our liquidity;
- our future revenue, income and operating performance;
- our ability to sustain and improve our utilization, revenues and margins;
- our ability to maintain acceptable pricing for our services;
- our future capital expenditures;
- our ability to finance equipment, working capital and capital expenditures;
- competition and government regulations;
- our ability to obtain permits and governmental approvals;
- pending legal or environmental matters or liabilities;
- environmental hazards;
- industrial accidents;
- business or asset acquisitions;
- general economic conditions;
- credit markets;
- our ability to successfully develop our research and technology capabilities and to implement technological developments and enhancements;
- uncertainty regarding our future operating results; and
- plans, objectives, expectations and intentions contained in this Annual Report that are not historical.

We caution you that these forward-looking statements are subject to all of the risks and uncertainties, most of which are difficult to predict and many of which are beyond our control. These risks include, but are not limited to, the risks described under “Item 1A. Risk Factors” in this Annual Report. Should one or more of the risks or uncertainties described occur, or should underlying assumptions prove incorrect, our actual results and plans could differ materially from those expressed in any forward-looking statements.

All forward-looking statements, expressed or implied, included in this Annual Report are expressly qualified in their entirety by this cautionary statement. This cautionary statement should also be considered in connection with any subsequent written or oral forward-looking statements that we or persons acting on our behalf may issue. Except as otherwise required by applicable law, we disclaim any duty to update any forward-looking statements, all of which are expressly qualified by the statements in this section, to reflect events or circumstances after the date of this Annual Report.

PART I

Item 1. Business

Our Company

Charah Solutions, Inc. (“Charah Solutions,” the “Company,” “we,” “us,” or “our”) is a leading provider of mission-critical environmental and maintenance services to the power generation industry, enabling our customers to address challenges related to the remediation of ash ponds and landfills at open and closed power plant sites while continuously operating and providing necessary electric power to communities nationwide.

In 2018, we performed work at more than 50 coal-fired and nuclear power generation sites nationwide. We are the only service provider in the United States offering a suite of coal ash management and recycling, environmental remediation, and outage maintenance services. We also design and implement solutions for complex environmental projects (such as coal ash pond closures) and facilitate coal ash recycling through byproduct sales and other beneficial use services. We believe we are a partner-of-choice for the power generation industry due to our industry-leading quality, safety, and compliance record, all of which are key criteria for our customers.

Since our founding, we have continuously anticipated our customers’ evolving environmental needs, increasing the number of services we provide and our embedded presence at their power generation facilities. Compared to service providers with more limited scope, our multi-service platform allows customers to gain efficiencies from sourcing multiple required offerings from a single, trusted partner.

We provide our services through two segments: Environmental Solutions and Maintenance and Technical Services. Our Environmental Solutions segment includes remediation and compliance services, as well as byproduct sales. Remediation and compliance services are associated with our customers’ need for multi-year environmental improvement and sustainability initiatives, whether driven by proactive engagement, by power generation customers, by regulatory requirements, or by consumer expectations and standards. Byproduct sales support both our power generation customers’ desire to profitably recycle recurring and historic volumes of coal combustion residuals (“CCRs”) and our ultimate end customers’ need for high-quality, cost-effective raw material substitutes. Our Maintenance and Technical Services segment includes fossil services and nuclear services. Fossil services are the recurring and mission-critical management of coal ash and the routine maintenance, outage services and staffing solutions for coal-fired power generation facilities. Nuclear services, which we market under the Allied Power brand name, include routine maintenance, outage services, facility maintenance, and staffing solutions for nuclear power generation facilities. Our Maintenance and Technical Services segment offerings are most closely associated with the ongoing operations of power plants, whether in the form of daily environmental management or required maintenance services (typically during planned outages).

As a result of these unique offerings, the embedded nature of our on-site presence, and our track record of successful execution, we have built long-term relationships with leading U.S. utilities and independent power producers, including Dominion Energy, Inc., Duke Energy Corporation, Dynegy Inc., Exelon Corporation, PPL Corporation, and The Southern Company, among others. In some cases, these relationships have spanned over 20 years. The national scale of our operational footprint is also a key competitive differentiator, as many competitors are localized, focusing on a single geographic area (sometimes isolated to a single plant). We operate in more than 20 states, resulting in an overall footprint and density in key markets that we believe is difficult to replicate. We believe our national reach enables us to successfully pursue new business within our existing customer base and to attract new customers while providing consistent quality, safety and compliance standards.

Our services platform is led by a senior executive team with deep industry experience and supported by a highly skilled labor force. The nature of our work requires employees, particularly our nuclear end market-related labor force, to have specialized skills, training, and certifications in order for them to be allowed on-site at our customers’ facilities. Collectively, our focus on human capital management allows us to maintain and develop a labor force of highly qualified, well-trained personnel capable of handling our customers’ needs.

Market Opportunity

The U.S. power industry is composed of critical infrastructure providing essential power generation to communities nationwide. According to the U.S. Energy Information Administration, as of 2016, there were over 500 large-scale facilities in the United States with generation capabilities of at least 250 megawatts, including over 200 coal-fired power plants and over 60 nuclear power plants (representing 99 nuclear reactors). With near-constant demand by consumers and industry on these baseload power providers, continuous operation of these facilities is critical with cost of downtime being both economic and reputational. To maintain continuous operations, these complex facilities have specialized and recurring environmental and maintenance service needs throughout their lifecycles. While pervasive across the entire power generation industry, these service needs are particularly significant for coal-fired and nuclear power plants given increasing environmental demands, the aging nature of the installed base,

and the characteristics of the feedstock required to power such facilities. Due to the breadth and nature of these needs, power plant operators typically do not possess these capabilities internally and instead outsource these mission-critical and often regulatory-driven requirements to a fragmented set of service providers. The continuous need for these specialized services is supported by a number of significant dynamics:

Coal-Fired Power Plants Have Significant and Recurring Environmental Management Needs Associated with Their Waste Byproducts

Coal-fired power plants consistently generate various waste byproducts throughout the power generation process. The primary type of these waste byproducts are CCRs, commonly known as coal ash. CCRs come in various forms (including fly ash, bottom ash, and boiler slag) and are collected throughout the coal burning process. Although not considered a hazardous waste under the Resource Conservation and Recovery Act, as amended (the “RCRA”), there are meaningful regulatory and reputational risks associated with the handling and disposal of coal ash. According to the American Coal Ash Association, more than 111 million tons of coal ash were generated in 2017. Coal ash management is mission-critical to the daily operations of power plants as they generally only have on-site storage capacity for three to four days of CCR waste accumulation. This requires continuous daily monitoring, handling, transportation, and disposal to enable ongoing power plant operation. In 2014, the U.S. Environmental Protection Agency (the “EPA”) estimated that coal-fired utilities spend approximately \$2.9 billion per year on coal ash management. Power plant operators typically engage specialized service providers to conduct this critical recurring activity on-site alongside their personnel operating the plant.

Large Installed Base of Legacy Coal Ash Disposal Ponds That Require Remediation

Collected coal ash is disposed of or beneficially used (recycled) in a range of applications. According to the American Coal Ash Association, as of 2017, approximately 36% of coal ash generated was disposed of. According to the EPA published data in 2012, approximately 80% of the coal ash that was disposed of was disposed of on-site in ash ponds or landfills, and the balance was transported and disposed of off-site at third-party landfills. For many years, coal-fired power plants relied on ash ponds as the primary disposal locations for waste byproducts. The vast majority of these older inactive and older existing ash ponds were designed and constructed without regulatory mandated design standards to prevent impact to the environment, and will require remediation or closure in the future. As of 2016, the American Coal Ash Association estimated that more than 1.5 billion tons of coal ash existed in ash ponds and landfills around the country. The EPA estimated that, in 2012, there were over 1,100 active and inactive on-site ash ponds and landfills requiring remediation or closure. Many of these sites are very large (on average slightly over 120 acres) and will require significant capital from their owners as well as specialized environmental expertise to monitor on an ongoing basis, remediate, relocate the waste or completely close.

Power Plant Operators Are Increasingly Focused on Environmental Stewardship and Regulatory Compliance

Power plant operators face increasing pressure from advocacy groups and their communities to manage the environmental risks associated with their operations and, therefore, the industry is increasingly focused on environmental stewardship. Due to the considerable potential consequences associated with environmental liabilities, spending on environmental liability management has increased over time and is expected to increase in the future.

Additionally, power plants are highly regulated by government environmental authorities, both at the federal and state level, which have recently added compliance requirements. A recent example is the Disposal of Coal Combustion Residuals From Electric Utilities; Final Rule (the “CCR Rule”). Passed in April 2015 by the EPA, the CCR Rule regulates the disposal of coal ash as a solid waste in response to two significant coal ash spills in Kingston, Tennessee and Eden, North Carolina which caused widespread environmental damage. The CCR Rule established new requirements for the closure and remediation of existing ash ponds as well as restrictions on the location of new ash ponds. The CCR Rule will result in significant incremental environmental management costs for many industry participants. As an example, Duke Energy Corporation, PPL Corporation, The Southern Company, and Tennessee Valley Authority have stated they will spend over \$11.7 billion combined on projects resulting from the CCR Rule through 2023. In addition, the power generation industry is proactively implementing environmental best practices across their assets, even when not yet required by law.

Recycling Waste Byproducts Is a Critical Component of the Coal Ash Value Chain

Coal ash can be recycled to produce positive environmental, economic, and performance benefits, such as reduced use of other natural resources, lower greenhouse gas (“GHG”) emissions, and improved strength and durability of materials. According to the American Coal Ash Association, approximately 72 million tons of coal ash, or 64% of generated coal ash, was beneficially used in 2017. As of 2017, the leading beneficial use of coal ash was as a direct and more economic substitute for cement during the production of concrete (approximately 14 million tons of CCRs, annually as of 2017). Also, according to the American Coal Ash Association, in 2018, more than half of all the concrete produced in the United States was made with coal ash, which reduced GHG emissions equivalent to removing 2.5 million cars from the road every year. Coal ash use in various applications has compelling economic benefits as well. As of 2011, the American Road and Transportation Builders Association estimated that coal ash recycling

would save approximately \$105 billion over the next 20 years towards the cost to build roads, runways, and bridges. Additionally, there are technologies currently in development that improve the characteristics of certain types of coal ash, making them more viable for recycling purposes and ultimately increasing the addressable market of recyclable coal ash.

Coal and Nuclear Power Generation Remains Indispensable Energy Sources

According to the U.S. Energy Information Administration, as of September 2017, coal and nuclear power generation combined are expected to remain key baseload energy sources for decades, providing at least 1.6 trillion kilowatt hours of energy production annually through 2040. As of September 2017, coal and nuclear power generation combined accounted for approximately 50% of domestic U.S. energy generation and is expected to contribute a similar percentage annually for at least the next five years. By 2030, they are projected to still contribute approximately 40% of domestic U.S. energy generation. Although other energy generation sources, such as natural gas and renewables, are projected to make moderate gains on a percentage contribution basis, we believe the aggregate demand for coal and nuclear power generation will remain robust. The combined coal and nuclear installed base is also deeply entrenched throughout the U.S. national power grid.

Routine Nuclear Reactor Maintenance Is Non-Discretionary, Specialized, and Predictable

Given the scale, complexity and near-constant operational demands on power plants of all energy types, routine maintenance is critical to the ongoing functionality of each facility. Regardless of energy type, power generation facilities have similar planned outages and recurring maintenance needs. Without these regular maintenance outages, power plants cannot maintain operations and risk more costly, unplanned service interruptions. This dynamic is particularly true for nuclear power generation where baseload power demands are more acute than other energy sources. According to the 2019 Annual Energy Outlook published by the U.S. Energy Information Administration (the “EIA”), nuclear power represented 19% of U.S. electricity generation. Nuclear energy generates the highest capacity factor of all fuel sources. According to the EIA, U.S. nuclear power plants had a capacity factor of 92%. U.S. nuclear power plants also produced 56% of U.S. emission-free fuel in 2017.

Recurring maintenance of nuclear reactors represents an attractive long-term market opportunity given the seasonal predictability of outages and expected longevity of nuclear power generation. Nuclear power plants typically run 24 hours a day, seven days a week over 12- to 24-month cycles with outages typically occurring during fall and spring. Since it is costly to take nuclear power plants offline, plant outages are planned, contracted, and announced far in advance and involve the completion of numerous maintenance services while offline (including inspections, repairs, maintenance, equipment replacement, facility modification, new construction and certifications). We estimate, based on our management’s experience and discussions with customers, our total addressable market for these services (including outsourced maintenance and capital needs) to be in excess of \$5 billion annually. We believe this spend will increase over time as the nuclear reactor fleet continues to age and additional maintenance is required. Additionally, given the stringent safety requirements for the nuclear power industry, specialized licenses and training are required for on-site workforces, representing a considerable barrier to entry for prospective market participants.

The Power Generation Industry Is Increasingly Requiring Larger Scale Environmental and Maintenance Service Providers

The mounting burden of environmental compliance, consistent need to maintain aging facilities, and the focus on continuous and safe plant operations has the power generation industry (coal-fired and nuclear utilities in particular) increasingly seeking larger scale outsourced service providers as partners that can provide a range of services on their behalf. To date, most prospective service providers either have narrow service offerings or a highly localized geographic focus (sometimes limited to a single plant). Few service providers offer a broad set of service capabilities with a track record of quality service, exceptional safety, exacting environmental standards, and a reliable labor force. We believe the market opportunity for a specialized environmental and maintenance platform that can offer such a range of capabilities to the industry is substantial.

Our Solution

Charah Solutions has established a leading platform of mission-critical environmental and maintenance services to the power generation industry. Led by a senior executive team with deep industry experience, we execute with a singular focus on quality, environmental compliance, service reliability, and safety for our customers. Since our founding, we have continuously anticipated our customers’ evolving environmental needs, increasing the number of services we provide and our embedded presence at their power plants. We view ourselves as partners in maintaining the continuous operations of power plants and delivering a range of critical services, including turn-key CCR management and recycling, environmental remediation, and maintenance services. Our differentiated approach has resulted in our managing approximately 11% of the CCR management market (based on tons of CCR generated annually) and servicing 22 of the 98 operating nuclear reactors in the United States, as of December 31, 2018.

Charah Solutions delivers these services via two business segments:

- *Environmental Solutions.* Our Environmental Solutions segment includes remediation and compliance services, as well as byproduct sales offerings. Remediation and compliance services are associated with our customers' need for multi-year environmental improvement and sustainability initiatives, whether driven by proactive engagement by power generation customers, by regulatory requirements, or by consumer expectations and standards. Byproduct sales support both our power generation customers' desire to profitably recycle recurring volumes of CCRs and our ultimate end customers' need for high-quality, cost-effective raw material substitutes.
- *Maintenance and Technical Services .* Our Maintenance and Technical Services segment includes fossil services and nuclear services offerings. Fossil services are the recurring and mission-critical management of coal ash and the routine maintenance, outage services and staffing solutions for coal-fired power generation facilities. Nuclear services, which we market under the Allied Power brand name, include routine maintenance, outage services, facility maintenance, and staffing solutions for nuclear power generation facilities. Our Maintenance and Technical Services segment offerings are most closely associated with the ongoing operations of power plants, whether in the form of daily environmental management or required maintenance services (typically during planned outages).

As a result of these unique offerings and our commitment to strict safety and environmental standards, we have built long-term relationships with leading U.S. utilities and independent power producers. In some cases, these relationships have spanned over 20 years. We are a trusted partner and our team is embedded with the customer on-site to handle its most critical operational needs. Our employees and corresponding service expertise are necessary to our customers' daily operations, maintenance and environmental compliance requirements. Without these mission-critical services, we believe our customers would not be able to provide essential power generation to communities nationwide.

Our Strengths

We believe our platform has become a leader in environmental and maintenance services to the power generation industry. Our strengths that support our leading position include:

Industry-Leading Quality, Safety, and Compliance

We believe we are a partner-of-choice for our customers due to our reputation as a leader in quality, safety, and compliance. Utilities and independent power producers are generally risk-averse and focus on strong environmental and safety considerations as key factors for awarding on-site service provider contracts. We believe our reputation for and dedication to quality, industry-leading safety record and adherence to environmental compliance standards provide a distinct competitive advantage and differentiate us from many of our competitors. Supported by our team of in-house compliance experts, we believe we have developed trusted relationships and credibility with regulatory agencies. We pride ourselves on being a reliable partner, consistently delivering high-quality, efficient and on-time service.

These attributes are key contributors to our leading market share positions. Our leading positions are favorable for potential new business as customers recognize the value of engaging a proven service partner.

Broad Platform of Mission-Critical Environmental and Maintenance Services

Our broad platform of essential environmental and maintenance services has enabled us to become a leading service provider to our power generation customers. In our end markets, we are the only service provider offering a suite of CCR management and recycling, environmental remediation, and outage maintenance services. Compared to service providers with more limited scope, our platform allows our customers to gain efficiencies and to reduce the number of vendors on their sites by sourcing multiple required offerings from a single, trusted partner.

The national scale of our operational footprint is also a key differentiator as many of our competitors are localized, focusing on a single geographic area (sometimes isolated to a single plant). We operate in more than 20 states across the country, resulting in an overall footprint and density in key markets that we believe is difficult to replicate. Our national reach enables us to successfully pursue new business within our existing customer base and to attract new customers while providing consistent quality, safety and compliance standards.

Long-Term Partnerships with Leading Power Generators

Our customers are some of the largest power generation companies in the United States, including Dominion Energy, Inc., Duke Energy Corporation, and Exelon Corporation. Given the essential nature of our services, our on-site personnel become integrated into the daily procedures of each facility, seamlessly working with utility employees to provide uninterrupted operations. This co-location and integration into the daily operations results in direct relationships with key decision makers at every level of our customers' organizations. We believe this embedded partnership deepens customer connectivity and drives longer customer tenure. In some cases, these relationships have spanned over 20 years. As examples, LG&E and KU Energy LLC, which are

currently owned by PPL Corporation, have been customers for more than 20 years, and members of our management team have provided mission-critical services to Exelon Corporation for over 15 years. In the case of Exelon Corporation, these long-term relationships led to Exelon Corporation entrusting us with the outage maintenance needs across their nuclear fleet. We have also demonstrated the ability to grow our service offerings with a single customer. We first provided Duke Energy Corporation with byproduct sales in 2001 at two plants and now provide all of our coal-related services across nine of their plants. We believe these long-term relationships are critical for renewing existing contracts, winning incremental business from existing customers at new sites, and adding new customers. For example, over the last five years, we have achieved an approximately 90% renewal rate for contracts in our fossil services offerings up for renewal.

Innovative Solutions to Our Customers' Environmental Challenges

Our customers regularly face complex, large-scale environmental challenges that require bespoke, technical solutions. We believe we have a proactive and differentiated approach to solving these challenges. Our internal technical and engineering experts have developed deep domain knowledge and capabilities in environmental remediation and beneficial use as a result of our long-term and significant experience in the sector. We believe this credibility, combined with an entrepreneurial mindset, enables us to source market opportunities not readily available to our competitors.

As an example, we demonstrated this innovative approach for a major reclamation project at the Asheville Regional Airport in North Carolina. In the course of remediating an ash pond on-site at a nearby coal power plant, we had the vision to beneficially use that ash as structural fill underneath a newly constructed taxiway at the airport. Our engineers designed a state-of-the-art, highly engineered structural fill system to capture the ash in an environmentally sound way. Asheville Regional Airport saved approximately \$12 million by using coal ash instead of traditional materials and approximately 4 million cubic yards of coal ash from an ash pond was beneficially used. We believe this innovative approach, coupled with new technologies and processes, generates additional value for our customers and stockholders.

Entrepreneurial Management Team Supported by Highly Skilled Labor Force

We are led by an experienced management team with an entrepreneurial mindset and keen focus on safety and customer service. Our senior executive team consists of industry veterans with deep industry experience, helping us provide high-quality operational execution and solidify long-term customer relationships. In addition to a commitment to develop internal talent, we have made key strategic external hires to further deepen our expertise. Our entrepreneurial mindset drives us to constantly search for new ways to maximize relevance to customers and develop innovative solutions.

Our customers have unique certification and training requirements for the service providers they allow on-site. Our ability to hire, develop, and retain a highly skilled labor force with specialized skills, training, and certifications is a key differentiator in the sector. We also have a dedicated team of in-house professionals that focus exclusively on training, certification, and mentorship. As part of our commitment to safety and compliance, each of our on-site employees must complete a unique, rigorous training program. We train our managers to lead from the frontline and to share, involve, and support their teams. Our ability to nimbly staff large-scale projects is also critical. For example, within our nuclear services offering, we have the proven ability to quickly ramp up to in excess of 4,000 employees to align with our customers' outage schedules and to service their planned maintenance needs. Collectively, our human capital management allows us to maintain and develop a labor force of highly qualified, well-trained personnel capable of handling our customers' needs.

Our Growth Strategy

Expand Market Share by Capitalizing on the Significant Environmental and Maintenance Needs of Power Generation Customers

We believe we have a strong growth opportunity in the near term as U.S. coal-fired power generation facilities continue to remediate and close ash ponds and landfills. These projects are triggered as coal power plant operators preemptively manage environmental liabilities, comply with regulatory requirements (at the local, state, and federal level), and work to meet consumer standards for environmental sustainability. We estimate there are over 1,000 remaining ash ponds and landfills, substantially all of which remain to be remediated today, and that customer spending for our core services, including ash pond and landfill remediation, will increase significantly over the next three to five years. We believe spending on coal ash management will increase as well due to our customers' increased focus on environmental stewardship. Additionally, we believe the market for mission-critical maintenance services in the nuclear power generation market is large and growing. We expect this market opportunity to grow over time as the nuclear reactor fleet continues to age and additional maintenance is required.

Continue to Grow On-Site Services Revenue by Expanding Environmental and Maintenance Offerings

We believe our broad platform of environmental and maintenance services is a competitive differentiator and, therefore, continuing to enhance the breadth of services offered to our existing customers is a key growth opportunity. We are a trusted partner and our team is embedded with the customer on-site to handle its most critical operational needs. As a result, we are well-positioned

to identify relevant, attractive service offerings to add to our portfolio. We believe opportunities exist across our platform in waste byproduct management, recycling, environmental remediation, and maintenance services. We believe our customers will continue to find value in a full-service platform and source incremental services from us as an existing, on-site, trusted partner.

Leverage New and Existing Customer Relationships to Maximize Fleet-Wide Opportunities

Given the breadth of our service offering, the trend among our customers to consolidate service providers, and our access to our customers' senior decision makers, we believe we are well-positioned to grow our market share with current customers by providing our existing services to other coal-fired and nuclear power plants within their fleets. We currently provide services at 45 of the 280 large-scale facilities in the United States, which we define as larger than 250 megawatts, representing an approximately 16% penetration rate. We see an opportunity to increase this percentage meaningfully. We will also seek to generate business with new utility customers, aiming ultimately to compete fleet-wide across their power plant footprints as well. We see similar opportunities in international geographies.

Invest in Innovative Technologies, Processes, and Solutions

We believe investments in new technology and processes present opportunities to provide higher-margin offerings while also improving the environment. The embedded nature of our operations gives us a superior understanding of unique customer problems allowing us to deploy innovative solutions. We believe there are opportunities for technological innovation in environmental compliance and stewardship. For example, our acquisition of SCB International Materials, Inc. ("SCB") provided two new technologies for incremental beneficiation of coal ash and other industrial byproducts. We hope these innovative technologies will allow us to optimize our traditional fly ash sales and distribution, enter new markets for our products, and provide cleaner, environmentally friendly solutions to our customers. We intend to continue to invest in additional technologies and other processes that expand our portfolio of solutions and further establish us as an innovator in our industry.

Enhance Our Platform via Disciplined Acquisitions

We believe we can utilize a focused acquisition strategy to add adjacent capabilities and services and to enhance stockholder value. This strategy could enable us to add technical expertise, to expand into new geographies and to gain new customers. We intend to focus on environmental and industrial services, processes, and technologies that support our existing capabilities and customer needs. We believe our national scale and market leadership make us a natural consolidator, particularly in our highly fragmented industry. We have established a disciplined approach to identify acquisition targets with a core focus on growth, cash flow and return on investment.

Our Services

We deliver services and solutions to the power generation industry through two business segments: Environmental Solutions and Maintenance and Technical Services.

Environmental Solutions

Our Environmental Solutions segment includes remediation and compliance services and byproduct sales offerings. We are a trusted partner with our Environmental Solutions customers and are a leader in providing safe and quality environmental services to the power generation industry. We have over 30 years of experience in constructing, operating, and managing structural fill projects for coal-fired utilities and assisting coal-fired utilities in beneficially using waste byproducts.

- *Remediation and Compliance Services* . Our remediation and compliance services offerings primarily include environmental management of landfills for coal-fired power generation facilities and of new and existing ash ponds (particularly remediation mandates). Service offerings cover all aspects of new and existing active pond management including: clean closure, cap-in-place, and design and construction of new ponds. Additional service offerings cover all aspects of the landfill development, construction, and management process. Our remediation and compliance services teams can also provide site evaluation and characterization; preliminary design and cost estimates with life-cycle analysis; hydrogeological assessments; groundwater and containment modeling; permit application and processing for expansions and greenfield sites; design engineering; construction of landfills and cap and cover systems; conversion of impoundments to landfill sites; quality assurance and quality control and documentation; engineered fills (off-site) and other related services.
- *Byproduct Sales* . Our byproduct sales offerings include the recycling of recurring and contracted volumes of coal-fired power generation waste byproducts, such as bottom ash, fly ash, and gypsum byproduct, each of which can be used for various industrial purposes. These waste byproducts can be used in the production of concrete products and other applications. Our dedicated waste byproduct sales and marketing team has a national presence and works with many of the nation's largest power generators to identify opportunities to improve each customer's long-term position in the market for sales of coal-fired waste byproducts while providing concrete producers with the consistent fly ash

sourcing they need. With a variety of different coal sources being utilized across the power generation industry, we evaluate, process, and market the different bottom ash products in order to achieve the highest value for a given market area.

Maintenance and Technical Services

Our Maintenance and Technical Services segment includes fossil services and nuclear services offerings. Maintenance and Technical Services segment offerings are most closely associated with the ongoing operations of power plants, whether in the form of daily environmental management or required maintenance services (typically during planned outages). Our on-site personnel become integrated into the daily procedures of each facility, seamlessly working with utility employees to provide uninterrupted operations. Since we are co-located and integrated into the daily operations at customer sites, our on-site presence results in direct relationships with key decision makers at every level.

- *Fossil Services* . Our fossil services offerings focus on recurring and mission-critical management of coal ash and routine maintenance, outage services and staffing solutions for coal-fired power generation facilities to fulfill an environmental service need of our customers in handling their waste byproducts. Coal ash management is mission-critical to the daily operations of power plants as they generally only have on-site storage capacity for three to four days of CCR waste accumulation. These services include silo management, on-site ash transportation, landfill management, and capture and disposal of ash byproduct from coal power operations. These operations cover management of a wide variety of combustion byproducts including bottom ash, flue gas desulfurization gypsum disposal, Pozatec/fixated scrubber sludge disposal, and fluidized bed combustion fly ash disposal. We coordinate all aspects of the ash management operation, from processing and screening for sales to facilitating an economical disposal.
- *Nuclear Services* . Our nuclear services operations, which we market under the Allied Power brand name, consist of a broad platform of mission-critical professional, technical, and craft services spanning the entire asset life cycle of a nuclear power generator. Our nuclear services offerings include routine maintenance, outage services, facility maintenance, and staffing solutions for nuclear power generation facilities, and we are focused on expanding these offerings to include specialty welding, valve repairs, reactor and turbine support, and specialty engineering, among other services. Additionally, our staffing services and solutions include professional, technical, and craft staffing; managed and turnkey staffing solutions; and staff recruitment and oversight services. A substantial portion of our nuclear services operations are driven by scheduled nuclear maintenance outages, which are typically planned for every 12 to 24 months.

Safety Record

Utilities and independent power producers are focused on strong environmental and safety considerations as key factors for awarding on-site service provider contracts. We believe our strong safety record provides a distinct competitive advantage. We believe we have developed trusted relationships and credibility with regulatory agencies and utilities over the past 30 years due to our long-standing safety record supported by an experienced team of in-house safety and regulatory compliance professionals.

Safety is integral to our culture and our results, and is one of our core values. We believe we operate under the strictest safety standards and are dedicated to maintaining a safe working environment. Our dedicated in-house team of safety professionals develops and trains our employees and subcontractors to not only perform their jobs safely but also to proactively contribute to a safe workplace. This expert team includes highly trained professionals who are accredited Occupational Safety and Health Administration (“OSHA”) trainers, along with full-time transportation specialists in both over-the-road and rail operations.

Furthermore, we endorse the U.S. Nuclear Regulatory Commission’s Safety Culture Policy Statement with respect to our services provided to nuclear utilities, which includes a list of nine traits further defining a positive safety culture: (i) leadership safety values and actions; (ii) problem identification and resolution; (iii) personal accountability; (iv) work processes; (v) continuous learning; (vi) environment for raising concerns; (vii) effective safety communications; (viii) respectful work environment; and (ix) questioning attitude. Given the inherent stringent safety requirements surrounding the nuclear power industry, specialized licenses and training are required for all employees.

We recognize the unique safety issues related to working with our utility industry partners. Our Engineering, Environmental and Quality Group has the expertise and experience to ensure our operations are compliant with local, state, and federal regulations and exceed customary safety standards in our industry.

Sales and Marketing

We believe our dedicated sales team has built successful and long-term relationships with the nation’s largest power generators, and we believe we can leverage the deep relationships and strong operational track record we have built to broaden our on-site presence and deepen client partnerships. We also seek to generate business with new power generation customers,

aiming ultimately to compete enterprise-wide across their power plant footprints as well. Through close contact with utility management and personal relationships developed on a daily basis by our network of embedded field team of regional managers and site managers, we believe we are able to understand our customers' needs to quickly respond to their next project needs and provide creative solutions. Our team of professionals includes professional engineers, experienced site managers, and seasoned estimators who strive to be detailed, accurate, and upfront, allowing us to minimize contract modifications after the work begins. We employ what we refer to as a "zippered" organization approach to customer service and marketing, with relationships up and down the organization. By structuring the organization around our customers' needs through this unique network of regional field operations managers, we ensure that projects are completed on time and on budget and, additionally, are able to quickly recognize opportunities to cross-sell and market our services.

Customers

We have leveraged our long-term, strong relationships to become a preferred provider to many of the largest power generation companies in the United States. In 2018, we performed work at more than 50 plants for more than 20 "blue-chip" utilities, including Ameren Corporation, Big Rivers Electric Corporation, Dominion Energy, Inc., Duke Energy Corporation, Dynegy Inc., Exelon Corporation, Hoosier Energy Rural Electric Cooperative, Inc., NRG Energy, Inc., PPL Corporation, and The Southern Company. The majority of our power generation clients are investment grade. For the years ended December 31, 2017 and 2018, Duke Energy and Exelon each accounted for more than 10% of our revenue. No other major customer accounted for more than 10% of our revenue during these periods. If one of these major customers decided to stop purchasing our services, revenue could decline and our operating results and financial condition could be adversely affected.

Joint Ventures and Contractual Arrangements

A portion of our ash sales are provided through the following two joint ventures.

Ash Venture Joint Venture

In December 2013, we formed Ash Venture LLC, a North Carolina limited liability company ("Ash Venture"), which provides ash management and marketing services to the utility industry. Ash Venture is a joint venture between Charah, LLC, a Kentucky limited liability company ("Charah"), and an unrelated third party. Charah owns 67% and the third party owns 33% of Ash Venture.

Equity Method Investment

In January 2016, we formed a joint venture with an unrelated third party, which markets and sells fly ash to the ready-mix concrete market. We account for the joint venture under the equity method. Charah and the third party each own 50% of the joint venture.

Competition

The power and environmental services industries are highly fragmented with a limited subset of competitors maintaining a national presence, few of which offer the same spectrum of services we provide through our Environmental Solutions and Maintenance and Technical Services segments. Our competitors consist of a combination of large environmental and waste management businesses, as well as hundreds of regional and local companies with limited service areas, typically servicing only one to three sites each. The highly fragmented and regional nature of our industry has produced a limited number of competitors with national scope.

We are the only service provider offering a suite of CCR management and recycling, environmental remediation, and outage maintenance services. While some competitors are significantly engaged in one of the core areas in the power or environmental services value chain, many have limited or no engagement in the majority of our core areas.

Seasonality

Based on historic trends, we expect our operating results to vary seasonally due to demand within our industry as well as weather conditions. For additional information on the effects of seasonality on our operating results, see "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations—Key Factors Affecting Our Business and Financial Statements—Seasonality of Business."

Risk Management and Insurance

The nature of our business exposes us to the risk of liabilities arising out of our operations, including possible damages to the environment. Such potential liabilities could involve, for example, claims for remediation costs, personal injury, property damage, and damage to the environment, including natural resources, claims of employees, customers, or third parties for personal injury or property damage occurring in the course of our operations, or claims alleging negligence or other wrongdoing in the planning or performance of work. We also could be subject to fines and civil and criminal penalties and other sanctions in connection

with alleged violations of regulatory requirements which could be significant. We maintain general liability, contractor's pollution liability policies (as well as additional pollution and remediation policies as needed), vehicle liability, employment practices liability, fiduciary liability, directors' and officers' liability, workers' compensation, and employer's liability coverage, as well as umbrella liability policies to provide excess coverage over the underlying limits contained in these primary policies. We also carry property insurance.

Regulation

Our utility customers involved in coal-based and nuclear-based power generation are subject to various federal, state, and local environmental laws and regulations. Our operations and services for our utility customers are subject to many of the same environmental laws and regulations that govern the host utility site. These environmental laws and regulations, among other things, impose limits on the discharge of pollutants to the air and water and establish requirements for the treatment, storage, and disposal of solid and hazardous materials, remediation of releases of hazardous substances, and reclamation of land. Compliance with the applicable environmental laws and regulations adds to the cost of doing business. Moreover, in order to establish and operate power plants and collect, transport, and manage CCRs, we and our customers have obtained various federal, state, and local environmental permits and must comply with these permits or processes and procedures approved by regulatory authorities. Any failure to comply with these laws or regulations, permits or processes and procedures could result in the issuance of substantial fines and penalties or other sanctions and may cause us (or our customers) to incur environmental or reclamation liabilities or subject us (or our customers) to third-party claims.

The operations of our Maintenance and Technical Services segment offerings are usually performed on-site at the host utility power plant and, as such, the utility holds permits for our operational activities performed on-site. At facilities that we own, we secure the permits.

In spite of safeguards, our operations entail risks of regulatory noncompliance or releases of hazardous substances that could create an environmental liability.

Regulations Affecting Our Maintenance and Technical Services Segment

The fossil services offerings provided in our Maintenance and Technical Services segment are subject to several environmental laws and regulations that have the potential to increase operating costs and to give rise to increased risk of regulatory noncompliance and environmental liabilities.

- *Resource Conservation and Recovery Act.* The RCRA Subtitle C regulates handling, transporting, and disposing of hazardous waste. RCRA Subtitle D regulates non-hazardous wastes and delegates authority to states to develop solid waste programs. In 1991, the EPA issued final regulations under Subtitle D of the RCRA, which set forth minimum federal performance and design criteria for municipal solid waste garbage landfills. In 2015, the EPA published regulations under RCRA Subtitle D for CCRs generated by the electric utility industry. Subtitle D municipal solid waste regulations are implemented by the states, although states can impose requirements that are more stringent than the Subtitle D standards. The CCR Rule regulates the disposal of CCRs under Subtitle D of the RCRA as non-hazardous wastes, as discussed below.
- *EPA CCRs Rule.* As a CCR, coal ash had previously been largely exempted from regulation under the RCRA by the "Bevill amendment" and, therefore, was subject to state solid waste regulations. However, after a major spill at a Tennessee Valley Authority site in Tennessee in 2008, the EPA began a rulemaking process to regulate CCRs. That process ended with the publication in April 2015 of the CCR Rule to regulate the disposal of CCRs, including fly ash, bottom ash, and flue gas desulfurization products generated at coal-fired power plants. The CCR Rule, among other things, regulates CCRs as non-hazardous waste and imposes new standards for location, groundwater monitoring, and dam stability on surface impoundments and requires long-term monitoring of existing and new surface impoundments and landfill facilities. The CCR Rule also preserves an exemption for CCRs when used for beneficial purposes. In March 2018, the EPA issued proposed Phase-1 1-Part rules to reconsider certain sections of the 2015 CCR rules. In July 2018, the EPA issued a final Phase-1 1-Part rule to modify the CCR rules to establish the program to grant states authorization with approved CCR permit programs under the Water Infrastructure Improvements for the Nation Act (the "WIIN Act"). The Phase-1 1-Part rule also allows CCRs to be used during certain closure situations and addresses certain matters remanded to the EPA by the D.C. Circuit Court of Appeals in June 2016. The EPA intends to reconsider and propose additional regulations to address litigation decisions by Courts related to CCRs.
- *WIIN Act.* In December 2016, Congress passed the WIIN Act, which, among other things, establishes state primacy for enforcement of the CCR Rule. The WIIN Act directed the EPA to provide guidance to states on issuing state regulations to manage the CCR program. The EPA published the Coal Combustion Residuals State Permit Program Guidance Document (Interim Final) in August 2017. States may now submit their regulatory programs for CCRs

and receive EPA approval that they are equivalent to or more stringent than federal guidance. As noted above, the rule finalized by the EPA in July 2018 further implements the objectives of the WIIN Act by allowing states or the EPA to incorporate flexibilities into their coal ash permit programs.

The CCR Rule may require adjustments to our operations, and the complexity and cost of managing and disposing of CCRs could increase. We manage mine reclamation projects that may be subject to the CCR Rule. The CCR Rule establishes national minimum criteria for landfills and impoundments containing CCRs, and includes restrictions on their location, design, and operation, as well as groundwater monitoring, recordkeeping, reporting, and closure requirements. The rule also requires closure, shutdown, or retrofitting of certain non-complying units or impoundments. Citizens and states now have the right to bring lawsuits to enforce the new CCR Rule against owners and operators. Since the CCR Rule was finalized, citizens and environmental organizations have brought several suits against the utility owners and operators of CCR impoundments.

The CCR Rule affirms that beneficial uses of CCRs remain exempt from federal waste regulation under the RCRA's "Bevill exclusion." Beneficial use is defined by the regulation to cover uses where CCRs provide a functional benefit, substitute for the use of a virgin material, meet the product specifications, follow established specifications for use, and are environmentally equivalent to the material that they substitute for or are below all thresholds for safety and environmental impact. In February 2014, the EPA released a report determining that the use of fly ash in concrete constitutes a beneficial use, and the CCR Rule specifically notes that the incorporation of fly ash in concrete, as a replacement for Portland cement, is one of "the most widely recognized beneficial applications" of CCRs. The CCR Rule indicates that the use of CCRs in applications such as road base generally would qualify as beneficial use, so long as relevant regulations and guidelines are followed.

Both industry and environmental organizations have challenged the CCR Rule. The D.C. Circuit Court of Appeals has ruled on several cases involving CCRs. The D.C. Circuit Court remanded certain provisions of the CCR Rule back to the EPA to address through modification of the rules. The D.C. Circuit decision has indicated that CCR disposal or storage units that have only clay liners are not protective and the EPA must now address the impacts to the CCR rules.

In September 2016, the U.S. Commission on Civil Rights (the "Civil Rights Commission") issued a report which determined that CCR disposal facilities can negatively impact environmental justice communities. While the Civil Rights Commission cannot require changes to EPA regulations, environmental organizations may seek to use the Civil Rights Commission's report to spur the EPA to make regulatory changes.

Regulations Affecting the Coal Industry

The fossil services offerings of our Maintenance and Technical Services segment are dependent upon managing CCRs produced by our customers, typically coal-fired power plants. Coal-fired power plants and the coal industry are generally highly regulated under federal and state law. Regulation affecting this industry is ever-evolving, including the following:

- *Clean Air Act* . The federal Clean Air Act of 1970 and subsequent amendments, particularly the Clean Air Act Amendments of 1990, and corresponding state laws and EPA regulations (discussed below), regulate the emission of air pollutants such as SO_x, NO_x, particulate matter ("PM"), and ozone. The EPA finalized more stringent ambient air quality standards for fine PM in January 2013 and for ozone in October 2015, and issued final policy assessment for NO_x in April 2017 and draft policy assessment for SO_x in August 2017. The EPA concluded that the current primary NO_x standard is adequate, but has not taken additional steps with respect to the SO_x standards. To meet emissions limits, utilities have been required to make changes, such as changing fuel sources, installing expensive pollution control equipment, and, in some cases, shutting down plants.
- *Cross-State Air Pollution Rule* . In July 2011, the EPA adopted the Cross-State Air Pollution Rule (the "CSAPR"), a cap-and-trade type program requiring utilities to make substantial reductions in SO₂ and NO_x and emissions that contribute to ozone and in fine PM emissions in order to reduce interstate transport of such pollution. The CSAPR was challenged and vacated by the D.C. Circuit Court of Appeals in August 2012, but that decision was reversed by the U.S. Supreme Court in April 2014. The D.C. Circuit has since lifted its stay on the CSAPR and ruled in favor of the EPA on the remaining significant issues. In January 2016, the EPA filed a brief with the D.C. Circuit addressing the remaining legal challenges left undecided by the U.S. Supreme Court's 2014 decision. Conforming with a court-ordered schedule, the EPA implemented the first phase of the CSAPR in 2015 and 2016 and the second phase in 2017. In November 2014 and January 2015, the EPA issued notices of data availability outlining emission allowance allocations for existing generating units that began operating before and after 2010. In September 2016, the EPA finalized a rule updating the CSAPR in order to maintain 2008 ozone emission limitations in downwind states by addressing summertime (May-September) transport of ozone pollution. The update, which commenced in May 2017, sets stricter NO_x ozone season emission budgets in 22 states and could affect up to 886 coal-fired facilities. These emission control requirements, for both NO_x and SO₂, can impact the quantity and quality of CCRs produced at a power plant, add to the costs of operating a power plant, and make coal a less attractive fuel alternative in the planning and building of utility power plants.

- *Comprehensive Environmental Response, Compensation and Liability Act* . Certain environmental laws, including the Comprehensive Environmental Response, Compensation and Liability Act (the “CERCLA”) and similar state laws, impose strict, joint and several liability on responsible parties for investigation and remediation of regulated materials at contaminated sites, including our sites, customer sites, and sites to which we sent wastes, including CCRs. CCRs may contain materials such as metals that are regulated materials under these laws. Management of CCRs can give rise to liability under the CERCLA and similar laws.
- *Mercury and Air Toxics Standards for Power Plants* . In February 2012, under its Mercury and Air Toxics Standards for Power Plants rule, the EPA promulgated final limits on mercury and other toxic chemicals from new and modified power plants. In June 2015, the U.S. Supreme Court ordered the EPA to undertake cost-benefit analysis when promulgating mercury and air toxics standards. In April 2016, the EPA published a supplemental finding pursuant to the U.S. Supreme Court’s directive, which is currently being challenged in the D.C. Circuit. In April 2017, the D.C. Circuit granted the EPA’s motion to stay the litigation while the EPA reconsiders its finding that the rule is “appropriate and necessary” as required under the Clean Air Act. If upheld, requirements to control mercury emissions could result in implementation of additional technologies at power plants that could negatively affect fly ash quality.
- *GHG Emissions* . Some states and regions have adopted legislation and regulatory programs to reduce GHG emissions, either directly or through mechanisms such as renewable portfolio standards for electric utilities. These programs require electric utilities to increase their use of renewable energy such as solar and wind power. Federal GHG legislation appears unlikely in the near term. The EPA has initiated review of rules finalized in August 2015 for GHG emissions from new and existing fossil fuel-fired electric power plants and for carbon emissions from existing sources in the power sector (the latter being known as the “Clean Power Plan”). The Clean Power Plan establishes state-specific, rate-based reduction goals for carbon emissions and calls on the power sector to reduce carbon emissions to 32% below 2005 levels by 2030. The EPA proposed rules titled the Affordable Clean Energy Rule (the “ACE Rule”) and sought comments on a framework to replace the Clean Power Plan. Under the ACE Rule, the EPA is proposing to allow efficiency improvements at existing coal plants and proposes to regulate emissions from new power plants at different levels and has taken an inside the fence approach to emissions limitations. If the proposed replacement ACE Rule is finalized by the EPA, various states’ utility companies may be encouraged to substitute electricity generation from low-emitting coal and natural gas plants and zero-emitting renewable sources for generation from higher-emitting coal plants. Such changes in the energy market could impact the quantity of CCRs produced by our suppliers, add to the cost of operating power plants, and make coal-fired power plants a less attractive option in the planning and commissioning of new energy generating facilities.
- *EPA Water Quality Regulations* . The EPA is addressing water quality impacts from coal-fired power plants and coal mining operations. In September 2015, the EPA finalized new effluent limitations under the Clean Water Act for steam electric power generating facilities. The final rule requires operators of coal plants with a generating capacity over 50 megawatts to store fly ash and bottom ash in dry landfills, rather than containment ponds. Approximately 12% of coal plants will be affected, and some marginal operations may shut down rather than face the expense of complying with the new effluent discharge requirements. Multiple challenges to the effluent limitation guidelines were consolidated and are pending before the Court of Appeals for the Fifth Circuit. In September 2017, the EPA issued a rulemaking postponing certain compliance dates under the effluent limitation guidelines. In addition, the EPA finalized new regulations to minimize adverse environmental impacts to aquatic life from cooling water intake structures at existing electric generating plants, which were challenged by environmental and industry groups at the Fifth and Second Circuit Courts of Appeals, which remain pending. More stringent regulation of coal-fired power plants and coal mining operations could increase the cost for utilities and, thus, indirectly impact the availability and cost of fly ash for our CCR activities.

Increasingly strict requirements, such as those described above, generally will increase the cost of doing business and may make coal burning less attractive for utilities. Faced with the prospect of more stringent regulations, litigation by environmental groups, and the relatively low cost of natural gas, an increasing number of electric utilities are reducing their portfolio of coal-fired power plants. For example, in recent years, multiple companies have announced plans to close coal-fired power plant units or plants, or dropped plans to open new plants, citing the cost of compliance with pending or new environmental regulations and the relatively low cost of natural gas. The potential negative impact on job prospects in the utility and mining industries has prompted considerable concern in Congress, leading to calls to restrict the EPA’s regulatory authority and prompting the EPA to reconsider the same. The outcome of these developments cannot be predicted. To date, our business has not been significantly impacted by these developments; however, if the rate of coal-fired power plant closures increases, we may be adversely affected in the future. Nevertheless, we believe that reliance on coal for a substantial amount of power generation in the United States is likely to continue for the foreseeable future.

Regulations Affecting the Nuclear Power Industry

Our nuclear power generation customers are subject to regulations from a number of entities, including the applicable U.S. regulatory bodies, such as the U.S. Nuclear Regulatory Commission, and non-U.S. regulatory bodies, such as the International Atomic Energy Agency (the “IAEA”). Regulations include, among other things: (i) systems for nuclear material safeguards implemented by the IAEA, (ii) global-scale agreements on nuclear safety, such as the Convention on Nuclear Safety and the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, and (iii) additional general regulations for nuclear facilities under the Atomic Energy Act and Nuclear Waste Policy Act, including strict licensing requirements, inspection procedures, and regulations governing the maintenance, shutdown, and dismantling of nuclear facilities and the management and disposal of radioactive wastes. In addition, the Price-Anderson Act (the “PAA”) regulates, among other things, radioactive materials and the nuclear energy industry, including liability and compensation in the event of nuclear-related incidents. The PAA provides certain protections and indemnification to nuclear energy plant operators, which also apply to us as part of our services to the U.S. nuclear energy industry.

Motor Carrier Operations

Through the services we provide, we operate as a motor carrier and, therefore, are subject to regulation by the U.S. Department of Transportation (the “DOT”) and various state agencies. These regulatory authorities exercise broad powers governing activities, such as the authorization to engage in motor carrier operations; regulatory safety; hazardous materials labeling, placarding, and marking; financial reporting; and certain mergers, consolidations, and acquisitions. There are additional regulations specifically relating to the trucking industry, including testing and specification of equipment and product handling requirements. The trucking industry is subject to possible regulatory and legislative changes that may affect the economics of the industry by requiring changes in operating practices or by changing the demand for common or contract carrier services or the cost of providing truckload services. Some of these possible changes include increasingly stringent environmental regulations, changes in the hours of service regulations which govern the amount of time a driver may drive in any specific period, and requiring onboard black box recorder devices or limits on vehicle weight and size.

Interstate motor carrier operations are subject to safety requirements prescribed by the DOT. Intrastate motor carrier operations are subject to safety requirements that often mirror federal regulations. Such matters as weight and dimension of equipment are also subject to federal and state regulations. DOT regulations also mandate drug testing of drivers. From time to time, various legislative proposals are introduced, including proposals to increase federal, state, or local taxes, including taxes on motor fuels, which may increase our costs or adversely impact the recruitment of drivers. We cannot predict whether, or in what form, any increase in such taxes applicable to us will be enacted.

Employees

As of December 31, 2018, we had approximately 1,895 employees. Approximately 578 of our employees were covered by collective bargaining agreements, 92% of which are employed in the nuclear services operations of our Maintenance and Technical Services segment. We believe we have good relations with our employees.

Exchange Act Reports

We make available free of charge through our website, www.charah.com, our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, proxy statement and all amendments to these reports. These reports are available on our website as soon as reasonably practicable after such materials are electronically filed with, or furnished to, the Securities and Exchange Commission (the “SEC”). The information provided on our website is not part of this Annual Report and is not incorporated herein by reference.

The SEC also maintains a website, www.sec.gov, which contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC.

Item 1A. Risk Factors

Risks Related to Our Business

A decline in the production of CCRs by our coal-fired utility industry customers due to environmental regulations or otherwise could negatively impact our profitability and hinder our growth.

Many of our services are dependent upon the production of CCRs by our coal-fired utility industry customers. The coal-fired utility industry is facing a number of new and pending initiatives by regulatory authorities seeking to address air and water pollution, GHG emissions, and management and disposal of CCRs. In recent years, federal and state environmental regulation has imposed more stringent requirements regarding emission of air pollutants and other toxic chemicals, reduction of GHG emissions, and water quality impacts from coal operations. Adoption of more stringent regulations governing coal combustion, water discharges, or air emissions may decrease the amount of CCRs produced by our customers and, as a result, the demand for our services. Faced with the prospect of more stringent regulations, litigation by environmental groups, and the relatively low cost of natural gas, an increasing number of electric utilities are reducing their portfolio of coal-fired power plants. This reduction could increase if the ACE Rule, which could cause states to substitute electricity generation from higher-emitting coal plants to low-emitting coal and natural gas plants and zero-emitting renewable sources, is finalized by the EPA. See “Item 1. Business—Regulation.”

Increasingly strict requirements generally will increase the cost of doing business and may make coal burning less attractive for utilities. In recent years, multiple companies have announced plans to close coal-fired power plant units or plants, or dropped plans to open new plants, citing the cost of compliance with pending or new environmental regulations and the relatively low cost of natural gas. A reduction in the use of coal as fuel would cause a decline in the production and availability of CCRs, which would adversely affect our fossil services and byproduct sales offerings and result in reduced revenues. The outcome of these developments cannot be predicted but could have a material adverse effect on our business, results of operation, financial condition, and cash flows.

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

Our ability to retain existing customers and attract new business is dependent on many factors, including our ability to demonstrate that we can reliably and safely operate our business in a manner that is consistent with our customers’ standards of service as well as applicable laws, rules, and permits, which legal requirements are subject to change. Existing and potential customers consider the safety and service record of their third-party service providers to be of high importance in their decision to engage such providers. The power generation industry generally emphasizes safety and service over cost due to economic and reputational risk associated with operations at their facilities. If one or more accidents were to occur while we are providing services to our customers, or if we were unable to maintain the level of safety and service our customers require, the affected customer may seek to terminate or cancel our services and may be less likely to continue to use our services, which could cause us to lose substantial revenues. Furthermore, our ability to attract new customers may be impaired if they view our safety record or service as unacceptable. In addition, it is possible that we will experience multiple or particularly severe accidents in the future, causing our safety record to deteriorate. This may be more likely as we continue to grow, if we experience high employee turnover or a labor shortage, or hire inexperienced personnel to support our staffing needs.

A substantial portion of our Maintenance and Technical Services segment consists of services to nuclear power plants. To the extent there is a decrease in these plants, either due to reduced investment, increased regulation, or otherwise, demand for our nuclear services offerings could decrease.

U.S. nuclear capacity and electricity generation are expected to decline due to continuing low natural gas prices and the rapid expansion of low-cost renewable energy and new technologies in the United States, displacing more traditional sources of power, including nuclear power. Public support for nuclear power has also softened because of concerns about safety and environmental issues and new construction costs.

Very few new nuclear reactors are under construction in the United States, and several nuclear reactors are undergoing decommissioning. In addition, changes in state and federal government subsidies and increased regulation could also negatively impact the nuclear power industry. For instance, the U.S. Nuclear Regulatory Commission has broad authority under federal law to impose safety-related and other licensing requirements for the operation of nuclear generation facilities, and events at nuclear facilities or other events impacting the industry generally could lead to additional requirements and regulations on all nuclear generation facilities and could negatively impact new construction of or continued generation from nuclear power facilities. A lower number of nuclear power facilities in operation and a decrease in related maintenance and construction budgets would have a material adverse effect on our business, results of operation, financial condition and cash flows.

Loss of a large customer may adversely affect our revenue and operating results.

For fiscal 2018 and 2017, each of Duke Energy Corporation and Exelon Corporation accounted for greater than 10% of our revenues. It is likely that we will continue to derive a significant portion of our revenue from a relatively small number of customers in the future. If a major customer fails to pay us, operating income would be impacted and our operating results and financial condition could be materially adversely affected. Additionally, if we were to lose any material customer, such loss would have a material adverse effect on our business.

We are party to an agreement with a customer pursuant to which we are entitled to be paid certain material prorated costs in the event of early termination or deemed termination of the agreement.

Our customer advised us in 2018 that it intends to proceed with deemed termination of the agreement, which we anticipate occurring during 2019. Until we receive payment of the prorated costs from the customer, we have a risk of receipt as well as incremental costs associated with the site contemplated by the agreement. Failure of the customer to pay us such prorated costs, timely or at all, could adversely affect our cash flows and ability to run our business in the ordinary course.

We and our customers operate in industries subject to significant environmental regulation, and compliance with changes in, or liabilities under, such regulations could add significantly to the costs of conducting business.

Our operations and the operations of our customers are subject to federal, state, and local environmental laws and regulations that, among other matters, impose limitations on the discharge of pollutants into the air and water and establish standards for the treatment, storage, and disposal of solid, hazardous, and radioactive waste materials, the remediation of releases of hazardous substances, and the reclamation of land. In order to conduct our operations, we and our customers have obtained various federal, state, and local environmental permits and must comply with these permits and processes and procedures that have been approved by regulatory authorities. These environmental requirements and any failure to comply could give rise to sanctions, including the cessation of all or part of our operations, or substantial fines and penalties, environmental or reclamation liabilities, which liabilities may be strict, joint, and several, and damages, including natural resource damages in connection with our sites, customer sites, or sites to which we sent wastes, including CCRs, and third-party claims. Moreover, changes in environmental laws and regulations occur frequently, and any changes that result in more stringent or costly environmental requirements could require us or our customers to make significant expenditures to attain and maintain compliance. New regulations, any failure to comply with existing regulations, or environmental liabilities arising thereunder could have a material adverse effect on our business, results of operation, financial condition, and cash flows.

Success by environmental groups in convincing the EPA to restrict beneficial uses of CCRs, or to regulate CCRs as hazardous waste, may have an adverse effect on our business.

In April 2015, the EPA published the CCR Rule to regulate the disposal of CCRs, including fly ash and bottom ash generated at coal-fired power plants, as non-hazardous waste under Subtitle D of the RCRA and to distinguish beneficial use of CCRs from disposal, which became effective in October 2015. The CCR Rule establishes national minimum criteria for CCR landfills and impoundments consisting of location restrictions, design and operating criteria, groundwater monitoring and corrective action, closure requirements, post-closure care, recordkeeping and reporting and other requirements, and requires closure of facilities unable to comply with these criteria within five to seven years. The CCR Rule has increased the complexity and cost of managing and disposing of CCRs and the remediation of existing ash ponds and landfills. In addition, Congress passed the WIIN Act in December 2016, which, among other things, authorizes state permit programs to manage CCRs in lieu of the CCR Rule. The WIIN Act also gives the EPA the authority to regulate coal ash in states that choose not to implement state permitting programs and in states whose permitting programs are determined to be inadequate by the EPA. In July 2018, the EPA issued a final rule that would take further steps under the WIIN Act by granting states with approved CCR permit programs (or the EPA where it is the permitting authority) the ability to set certain alternative performance standards. The rule would also allow CCRs to be used during certain closure situations and address certain matters remanded to the EPA by the D.C. Circuit Court of Appeals in June 2016, including clarifying corrective action triggers and requirements, adding boron to the list of constituents triggering corrective action, determining the proper height of woody and grassy vegetation for slope protection, and modifying alternative closure procedures. The final rule is designed to allow states or the EPA to incorporate flexibilities into their coal ash permit programs and will be followed by an additional rule with a similar purpose, likely in 2019.

Some environmental groups continue to urge the EPA to restrict certain beneficial uses of CCRs, such as in concrete, road base, and soil stabilization, alleging contaminants may leach into the environment. The CCR Rule created a definition of “beneficial use” that includes uses in concrete and road base, but changes in the definition could reduce the demand for fly ash and other CCRs which would have an adverse effect on our revenues. Moreover, if the EPA were to regulate CCRs as hazardous waste, we, together with CCR generators, could be subject to environmental cleanup, personal injury, and other possible claims and liabilities, which could result in significant additional costs. Any such changes in or new regulations or indemnity obligations could have a material adverse effect on our business, results of operation, financial condition, and cash flows.

Increases in labor costs or our ability to find and employ technically skilled labor could impact our financial results.

Our continued success will depend on our ability to attract and retain qualified personnel. Additionally, a significant percentage of our nuclear services employees are hired on a seasonal basis as a result of the seasonal (typically every 12 to 24 months) outage maintenance services we provide. We compete with other businesses in our markets for qualified employees. From time to time, the labor supply is tight in some of our markets. A shortage of qualified employees would require us to enhance our wage and benefits packages to compete more effectively for employees, to hire more expensive temporary employees or to contract for services with more expensive third-party vendors. Labor is one of our highest costs and relatively small increases in labor costs per employee could materially affect our cost structure. If we fail to attract and retain qualified employees, control our labor costs, or recover any increased labor costs through increased prices we charge for our services or otherwise offset such increases with cost savings in other areas, our operating margins could suffer.

Our employees perform services that involve certain risks, including risks of accident, and a failure to maintain a safe work site could result in significant losses.

Safety is a primary focus of our business and is critical to our reputation. Our services can place our employees and others near large equipment, dangerous processes, or highly regulated materials, and in challenging environments. Operations in our Environmental Solutions and Maintenance and Technical Services segments involve risks, such as truck accidents, equipment defects, malfunctions, and failures, and natural disasters, which could potentially result in releases of CCR materials, injury or death of employees and others, or a need to shut down or reduce operation of our customers' facilities while remedial actions are undertaken. We are responsible for safety on the sites where we work and these risks expose us to potential liability for pollution and other environmental damages, personal injury, loss of life, business interruption, and property damage or destruction. Unsafe work conditions also have the potential of increasing employee turnover, increasing costs, and raising our operating costs. If we fail to implement appropriate safety procedures and/or if our procedures fail, our employees or others may suffer injuries.

Although we maintain functional groups whose primary purpose is to implement effective health, safety, and environmental procedures throughout our company, the failure to comply with such procedures, client contracts, or applicable regulations could subject us to losses and liability and the potential loss of customers. If we were to incur substantial liabilities in excess of any applicable insurance, our business, results of operations, and financial condition could be adversely affected.

Work stoppages, union negotiations, and other labor problems could adversely affect us.

A lengthy strike or other work stoppage at any of the facilities where we provide nuclear services could have a material adverse effect on us. Additional groups of employees may seek union representation in the future. From time to time, we are subject to unfair labor practice charges, complaints, and other legal administrative and arbitration proceedings initiated against us by unions, the National Labor Relations Board, or our employees, which could negatively impact our operating results. Negotiating collective bargaining agreements could divert management attention, which could also adversely affect operating results. If we are unable to negotiate acceptable collective bargaining agreements, we may be subject to labor disruptions, such as union-initiated work stoppages, including strikes. Depending on the type and duration of any labor disruptions, our operating expenses could increase significantly, which could adversely affect our financial condition, results of operations, and cash flows.

We may be adversely affected by uncertainty in the global financial markets and the deterioration of the financial condition of our customers. If any of our customers suffers financial difficulties affecting their credit risk, our operating results could be negatively impacted.

Our future results may be impacted by the uncertainty caused by an economic downturn, volatility or deterioration in the debt and equity capital markets, inflation, deflation, or other adverse economic conditions that may negatively affect us or parties with whom we do business, resulting in a reduction in our customers' spending and their nonpayment or inability to perform obligations owed to us, such as the failure of customers to honor their commitments. Additionally, downturns in U.S. construction could lower the demand for our byproduct sales offerings.

Furthermore, we provide service to a number of power generators. To the extent these entities suffer significant financial difficulties, they could be unable to pay amounts owed to us or to renew contracts with us at previous or increased rates. The inability of our customers to pay us in a timely manner or to pay increased rates, particularly larger accounts, could negatively affect our operating results. In addition, in the course of our business, we hold accounts receivable from our customers. In the event of the financial distress or bankruptcy of a customer, we could lose all or a portion of such outstanding accounts receivable associated with that customer. Further, if a customer was to enter into bankruptcy, it could also result in the cancellation of all or a portion of our service contracts with such customer at significant expense or loss or expected revenue to us.

Our financial results may fluctuate from quarter to quarter, which may make it difficult to predict our future performance.

Our financial results may fluctuate as a result of the seasonal outage maintenance services we provide as part of our nuclear services offerings, along with a number of other factors, many of which are outside of our control. Additionally, our other service offerings are subject to quarterly fluctuations from time to time. For these reasons, comparing our financial results on a period-to-period basis may not be meaningful, and our past results should not be relied on as an indication of our future performance. Our future quarterly and annual expenses as a percentage of our revenues may be significantly different from those we have recorded in the past or which we expect for the future. Our financial results in some quarters may fall below expectations. Changes in cost estimates relating to our services, which under percentage-of-completion accounting principles could lead to significant fluctuations in revenue or to changes in the timing of our recognition of revenue from such services, could cause our stock price to fall.

Seasonal and adverse weather conditions adversely affect demand for services and operations.

Weather can have a significant impact on demand as consumption of energy is seasonal, and any variation from normal weather patterns, including due to cooler or warmer summers and winters, can have a significant impact on demand. Adverse weather conditions, such as hurricanes, tropical storms, and severe cold weather, may interrupt or curtail our operations or our customers' operations, and result in a loss of revenue and damage to our equipment and facilities, which may or may not be insured.

We operate in a highly competitive industry and may not be able to compete effectively with larger and better capitalized companies.

While no specific company provides the range of services that we offer, the industries in which we operate are highly competitive and require substantial labor and capital resources. Some of the markets in which we compete or plan to compete are served by one or more large, national companies, as well as by regional and local companies of varying sizes and resources, some of which may have accumulated substantial goodwill in their markets. Some of our competitors may also be better capitalized than we are, have greater name recognition than we do, or be able to provide or be willing to bid their services at a lower price than we may be willing to offer. Our inability to compete effectively could hinder our growth or adversely impact our operating results.

We may be unable to make attractive acquisitions or to successfully integrate acquired businesses, and any inability to do so may disrupt our business and hinder our ability to grow.

We may from time to time consider opportunities to acquire or make investments in other services and businesses that could enhance our technical capabilities, complement our current services, or expand the breadth of our markets. The success of any completed acquisition will depend on our ability to effectively integrate the acquired business into our existing operations. The process of integrating acquired businesses may involve unforeseen difficulties or liabilities and may require a disproportionate amount of our managerial and financial resources. In addition, possible future acquisitions may be larger and for purchase prices significantly higher than those paid for earlier acquisitions. No assurance can be given that we will be able to identify suitable acquisition opportunities, negotiate acceptable terms, obtain financing for acquisitions on acceptable terms, or successfully acquire identified targets. Our failure to achieve consolidation savings, to integrate the acquired businesses and assets into our existing operations successfully, or to minimize any unforeseen operational difficulties or liabilities could have a material adverse effect on our financial condition and results of operations.

We are vulnerable to significant fluctuations in our liquidity or capital requirements that may vary substantially over time.

Our operations could require us to utilize large sums of working capital, sometimes on short notice and sometimes without assurance of recovery of the expenditures. Environmental liabilities, including those arising from various customer contracts and acquisition agreements, that require us to indemnify for certain environmental liabilities, litigation risks, unexpected costs or losses resulting from acquisitions, contract initiation or completion delays, political conditions, client payment problems and professional liability or indemnity claims are circumstances or events that could result in significant cash outflows.

Restrictive covenants in our debt agreements may restrict our ability to pursue our business strategies. If we fail to comply with the restrictions and covenants in our debt agreements, there could be an event of default under the terms of such agreements, which could result in an acceleration of payment.

Our debt agreements limit our ability to, among other things:

- incur indebtedness or contingent obligations;
- issue preferred stock;
- pay dividends or make distributions to our stockholders;

- repurchase or redeem our capital stock or subordinated indebtedness;
- make investments;
- create liens;
- enter into sale/leaseback transactions;
- incur restrictions on the ability of our subsidiaries to pay dividends or to make payments to us;
- enter into transactions with our stockholders and affiliates;
- sell and pledge assets; and
- acquire the assets of, or merge or consolidate with, other companies or transfer all or substantially all of our assets.

These covenants may also impair our ability to engage in favorable business activities and our ability to finance future operations or capital needs in furtherance of our business strategies. Moreover, the form or level of our indebtedness may prevent us from raising additional capital on attractive terms or obtaining additional financing if needed. A breach of any of these covenants would result in a default under the applicable agreement after any applicable grace periods. A default could result in acceleration of the indebtedness which would have a material adverse effect on us. If an acceleration occurs, it would likely accelerate all of our indebtedness through cross-default provisions and we would likely be unable to make all of the required payments to refinance such indebtedness. Even if new financing were available at that time, it may not be on terms that are acceptable to us.

Our borrowing levels and debt service obligations could adversely affect our financial condition and impair our ability to fulfill our obligations under our Revolving Loan and Term Loan (each, as hereinafter defined).

At December 31, 2018, we had total outstanding indebtedness of approximately \$257.3 million, \$202.4 million of which relates to our Term Loan. At December 31, 2018, we had outstanding borrowings of \$19.8 million and \$12.5 million in letters of credit issued for our account under our Revolving Loan. We typically dedicate a portion of our cash flow to debt service. If we do not ultimately have sufficient earnings to service our debt, we would need to refinance all or part of our existing debt, sell assets, borrow more money or sell securities, which we may not be able to do on commercially reasonable terms or at all.

The terms of our Term Loan and Revolving Loan include customary events of default and require us to maintain certain financial ratios and restrict our ability to incur additional indebtedness. A breach of our Term Loan and Revolving Loan, including any inability to comply with the required financial ratios, could result in a default. In the event of any default, the lenders thereunder would be entitled to accelerate the repayment of amounts outstanding, plus accrued and unpaid interest. Moreover, these lenders would have the option to terminate any obligation to make further extensions of credit under our Revolving Loan. In the event of a default under our Term Loan and Revolving Loan, the lenders thereunder could also proceed to foreclose against the assets securing such obligations. In the event of a foreclosure on all or substantially all of our assets, we may not be able to continue to operate as a going concern. Outstanding letters of credit issued under our revolving credit facility would need to be replaced with other forms of collateral. Cross defaults may also occur on other agreements including surety and lease agreements.

Our indebtedness could have important consequences, including the following:

- requiring us to dedicate a substantial portion of our cash flows from operations to the repayment of debt, which reduces the cash available for other business purposes;
 - limiting our ability to obtain additional financing and creating additional liens on our assets;
 - limiting our flexibility in planning for, and reacting to, changes in our business;
 - placing us at a competitive disadvantage if we are more leveraged than our competitors;
 - limiting our ability to deduct our interest expense;
 - making us more vulnerable to adverse economic and industry conditions; and
 - restricting us from making additional investments or acquisitions by limiting our aggregate debt obligations.

To the extent that new debt is incurred in addition to our current debt levels, the leverage risks described above would increase.

The limitation or the modification of the PAA indemnification authority and similar federal programs for nuclear and other potentially hazardous activities could adversely affect our business.

The PAA provides indemnification to the nuclear industry against liability arising from nuclear incidents at non-military facilities in the United States while still ensuring compensation for the general public. The Energy Policy Act of 2005 extended

the period of coverage to include all nuclear power reactors issued construction permits through December 31, 2025. Because we provide services to the nuclear energy industry in the ongoing maintenance and modification of its nuclear energy plants, we are entitled to the indemnification protections under the PAA. Although the PAA's indemnification provisions are broad, it does not apply to all liabilities that we might incur while performing services as a contractor.

If the contractor protection currently provided by the PAA is significantly modified, is not approved for, or does not extend to all of our services, our business could be adversely affected by either our clients' refusal to retain us for potentially covered services or our inability to obtain commercially adequate insurance and indemnification, or we may be subject to potentially material liabilities in connection with the performance of our services.

We may lose contracts through competitive bidding or early termination.

Many of our contracts are for a specified term and are or will be subject to competitive bidding in the future. Although we intend to bid on additional contracts, we may not always be the successful bidder. In addition, some or all of our customers may terminate their contracts with us prior to their scheduled expiration dates. If we are not able to replace lost revenues resulting from unsuccessful competitive bidding, early termination, or the renegotiation of existing contracts with other revenues within a reasonable time period, our results of operations and financial condition could be adversely affected.

We could be precluded from entering into or maintaining permits or certain contracts if we are unable to obtain sufficient third-party financial assurance or adequate insurance coverage.

Our operations in our Environmental Solutions and Maintenance and Technical Services segments sometimes require us to obtain performance or surety bonds, letters of credit, or other means of financial assurance to secure our contractual performance. We currently obtain performance and surety bonds from multiple financial institutions; however, if we are unable to obtain financial assurance in the future in sufficient amounts from appropriately rated sureties or at acceptable rates, we could be precluded from entering into additional municipal contracts or from obtaining or retaining landfill management or other contracts or operating permits. Any future difficulty in obtaining insurance could also impair our ability to secure future contracts conditioned upon having adequate insurance coverage.

If we are unable to fully protect the confidentiality of our trade secrets, or if competitors are able to replicate our technology or services, we may suffer a loss in our competitive advantage or market share.

We do not have patents or patent applications relating to many of our key processes and technology. If we are not able to maintain the confidentiality of our trade secrets, or if our competitors are able to replicate our technology or services, our competitive advantage would be diminished. Further, our competitors may develop or employ comparable technologies or processes.

In addition, third parties from time to time may initiate litigation against us by asserting that the conduct of our business infringes, misappropriates, or otherwise violates intellectual property rights. If we are sued for infringement and lose, we could be required to pay substantial damages and/or be enjoined from using or selling the infringing products or technology. Any legal proceeding concerning intellectual property could be protracted and costly regardless of the merits of any claim, is inherently unpredictable, and could have a material adverse effect on our financial condition, regardless of its outcome.

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

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

We depend on digital technologies to process and record financial and operating data and rely on sophisticated information technology systems and infrastructure to support our business, including process control technology. At the same time, cyber incidents, including deliberate attacks, have increased. The U.S. government has issued public warnings that indicate that energy assets might be specific targets of cyber security threats. Our technologies, systems, and networks and those of our vendors, suppliers, and other business partners may become the target of cyber attacks or information security breaches that could result in the unauthorized release, gathering, monitoring, misuse, loss, or destruction of proprietary and other information, or other disruption of business operations. In addition, certain cyber incidents, such as surveillance, may remain undetected for an extended period. Our systems for protecting against cyber security risks may not be sufficient. As the sophistication of cyber incidents continues to evolve, we will likely be required to expend additional resources to continue to modify or enhance our protective measures or to investigate and remediate any vulnerability to cyber incidents. Additionally, any of these systems may be susceptible to outages due to fire, floods, power loss, telecommunications failures, usage errors by employees, computer viruses, cyber attacks, or other security breaches or similar events. The failure of any of our information technology systems may cause disruptions in our operations, which could adversely affect our revenues and profitability.

We may be subject in the normal course of business to judicial, administrative, or other third-party proceedings that could materially and adversely affect our reputation, business, financial condition, results of operations, and liquidity.

We have in the past been, and may in the future be, named as a defendant in lawsuits, claims, and other legal proceedings during the ordinary course of our business. In the future, individuals, citizens groups, trade associations, community groups, or environmental activists may bring actions against us in connection with our operations that could interrupt or limit the scope of our business. Many of these proceedings could raise difficult and complicated factual and legal issues and are subject to uncertainties and complexities. These proceedings may seek, among other things, compensation for alleged personal injury, workers' compensation, employment discrimination, breach of contract, property damage, punitive damages, civil penalties, or other losses, consequential damages, or injunctive or declaratory relief. In addition, pursuant to our service arrangements, we generally indemnify our customers for claims related to the services we provide thereunder.

With respect to all such proceedings, we have and will accrue expenses in accordance with accounting principles generally accepted in the United States of America ("GAAP"). In the event that such actions or indemnities are ultimately resolved unfavorably at amounts exceeding our accrued expenses, or at material amounts, the outcome could materially and adversely affect our reputation, business, financial condition, and results of operations. In addition, payments of significant amounts, even if reserved, could adversely affect our liquidity position.

Risks Related to Our Common Stock

The market price of our stock may be influenced by many factors, some of which are beyond our control.

These factors include the various risks described in this section as well as the following:

- the failure of securities analysts to continue to cover our common stock or changes in financial estimates or recommendations by analysts;
- announcements by us or our competitors of significant contracts, acquisitions, or capital commitments;
- changes in market valuation or earnings of our competitors;
- variations in quarterly operating results;
- internal control failures;
- changes in management;
- availability of capital;
- general economic conditions;
- terrorist acts;
- legislation;
- future sales of our common stock; and
- investor perception of us and the power generation industry.

Additional factors that do not specifically relate to our company or the electric utility industry may also materially reduce the market price of our common stock, regardless of our operating performance.

The concentration of our capital stock will limit other stockholders' ability to influence corporate matters.

Bernhard Capital Partners Management, LP and its affiliates ("BCP") own approximately 51% of the total voting power of our outstanding shares of common stock. As a result, BCP has the ability to exert substantial influence or actual control over our management and affairs and over most matters requiring action by our stockholders. The interests of BCP may not coincide with the interests of the other holders of our common stock. This concentration of ownership also may have the effect of delaying or preventing a change in control otherwise favored by our other stockholders and could depress the stock price.

Shares eligible for future sale may cause the market price of our common stock to drop significantly, even if our business is doing well.

The market price of our common stock could decline as a result of sales of a large number of shares of our common stock in the market or the perception that these sales could occur. These sales, or the possibility that these sales may occur, also might make it more difficult for us to sell equity securities in the future at a time and at a price that we deem appropriate.

BCP and its respective affiliates are not limited in their ability to compete with us, and the corporate opportunity provisions in our amended and restated certificate of incorporation could enable BCP to benefit from corporate opportunities that might otherwise be available to us.

Our governing documents provide that BCP and its respective affiliates (including portfolio investments of BCP and its affiliates) are not restricted from owning assets or engaging in businesses that compete directly or indirectly with us. In particular, subject to the limitations of applicable law, our amended and restated certificate of incorporation, among other things:

- permits BCP and its respective affiliates to conduct business that competes with us and to make investments in any kind of property in which we may make investments; and
- provides that if BCP or its respective affiliates, or any employee, partner, member, manager, officer or director of BCP or its respective affiliates who is also one of our directors or officers, becomes aware of a potential business opportunity, transaction, or other matter, they will have no duty to communicate or offer that opportunity to us.

BCP or its respective affiliates may become aware, from time to time, of certain business opportunities (such as acquisition opportunities) and may direct such opportunities to other businesses in which they have invested, in which case we may not become aware of or otherwise have the ability to pursue such opportunity. Furthermore, such businesses may choose to compete with us for these opportunities, possibly causing these opportunities to not be available to us or causing them to be more expensive for us to pursue. In addition, BCP and its respective affiliates may dispose of properties or other assets in the future, without any obligation to offer us the opportunity to purchase any of those assets. As a result, our renouncing our interest and expectancy in any business opportunity that may be from time to time presented to BCP and its respective affiliates could adversely impact our business or prospects if attractive business opportunities are procured by such parties for their own benefit rather than for ours.

We have engaged in transactions with our affiliates and expect to do so in the future. The terms of such transactions and the resolution of any conflicts that may arise may not always be in our or our stockholders' best interests.

We have engaged in transactions and expect to continue to engage in transactions with affiliated companies in the future. The terms of such transactions and the resolution of any conflicts that may arise may not always be in our or our stockholders' best interests.

Our amended and restated certificate of incorporation and amended and restated bylaws, as well as Delaware law, contain provisions that could discourage acquisition bids or merger proposals, which may adversely affect the market price of our common stock.

Our amended and restated certificate of incorporation authorizes our board of directors to issue preferred stock without stockholder approval. If our board of directors elects to issue preferred stock, it could be more difficult for a third party to acquire us. In addition, some provisions of our amended and restated certificate of incorporation and amended and restated bylaws could make it more difficult for a third party to acquire control of us, even if the change of control would be beneficial to our stockholders, including:

- after BCP and its affiliates no longer collectively hold more than 35% of the voting power of our common stock, providing that all vacancies, including newly created directorships, may, except as otherwise required by law or, if applicable, the rights of holders of a series of preferred stock, only be filled by the affirmative vote of a majority of directors then in office, even if less than a quorum (prior to such time, vacancies may also be filled by stockholders holding a majority of the outstanding shares entitled to vote);
- after BCP and its affiliates no longer collectively hold more than 35% of the voting power of our common stock, permitting any action by stockholders to be taken only at an annual meeting or special meeting rather than by a written consent of the stockholders, subject to the rights of any series of preferred stock with respect to such rights;
- after BCP and its affiliates no longer collectively hold more than 35% of the voting power of our common stock, permitting our amended and restated certificate of incorporation and amended and restated bylaws to be amended by the affirmative vote of the holders of at least two-thirds of our then outstanding shares of stock entitled to vote thereon;
- after BCP and its affiliates no longer collectively hold more than 35% of the voting power of our common stock, permitting special meetings of our stockholders to be called only by our board of directors pursuant to a resolution adopted by the affirmative vote of a majority of the total number of authorized directors whether or not there exist any vacancies in previously authorized directorships (prior to such time, a special meeting may also be called at the request of stockholders holding a majority of the outstanding shares entitled to vote);
- after BCP and its affiliates no longer collectively hold more than 35% of the voting power of our common stock, requiring the affirmative vote of the holders of at least 75% in voting power of all then outstanding common stock

entitled to vote generally in the election of directors, voting together as a single class, to remove any or all of the directors from office at any time, and directors will be removable only for “cause”;

- dividing our board of directors into three classes of directors, with each class serving staggered three-year terms;
- prohibiting cumulative voting in the election of directors;
- establishing advance notice provisions for stockholder proposals and nominations for elections to the board of directors to be acted upon at meetings of stockholders; and
- providing that the board of directors is expressly authorized to adopt, or to alter or repeal our amended and restated bylaws.

Our amended and restated certificate of incorporation designates the Court of Chancery of the State of Delaware as the sole and exclusive forum for certain types of actions and proceedings that may be initiated by our stockholders, which could limit our stockholders’ ability to obtain a favorable judicial forum for disputes with us or our directors, officers, employees, or agents.

Our amended and restated certificate of incorporation provides that, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware will, to the fullest extent permitted by applicable law, be the sole and exclusive forum for (i) any derivative action or proceeding brought on our behalf, (ii) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers, employees, agents, or stockholders to us or our stockholders, (iii) any action asserting a claim against us or any director, officer, employee, or agent of ours arising pursuant to any provision of the Delaware General Corporation Law (the “DGCL”), our amended and restated certificate of incorporation or our amended and restated bylaws, or (iv) any action asserting a claim that is governed by the internal affairs doctrine. Any person or entity purchasing or otherwise acquiring any interest in shares of our capital stock will be deemed to have notice of, and consented to, the provisions of our amended and restated certificate of incorporation described in the preceding sentence. This choice of forum provision may limit a stockholder’s ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers, employees, or agents, which may discourage such lawsuits against us and such persons. Alternatively, if a court were to find these provisions of our amended and restated certificate of incorporation inapplicable to, or unenforceable in respect of, one or more of the specified types of actions or proceedings, we may incur additional costs associated with resolving such matters in other jurisdictions, which could adversely affect our business, financial condition, or results of operations.

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

We do not plan to declare cash dividends on shares of our common stock in the foreseeable future. Additionally, our debt agreements place certain restrictions on our ability to pay cash dividends. Consequently, your only opportunity to achieve a return on your investment in us will be if you sell your common stock at a price greater than you paid for it. There is no guarantee that the price of our common stock that will prevail in the market will ever exceed the price that you paid for it.

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

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

Taking advantage of the reduced disclosure requirements applicable to “emerging growth companies” may make our common stock less attractive to investors.

We qualify as an “emerging growth company” as defined in the Jumpstart Our Business Startups Act (the “JOBS Act”). An emerging growth company may take advantage of certain reduced reporting and other requirements that are otherwise applicable generally to public companies. Pursuant to these reduced disclosure requirements, emerging growth companies are not required to, among other things, comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, provide certain disclosures regarding executive compensation, hold stockholder advisory votes on executive compensation, or obtain stockholder approval of any golden parachute payments not previously approved. In addition, emerging growth companies have longer phase-in periods for the adoption of new or revised financial accounting standards.

We intend to take advantage of all of the reduced reporting requirements and exemptions, including the longer phase-in periods for the adoption of new or revised financial accounting standards under Section 107 of the JOBS Act, until we are no longer an emerging growth company. Under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards until such time as those standards apply to private companies. If we were to subsequently elect instead to comply with these public company effective dates, such election would be irrevocable pursuant to Section 107 of the JOBS Act.

Our election to use the longer phase-in periods permitted by this election may make it difficult to compare our financial statements to those of non-emerging growth companies and other emerging growth companies that have opted out of the longer phase-in periods under Section 107 of the JOBS Act and who will comply with new or revised financial accounting standards. We cannot predict if investors will find our common stock less attractive because we will rely on these exemptions. If some investors find our common stock less attractive as a result, there may be a less active trading market for our common stock and our common stock price may be more volatile.

If securities or industry analysts do not publish research or reports about our business, if they adversely change their recommendations regarding our common stock, or if our operating results do not meet their expectations, our stock price could decline.

The trading market for our common stock is influenced by the research and reports that industry or securities analysts publish about us or our business. If one or more of these analysts cease coverage of our company or fail to publish reports on us regularly, we could lose visibility in the financial markets, which in turn could cause our stock price or trading volume to decline. Moreover, if one or more of the analysts who cover our company adversely changes his or her recommendation with respect to our common stock or if our operating results do not meet their expectations, our stock price could decline.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

We lease our corporate headquarters in Louisville, Kentucky and own and lease other facilities throughout the United States where we conduct business. Our facilities are utilized for operations in both of our reportable segments and include offices, equipment yards, mines, storage, and manufacturing facilities. As of December 31, 2018, we owned two of our facilities and leased the remainder. We believe that our existing facilities are sufficient for our current needs.

Item 3. Legal Proceedings

In July 2017, APTIM Corp. sued Allied Power Management, LLC and certain of its employees and affiliated entities in the U.S. District Court for the Northern District of Illinois, alleging, among other things, misappropriation of alleged trade secrets, civil conspiracy, and tortious interference with their contractual and business relations. APTIM and its alleged predecessors in interest also had initiated judicial and arbitral proceedings in Louisiana against Dorsey “Ron” McCall, our Senior Vice President and Board Member, alleging breaches of his employment agreement. On December 12, 2018, all parties to the foregoing proceedings executed two settlement and mutual release agreements, pursuant to which the parties reached an omnibus settlement of all claims, lawsuits and proceedings.

We are party to a lawsuit filed against North Carolina by a certain environmental advocacy group alleging that the issuance by the state of certain permits associated with our Brickhaven clay mine reclamation site exceeded the state’s power. Although the state’s authority to issue the bulk of the permits (i.e. the allowance to reclaim the original site with coal ash) was upheld, the portion of the permits that allows us to “cut and prepare” an additional portion of the site was held by the North Carolina Superior Court to exceed the relevant agency’s statutory authority. The North Carolina Superior Court’s decision was reversed and remanded back to the North Carolina Office of Administrative Hearing. The Court stayed the action and ordered the parties to mediate. The parties have been unable to reach a resolution during the mediation. The stay expires on April 5, 2019.

Allied Power Management, LLC, and its affiliate, Allied Power Resources, LLC, have been named in a collective action lawsuit filed in the U.S. District Court for the Northern District of Illinois, alleging violations of the Fair Labor Standards Act, and which includes related class claims alleging violations of the Illinois Minimum Wage Law and Pennsylvania Minimum Wage Act for failure to pay overtime. This case is one of a series filed against companies in the oil, gas, and energy industries in Illinois and Texas. The parties mediated this case in November 2018 and reached a settlement, contingent upon Court approval. With respect to such settlement, the parties are currently negotiating the settlement agreement and related documents to be submitted to the Court for approval.

In addition to the above matters, we are from time to time party to various claims and legal proceedings which have arisen in the ordinary course of our business. With respect to all such lawsuits, claims and proceedings, we record reserves when it is

probable a liability has been incurred and the amount of loss can be reasonably estimated. Although it is difficult to predict the ultimate outcome of these claims and legal proceedings, we do not believe that the ultimate disposition of these matters, individually or in the aggregate, would have a material adverse effect on our results of operations, financial position or cash flows. We maintain liability insurance for certain risks that is subject to certain self-insurance limits.

Item 4. Mine Safety Disclosures

Not applicable.

Executive Officers of the Registrant

The following information is provided with respect to each of the executive officers of the Company as of March 27, 2019.

<u>Name</u>	<u>Age</u>	<u>Positions with Charah Solutions</u>
Scott A. Sewell	39	President, Chief Executive Officer and Director
Nicholas W. Jacoby	37	Interim Chief Financial Officer and Treasurer
Dorsey “Ron” McCall	71	Senior Vice President and Director

Scott A. Sewell—President, Chief Executive Officer and Director. Mr. Sewell has served as President and Chief Executive Officer of Charah Solutions and a member of our board of directors since January 2019. Prior to that, Mr. Sewell held several other leadership positions with Charah Solutions, including Chief Operating Officer from 2013 to January 2019, Senior Vice President of Operations from 2012 to 2013, Vice President of Operations from 2010 to 2012, and Operations Manager from 2008 to 2010. Prior to joining Charah Solutions, he worked for Bechtel Corporation from 2002 to 2007. He is a Six Sigma Yellow Belt and holds professional affiliations as a member of the Project Management Institute, the Association of Equipment Management Professionals and the International Erosion Control Association. Mr. Sewell holds a bachelor’s degree in international business from the College of Charleston in South Carolina.

Nicholas W. Jacoby—Interim Chief Financial Officer and Treasurer. Mr. Jacoby has served as Interim Chief Financial Officer and Treasurer of Charah Solutions since January 2019. From November 2017 to January 2019, Mr. Jacoby served as the Vice President of Finance with Charah Solutions. Prior to joining Charah Solutions, he worked for Ventas, Inc. where he served as Senior Vice President of Asset Management from August 2015 to November 2017, and Vice President of Asset Management from March 2012 to August 2015. Mr. Jacoby holds a bachelor’s degree in accounting and an M.B.A. from the University of Louisville.

Dorsey “Ron” McCall—Senior Vice President and Director. Mr. McCall has served as Senior Vice President of Charah Solutions since 2018 and as Chief Executive Officer of Allied Power Management, LLC, a subsidiary of Charah Solutions, since he joined the Company in June 2017. Mr. McCall has also served as a member of our board of directors since January 2018. From January 2016 to June 2017, Mr. McCall worked as an independent consultant. Prior to that, Mr. McCall served as President of the Plant Services Division at Chicago Bridge & Iron Company N.V. (formerly The Shaw Group Inc.), a large engineering, procurement, and construction company acquired by McDermott International, Inc. in February 2018, from 2002 to January 2016 and Senior Vice President of Turner Industries’ Western Division for nearly 25 years. Mr. McCall has extensive knowledge in all aspects of project management, including nuclear outages, refinery turnarounds, and major construction and maintenance projects, both domestic and international. Mr. McCall received his bachelor’s degree in education from McNeese State University.

PART II

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

The shares of our common stock trade on the New York Stock Exchange under the symbol “CHRA.”

As of March 13, 2019, there were 1,142 stockholders of record of our common stock. We have not paid dividends on our common stock to date and do not intend to pay dividends in the foreseeable future. Our debt agreements place certain restrictions on our ability to pay cash dividends. We intend to retain earnings to finance the development and expansion of our business. Payment of common stock dividends in the future will depend upon our debt covenants, our ability to generate earnings, our need for capital, our investment opportunities and our overall financial condition, among other things.

Item 6. Selected Financial Data

The table below shows selected historical consolidated and combined financial information for the periods and as of the dates indicated. On January 13, 2017, Charah Management LLC, a Delaware limited liability company (“Charah Management”), completed a transaction with BCP, a previously unrelated third party, pursuant to which BCP acquired a 76% equity position of Charah Management. Our historical financial and operating information as of and for the periods after January 13, 2017 may not be comparable to the historical financial and operating information as of and for the periods ended on or before January 12, 2017. The successor columns below represent the consolidated financial information of Charah Solutions for the year ended December 31, 2018 and the combined financial information of Charah and Allied Power Management, LLC, a Delaware limited liability company (“Allied”), for the period from January 13, 2017 through December 31, 2017, as reflected in our audited financial statements included elsewhere herein. The predecessor columns below represent the financial information of Charah for the year ended December 31, 2016 and the period from January 1, 2017 through January 12, 2017, as reflected in our audited financial statements included elsewhere herein. This selected financial data should be read in conjunction with “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations” and the consolidated and combined financial statements and the related notes included elsewhere herein.

	Successor		Predecessor	
	For the year ended December 31, 2018	Period from January 13, 2017 through December 31, 2017	Period from January 1, 2017 through January 12, 2017	For the year ended December 31, 2016
	(in thousands, except per share data)			
Statement of Operations:				
Revenue:				
Environmental Solutions	\$ 343,105	\$ 232,581	\$ 7,451	\$ 218,051
Maintenance and Technical Services	397,357	188,658	1,679	47,017
Total revenue	740,462	421,239	9,130	265,068
Cost of sales	642,734	338,908	7,301	203,228
Gross profit:				
Environmental Solutions	69,464	64,433	1,412	51,282
Maintenance and Technical Services	28,264	17,898	417	10,558
Total gross profit	97,728	82,331	1,829	61,840
General and administrative expenses	76,752	48,495	3,170	35,170
Operating income (loss)	20,976	33,836	(1,341)	26,670
Interest expense, net	(32,226)	(14,146)	(4,181)	(6,244)
Income from equity method investment	2,407	816	48	2,703
(Loss) income before income taxes	(8,843)	20,506	(5,474)	23,129

	Successor		Predecessor	
	For the year ended December 31, 2018	Period from January 13, 2017 through December 31, 2017	Period from January 1, 2017 through January 12, 2017	For the year ended December 31, 2016
Income tax benefit	(2,427)	—	—	—
Net (loss) income	(6,416)	20,506	(5,474)	23,129
Less income attributable to non-controlling interest (1)	(2,486)	(2,190)	(54)	(2,198)
Net (loss) income attributable to Charah Solutions, Inc.	\$ (8,902)	\$ 18,316	\$ (5,528)	\$ 20,931
Basic (loss) earnings per share	\$ (0.33)	\$ 0.77	N/A	N/A
Diluted (loss) earnings per share	\$ (0.33)	\$ 0.75	N/A	N/A
Pro forma net (loss) income information (unaudited):				
Net (loss) income attributable to Charah Solutions, Inc. before provision for income taxes	\$ (11,329)	\$ 18,316	\$ (5,528)	\$ 20,931
Pro forma provision for income taxes	(2,214)	6,960	(2,101)	7,954
Pro forma net (loss) income attributable to Charah Solutions, Inc.	\$ (9,115)	\$ 11,356	\$ (3,427)	\$ 12,977
Statements of Cash Flows Data:				
Cash flows (used in) provided by operating activities	\$ (13,633)	\$ 57,792	\$ (4,418)	\$ 8,351
Cash flows (used in) provided by investing activities	\$ (40,368)	\$ (7,270)	\$ —	\$ (15,885)
Cash flows provided by (used in) financing activities	\$ 28,637	\$ (19,304)	\$ 4,463	\$ 7,298
Other Financial Data:				
Adjusted EBITDA (2)	\$ 98,772	\$ 76,430	\$ (422)	\$ 58,965
Adjusted EBITDA margin (2)	13.3%	18.1%	(4.6) %	22.7%
Balance Sheet Data (as of the end of the periods indicated):				
Total assets	\$ 458,901	\$ 377,651		
Long-term debt	\$ 230,821	\$ 227,698		
Total liabilities	\$ 365,511	\$ 329,332		
Total equity	\$ 93,390	\$ 48,319		

(1) Relates to one of our joint ventures.

(2) Adjusted EBITDA and Adjusted EBITDA margin are non-GAAP financial measures. For a definition of Adjusted EBITDA and Adjusted EBITDA margin, as well as a reconciliation to our most directly comparable financial measures calculated and presented in accordance with GAAP, please read “—Non-GAAP Financial Measures.”

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

The following discussion and analysis should be read in conjunction with the historical financial statements and the related notes included elsewhere herein. This discussion contains “forward-looking statements” reflecting our current expectations, estimates, and assumptions concerning events and financial trends that may affect our future operating results or financial position. Actual results and the timing of events may differ materially from those contained in these forward-looking statements due to a number of factors. Factors that could cause or contribute to such differences include, but are not limited to, capital expenditures, economic and competitive conditions, regulatory changes, and other uncertainties, as well as those factors discussed below and elsewhere herein. Please read Cautionary Note Regarding Forward-Looking Statements. Also, please read the risk factors and other cautionary statements described under “Item 1A. Risk Factors” included elsewhere herein. We assume no obligation to update any of these forward-looking statements.

Charah Solutions, Inc.

Charah Solutions was formed in January 2018 and did not conduct any material business operations prior to the transactions described under “—Initial Public Offering.” In connection with the closing of our initial public offering (the “IPO”), and pursuant to the terms and conditions of the master reorganization agreement, dated June 13, 2018, Charah Management and Allied Power Holdings, LLC, a Delaware limited liability company (“Allied Power Holdings”), became wholly owned subsidiaries of the Company.

Through our ownership of Charah Management and Allied Power Holdings, we own the outstanding equity interests in Charah and Allied, the subsidiaries through which we operate our businesses.

Overview

We were formed in January 2018 in anticipation of the IPO to be a holding company for Charah Management and Allied Power Holdings. The historical financial data presented herein as of December 31, 2018 and for periods after the June 18, 2018 corporate reorganization is that of Charah and Allied on a consolidated basis, and on a combined basis for periods prior to the June 18, 2018 corporate reorganization. Allied was formed in May 2017 and did not commence operations until July 2017.

We are a leading provider of mission-critical environmental and maintenance services to the power generation industry, enabling our customers to address challenges related to the remediation of ash ponds and landfills at open and closed power plant sites while continuously operating and providing necessary electric power to communities nationwide. We offer a suite of coal ash management and recycling, environmental remediation, and outage maintenance services. We also design and implement solutions for complex environmental projects (such as coal ash pond closures) and facilitate coal ash recycling through byproduct sales and other beneficial use services. We operate in over 20 states, resulting in an overall footprint and density in key markets that we believe is difficult to replicate.

We are an environmental remediation and maintenance company and conduct our operations through two segments: Environmental Solutions and Maintenance and Technical Services.

Environmental Solutions . Our Environmental Solutions segment includes remediation and compliance services, as well as byproduct sales offerings. Remediation and compliance services are associated with our customers’ need for multi-year environmental improvement and sustainability initiatives, whether driven by proactive engagement, by power generation customers, by regulatory requirements, or by consumer expectations and standards. Byproduct sales support both our power generation customers’ desire to profitably recycle recurring and historic volumes of CCRs and our ultimate end customers’ need for high-quality, cost-effective raw material substitutes.

Maintenance and Technical Services . Our Maintenance and Technical Services segment includes fossil services and, from and after May 2017 when Allied was created, nuclear services. Fossil services are the recurring and mission-critical management of coal ash and the routine maintenance, outage services and staffing solutions for coal-fired power generation facilities. Nuclear services, which we market under the Allied Power brand name, include routine maintenance, outage services, facility maintenance, and staffing solutions for nuclear power generation facilities. The Maintenance and Technical Services segment offerings are most closely associated with the ongoing operations of power plants, whether in the form of daily environmental management or required maintenance services (typically during planned outages).

Initial Public Offering

On June 18, 2018, we completed the IPO of 7,352,941 shares of the Company’s common stock, par value \$0.01 per share. The net proceeds of the IPO to us prior to offering expenses were approximately \$59.2 million. We used a portion of the IPO proceeds to pay off approximately \$40.0 million of the borrowings outstanding under the Term Loan, and any remaining net proceeds were used to pay offering expenses or for general corporate purposes.

How We Evaluate Our Operations

We use a variety of financial and operational metrics to assess the performance of our operations, including:

- Revenues;
- Gross Profit;
- Operating Income;
- Adjusted EBITDA; and
- Adjusted EBITDA Margin.

Revenues

We analyze our revenues by comparing actual revenues to our internal projections for a given period and to prior periods to assess our performance. We believe that revenues are a meaningful indicator of the demand and pricing for our services.

Gross Profit

We analyze our gross profit, which we define as revenues less cost of sales, to measure our financial performance. We believe gross profit is a meaningful metric because it provides insight on financial performance of our revenue streams without consideration of Company overhead. When analyzing gross profit, we compare actual gross profit to our internal projections for a given period and to prior periods to assess our performance.

Operating Income

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

Adjusted EBITDA and Adjusted EBITDA Margin

We view Adjusted EBITDA and Adjusted EBITDA Margin, which are non-GAAP financial measures, as an important indicator of performance. We define Adjusted EBITDA as net income before interest expense, net, depreciation and amortization, equity-based compensation, and income taxes, elimination of certain legacy expenses, amounts from a non-acquired business line, and transaction related expenses and other items. Adjusted EBITDA margin represents the ratio of Adjusted EBITDA to total revenues. See “—Non-GAAP Measures” for more information and reconciliations of Adjusted EBITDA to net income, the most directly comparable financial measure calculated and presented in accordance with GAAP.

Key Factors Affecting Our Business and Financial Statements

Ability to Capture New Contracts and Opportunities

Our ability to grow revenue and earnings is dependent on maintaining and increasing our market share, renewing existing contracts, and obtaining additional contracts from proactive bidding on contracts with new and existing customers. We proactively work with existing customers ahead of contract end dates to attempt to secure contract renewals. We also leverage the embedded long-term nature of our customer relationships to obtain insight into and to capture new business opportunities across our platform.

Seasonality of Business

Based on historic trends, we expect our operating results to vary seasonally. Nuclear power generators perform turnaround and outages in the off-peak months when demand is lower and generation capacity is less constrained. As a result, our nuclear services offerings may have higher revenue volume in the spring and fall months. Variations in normal weather patterns can also cause changes in the consumption of energy, which may influence demand and timing of associated services for our fossil services offerings. Inclement weather can impact construction-related activities associated with pond and landfill remediation, which affects the timing of revenue generation within remediation and compliance services. Byproduct sales are also impacted during winter months when the utilization of cement and cement products is generally lower.

Project-Based Nature of Environmental Remediation Mandates

We believe there is a significant pipeline of coal ash ponds and landfills that will require remediation and/or closure in the future. Due to their scale and complexity, these environmental remediation projects are typically completed over longer periods of time. As a result, our revenues from these projects can fluctuate over time. Some of our revenues from projects are recognized using percentage of completion accounting for GAAP purposes. This method of revenue recognition is determined by estimating the percentage of completion on a project and the ultimate estimated gross profit margin on the project. The timing of revenues

recorded for financial reporting purposes may differ from actual billings to customers, sometimes resulting in costs and billing in excess of actual revenues. Because of the risks in estimating long-term projects, actual results may differ from these estimates.

Byproduct Recycling Market Dynamics

There is a growing demand for recycled coal ash across a variety of applications, in addition to the market forces and governmental regulations driving the need to dispose of coal ash in an environmentally sensitive manner. Pricing of byproduct sales is driven by supply and demand market dynamics, in addition to the chemical and physical properties of the ash. As demand increases for the end products that use recycled coal-fired power generation waste byproducts (i.e., concrete for construction and infrastructure projects), the demand for recycled coal ash also typically rises. These fluctuations affect the relative demand for our byproduct sales offerings. In recessionary periods, construction and infrastructure spending and the corresponding need for concrete may decline. However, this unfavorable effect may be partially offset by an increase in the demand for recycled coal ash during a recessionary period given coal ash is more cost-effective than other alternatives.

Power Generation Industry Spend on Environmental Liability Management and Regulatory Requirements

The power generation industry has increased annual spending on environmental liability management. We believe this is the result of not only regulatory and consumer pressure, but also the industry's increasing focus on environmental stewardship. Continued increases in spending on environmental liability management by our customers should result in increased demand for services across our platform.

Cost Management and Capital Investment Efficiency

Our main operating costs consist of labor and material costs and equipment maintenance. We maintain a focus on cost management and efficiency, including monitoring labor costs, both in terms of wage rates and headcount, along with other costs such as materials and equipment. We maintain a disciplined approach to capital expenditure decisions, which are typically associated with specific contract requirements. Furthermore, we strive to extend the useful life of our equipment through the application of a well-planned routine maintenance program.

How We Generate Revenues

The Environmental Solutions segment generates revenue through our remediation and compliance services, as well as byproduct sales offerings. Our remediation and compliance services offerings primarily consist of designing, constructing, managing, remediating, and closing ash ponds and landfills on customer-owned sites. Our byproduct sales offerings include the recycling of recurring and contracted volumes of coal-fired power generation waste byproducts, such as bottom ash, fly ash, and gypsum byproduct, each of which can be used for various industrial purposes. Our platform of services is contracted for terms generally ranging from 18 months to five years, thereby reducing financial volatility. In excess of 90% of our services work is structured as time and materials, cost reimbursable, or unit price contracts, which significantly reduces the risk of loss on contracts and provides gross margin visibility. Revenue from management contracts is recognized when the ash is hauled to the landfill or the management services are provided. Revenue from the sales of ash is recognized when it is delivered to the customer.

The Maintenance and Technical Services segment generates revenue through our fossil services and nuclear services offerings. Maintenance and Technical Services segment offerings are most closely associated with the ongoing operations of power plants, whether in the form of daily environmental management or required maintenance services (typically during planned outages). Our fossil services offerings focus on recurring and mission-critical management of coal ash and routine maintenance, outage services and staffing solutions for coal-fired power generation facilities to fulfill an environmental service need of our customers in handling their waste byproducts. Our nuclear services operations, which we market under the Allied Power brand name, consists of a broad platform of mission-critical professional, technical, and craft services spanning the entire asset life cycle of a nuclear power generator. The services are performed on the customer's site and the contract terms typically range from three to five years. Revenues are billed and paid during the periods of time work is being executed. Our nuclear services revenues tend to be seasonal and may experience significant increases during periods of shutdowns of generators. This combination of the maintenance and environmental-related services deepens customer connectivity and drives long-term relationships which we believe is critical for renewing existing contracts, winning incremental business from existing customers at new sites, and adding new customers. Over the last five years, we have achieved an approximately 90% renewal rate for contracts in our fossil services offerings up for renewal.

Factors Impacting the Comparability of Results of Operations

Public Company Costs

As a new public company, we expect to incur incremental recurring and certain non-recurring costs related to our transition to a publicly traded and taxable corporation, including the costs of the IPO and the costs associated with the initial implementation of our Sarbanes-Oxley Section 404 internal control implementation and testing. We also expect to incur additional significant and recurring expenses as a publicly traded company, including costs associated with the employment of additional personnel,

compliance under the Exchange Act, annual and quarterly reports to common stockholders, registrar and transfer agent fees, national stock exchange fees, audit fees, incremental director and officer liability insurance costs, and director and officer compensation.

Income Taxes

Charah Solutions is a “C” Corporation under the Internal Revenue Code of 1986, as amended (the “Code”), and, as a result, is subject to U.S. federal, state, and local income taxes. In connection with the IPO, Charah and Allied, which previously were flow-through entities for income tax purposes and were indirect subsidiaries of two partnerships, Charah Management and Allied Power Holdings, respectively, became indirect subsidiaries of the Company. Prior to the contribution, Charah and Allied passed through their taxable income to the owners of the partnerships for U.S. federal and other state and local income tax purposes and, thus, were not subject to U.S. federal income taxes or other state or local income taxes, except for franchise tax at the state level (at less than 1% of modified pre-tax earnings). Accordingly, the financial data attributable to Charah and Allied prior to the contribution on June 18, 2018 contains no provision for U.S. federal income taxes or income taxes in any state or locality other than franchise taxes.

Operations of Allied Power Management, LLC

Allied was formed in May 2017 and commenced operations in July 2017. Our results of operations for the year ended December 31, 2017 reflect the results of Allied only from the commencement of its operations in July 2017. As a result, our historical financial and operating information for the year ended December 31, 2018 may not be comparable to the historical financial and operating information for the year ended December 31, 2017.

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

The table below sets forth our selected operating data for the years ended December 31, 2018 and 2017. The successor columns below represent the consolidated financial information of Charah Solutions for the year ended December 31, 2018 and the combined financial information of Charah and Allied for the period from January 13, 2017 through December 31, 2017, and the predecessor column below represents the financial information of Charah for the period from January 1, 2017 through January 12, 2017, each as reflected in our audited financial statements included elsewhere herein. The dollar amount and percentage change information below reflects the difference between results in the year ended December 31, 2018 as compared to the combined results for the period from January 1, 2017 through January 12, 2017 and the period from January 13, 2017 through December 31, 2017.

	Successor		Predecessor		Change	
	For the year ended December 31, 2018	Period from January 13, 2017 through December 31, 2017	Period from January 1, 2017 through January 12, 2017			
(in thousands)						
Revenues:						
Environmental Solutions	\$ 343,105	\$ 232,581	\$ 7,451	\$ 103,073	42.9 %	
Maintenance and Technical Services	397,357	188,658	1,679	207,020	108.8 %	
Total revenue	740,462	421,239	9,130	310,093	72.1 %	
Cost of sales	642,734	338,908	7,301	296,525	85.6 %	
Gross profit:						
Environmental Solutions	69,464	64,433	1,412	3,619	5.5 %	
Maintenance and Technical Services	28,264	17,898	417	9,949	54.3 %	
Total gross profit	97,728	82,331	1,829	13,568	16.1 %	
General and administrative expenses	76,752	48,495	3,170	25,087	48.6 %	
Operating income (loss)	20,976	33,836	(1,341)	(11,519)	(35.4)%	
Interest expense, net	(32,226)	(14,146)	(4,181)	(13,899)	75.8 %	
Income from equity method investment	2,407	816	48	1,543	178.6 %	
(Loss) income before taxes	(8,843)	20,506	(5,474)	(23,875)	(158.8)%	
Income tax benefit	(2,427)	—	—	(2,427)	100.0 %	
Net (loss) income	(6,416)	20,506	(5,474)	(21,448)	(142.7)%	
Less income attributable to non-controlling interest	(2,486)	(2,190)	(54)	(242)	10.8 %	
Net (loss) income attributable to Charah Solutions, Inc.	\$ (8,902)	\$ 18,316	\$ (5,528)	\$ (21,690)	(169.6)%	
Adjusted EBITDA (1)	\$ 98,772	\$ 76,430	\$ (422)	\$ 22,764	29.9 %	
Adjusted EBITDA margin (1)	13.3%	18.1%	(4.6)%	(4.3)%	N/A	

(1) Adjusted EBITDA and Adjusted EBITDA margin are non-GAAP financial measures. For a definition of Adjusted EBITDA and Adjusted EBITDA margin, as well as a reconciliation to our most directly comparable financial measures calculated and presented in accordance with GAAP, please read “—Non-GAAP Measures” below.

Overview of Financial Results:

2018 was a transitional year as we moved from a private to a public company with the IPO in June 2018. We continued to grow our operations with increased work in the nuclear power maintenance industry and improved our byproduct sales offerings with the acquisition of SCB in March 2018. Additionally, we resolved a significant legal matter that existed prior to the IPO. Additional information regarding the results of operations follows below.

Revenues. Revenues increased \$310.1 million, or 72.1%, for the year ended December 31, 2018 to \$740.5 million as compared to \$430.4 million for the year ended December 31, 2017. The increase in revenues by segment was as follows:

Environmental Solutions Revenues. Environmental Solutions segment revenues increased \$103.1 million, or 42.9%, for the year ended December 31, 2018 to \$343.1 million as compared to \$240.0 million for the year ended December 31, 2017. The increase was primarily attributable to \$45.8 million of revenue associated with the addition of SCB that occurred in March 2018, in addition to a net overall increase in revenue from our remediation and compliance services offerings.

Maintenance and Technical Services Revenues. Maintenance and Technical Services segment revenues increased \$207.0 million, or 108.8%, for the year ended December 31, 2018 to \$397.4 million as compared to \$190.3 million for the year ended December 31, 2017. The increase was primarily attributable to the addition of our nuclear services offerings, which did not have a full year of operations in 2017.

Gross Profit. Gross profit increased \$13.6 million , or 16.1% , for the year ended December 31, 2018 to \$97.7 million as compared to \$84.2 million for the year ended December 31, 2017. As a percentage of revenue, gross profit was 13.2% and 19.6% for the years ended December 31, 2018 and 2017, respectively. The increase in gross profit by segment was as follows:

Environmental Solutions Gross Profit. Gross profit for our Environmental Solutions segment increased \$3.6 million , or 5.5% , for the year ended December 31, 2018 to \$69.5 million as compared to \$65.8 million for the year ended December 31, 2017. The increase was primarily attributable to the early completion of the Brickhaven ash remediation contract, which accelerated revenues and expenses related to this contract into 2018 and had a net positive impact on gross profit for the year. Under the terms of the Brickhaven contract, we expect to receive a significant cash payment from our customer in 2019, subject to the customer's final confirmation of the contract's early completion pursuant to the terms of the contract. Gross profit for the year ended December 31, 2018 also included \$5.4 million attributable to the addition of SCB.

Maintenance and Technical Services Gross Profit. Gross profit for our Maintenance and Technical Services segment increased \$9.9 million , or 54.3% , for the year ended December 31, 2018 to \$28.3 million as compared to \$18.3 million for the year ended December 31, 2017. The increase was primarily attributable to the addition of our nuclear services offerings, which did not have a full year of operations in 2017.

General and Administrative Expenses. General and administrative expenses increased \$25.1 million , or 48.6% , for the year ended December 31, 2018 to \$76.8 million as compared to \$51.7 million for the year ended December 31, 2017. The increase was primarily attributable to additional general and administrative expenses associated with our nuclear services offerings, including some non-recurring legal costs and accruals, as disclosed in our Adjusted EBITDA calculation included herein, in addition to increased expenses due to the addition of SCB.

Interest Expense, Net. Interest expense, net increased \$13.9 million , or 75.8% , for the year ended December 31, 2018 to \$32.2 million as compared to \$18.3 million for the year ended December 31, 2017. The increase was primarily attributable to \$12.5 million of costs incurred in conjunction with the refinance of our debt, consisting of a \$10.4 million write-off of non-cash debt issuance costs and a \$2.1 million prepayment penalty, in addition to an increase in our debt balances. We incurred \$4.1 million of costs associated with debt retirement in conjunction with BCP's investment in us, which was recorded during the period from January 1, 2017 through January 12, 2017.

Income from Equity Method Investment. Income from equity method investment increased \$1.5 million , or 178.6% , for the year ended December 31, 2018 to \$2.4 million as compared to \$0.9 million for the year ended December 31, 2017. The increase was primarily attributable to a price increase of the products sold through this joint venture and an increase in ash volumes generated by the utility and available for sale by us.

Net Income (Loss). Net income decreased \$21.4 million , or 142.7% , for the year ended December 31, 2018 to \$(6.4) million as compared to \$15.0 million for the year ended December 31, 2017. The decrease was primarily attributable to the increase in general and administrative expenses and interest expense, net, as disclosed above, offset by an income tax benefit of \$2.4 million and increases in revenues and gross profit as disclosed above.

Adjusted EBITDA and Adjusted EBITDA Margin. Adjusted EBITDA increased \$22.8 million , or 29.9% , for the year ended December 31, 2018 to \$98.8 million as compared to \$76.0 million for the year ended December 31, 2017, and our Adjusted EBITDA margin for the year ended December 31, 2018 was 13.3% , a decrease of 4.3% from 17.7% for the year ended December 31, 2017. The increase in Adjusted EBITDA was primarily attributable to the gross profit increase described above and the early completion of the Brickhaven contract.

For a definition of Adjusted EBITDA and the calculation of Adjusted EBITDA margin, as well as a reconciliation to the most directly comparable GAAP measure, see “—Non-GAAP Measures.”

Impact of Brickhaven Accelerated Depreciation. As noted above, the accelerated completion of the Brickhaven ash remediation contract was an important factor in our third and fourth quarter 2018 results. Brickhaven is very different from our other remediation projects because we purchased, developed and permitted the site several years ago, requiring significant capital investment by us. We did this in conjunction with a contract under which our customer would supply ash that we would store at the Brickhaven site and an adjacent mine owned by us, and we would be reimbursed for our costs, including a return, on a per-ton basis. Riverbend is a retired power plant that is one of two from which we sourced ash but the contract contemplated follow-on sites, aggregating to approximately 20 million tons of ash that would be supplied to these mines. Due to a change in North Carolina law, the customer determined that it would not supply ash to these mines once Riverbend was completed. Under the terms of the contract, we expect to receive a significant payment from the customer for unrecovered project development costs and expected site closing costs. The early completion of the Brickhaven contract affected our 2018 results in two significant ways:

- First, under percentage of completion accounting, we accelerated revenues and expenses (including depreciation and amortization) related to this project from 2019 into the third and fourth quarters of 2018. This had a net benefit

to gross profit but the benefit to Adjusted EBITDA was significantly greater because of the capital-intensive nature of the Brickhaven asset and the acceleration of depreciation. Of the \$49 million of depreciation expense related to property, plant, and equipment we recorded in 2018, approximately \$38 million was for Brickhaven and related equipment. Had we not had an early completion of the project, depreciation would have been significantly less. We also recorded \$15 million of amortization of a purchase option liability related to Brickhaven, which reduced general and administrative expenses. Net of this negative amortization, total depreciation and amortization associated with Brickhaven was \$23 million. Because the Riverbend project was completed in March 2019, the amount of revenues and depreciation associated with Brickhaven in 2019 will be substantially lower. Going forward, we expect that cost of goods sold will be more closely aligned with cash costs, consistent with the less capital-intensive nature that is typical of most of our remediation projects.

- Second, we had an increase of unbilled costs on our balance sheet, shown as costs and estimated earnings in excess of billings, or CIE, which reduced operating cash flow by \$79 million and thereby resulted in cash flow used in operations of \$13.6 million for the year ended December 31, 2018. As we expect to substantially recover this amount in 2019, these working capital balances will reverse and generate significant cash flow.

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

The table below sets forth our selected operating data for the years ended December 31, 2017 and 2016. The successor column below represents the combined financial information of Charah and Allied for the period from January 13, 2017 through December 31, 2017 and the predecessor columns below represent the financial information of Charah for the year ended December 31, 2016 and the period from January 1, 2017 through January 12, 2017, each as reflected in our audited financial statements included elsewhere herein. The dollar amount and percentage change information below reflects the difference between the combined results for the period from January 1, 2017 through January 12, 2017 and the period from January 13, 2017 through December 31, 2017, and the results for the year ended December 31, 2016.

	Successor	Predecessor		Change	
	Period from January 13, 2017 through December 31, 2017	Period from January 1, 2017 through January 12, 2017	For the year ended December 31, 2016		
(in thousands)					
Revenues:					
Environmental Solutions	\$ 232,581	\$ 7,451	\$ 218,051	\$ 21,981	10.1 %
Maintenance and Technical Services	188,658	1,679	47,017	143,320	304.8 %
Total revenue	421,239	9,130	265,068	165,301	62.4 %
Cost of sales	338,908	7,301	203,228	142,981	70.4 %
Gross profit:					
Environmental Solutions	64,433	1,412	51,282	14,563	28.4 %
Maintenance and Technical Services	17,898	417	10,558	7,757	73.5 %
Total gross profit	82,331	1,829	61,840	22,320	36.1 %
General and administrative expenses	48,495	3,170	35,170	16,495	46.9 %
Operating income (loss)	33,836	(1,341)	26,670	5,825	21.8 %
Interest expense, net	(14,146)	(4,181)	(6,244)	12,083	193.5 %
Income from equity method investment	816	48	2,703	(1,839)	(68.0)%
Income (loss) before taxes	20,506	(5,474)	23,129	(8,097)	(35.0)%
Income tax benefit	—	—	—	—	— %
Net income (loss)	20,506	(5,474)	23,129	(8,097)	(35.0)%
Less income attributable to non-controlling interest	(2,190)	(54)	(2,198)	(46)	(2.1)%
Net income (loss) attributable to Charah Solutions, Inc.	\$ 18,316	\$ (5,528)	\$ 20,931	\$ (8,143)	(38.9)%
Adjusted EBITDA (1)	\$ 76,430	\$ (422)	\$ 58,965	\$ 17,043	28.9 %
Adjusted EBITDA margin (1)	18.1%	(4.6)%	22.7%	(5.0)%	N/A

(1) Adjusted EBITDA and Adjusted EBITDA margin are non-GAAP financial measures. For a definition of Adjusted EBITDA and Adjusted EBITDA margin, as well as a reconciliation to the most directly comparable financial measures calculated and presented in accordance with GAAP, please read “—Non-GAAP Measures” below.

Revenues. Revenues increased \$165.3 million, or 62.4%, for the year ended December 31, 2017 to \$430.4 million as compared to \$265.1 million for the year ended December 31, 2016. The increase in revenues by segment was as follows:

Environmental Solutions Revenues. Environmental Solutions segment revenues increased \$22.0 million, or 10.1%, for the year ended December 31, 2017 to \$240.0 million as compared to \$218.1 million for the year ended December 31, 2016. The increase was primarily attributable to an increase in revenues from our remediation and compliance services offerings in the amount of \$26.3 million, partially offset by a reduction in revenues related to our non-acquired business line of \$5.0 million.

Maintenance and Technical Services Revenues. Maintenance and Technical Services segment revenues increased \$143.3 million, or 304.8%, for the year ended December 31, 2017 to \$190.3 million as compared to \$47.0 million for the year ended December 31, 2016. The increase was primarily attributable to the addition of our nuclear services offerings in the amount of \$136.2 million, in addition to the net increase in revenues on fossil services projects of \$7.1 million.

Gross Profit. Gross profit increased \$22.3 million, or 36.1%, for the year ended December 31, 2017 to \$84.2 million as compared to \$61.8 million for the year ended December 31, 2016. As a percentage of revenue, gross profit was 19.6% and 23.3% for the years ended December 31, 2017 and 2016, respectively. The increase in gross profit by segment was as follows:

Environmental Solutions Gross Profit. Gross profit for our Environmental Solutions segment increased \$14.6 million, or 28.4%, for the year ended December 31, 2017 to \$65.8 million as compared to \$51.3 million for the year ended December 31, 2016. The increase was primarily attributable to an increase in gross profit from our remediation and compliance services and

byproduct sales offerings in the amount of \$12.4 million and the elimination of negative gross profit associated with our non-acquired business line of \$2.4 million.

Maintenance and Technical Services Gross Profit. Gross profit for our Maintenance and Technical Services segment increased \$7.8 million, or 73.5%, for the year ended December 31, 2017 to \$18.3 million as compared to \$10.6 million for the year ended December 31, 2016. The increase was primarily attributable to the addition of our nuclear services offerings, in addition to the net increase in gross profit on fossil services projects.

General and Administrative Expenses . General and administrative expenses increased \$16.5 million, or 46.9%, for the year ended December 31, 2017 to \$51.7 million as compared to \$35.2 million for the year ended December 31, 2016. The increase was primarily attributable to \$18.9 million of additional expenses associated with our nuclear services offerings, including \$14.8 million of non-recurring and non-operating legal costs (including legal costs associated with outstanding litigation as disclosed in Note 18 to our audited financial statements included herein) and non-recurring startup costs, as disclosed in our Adjusted EBITDA calculation included herein.

Interest Expense, Net. Interest expense, net, increased \$12.1 million, or 193.5%, for the year ended December 31, 2017 to \$18.3 million as compared to \$6.2 million for the year ended December 31, 2016. We incurred \$4.1 million of costs associated with debt retirement in conjunction with BCP's investment, which was recorded during the period from January 1, 2017 through January 12, 2017. During the period from January 13, 2017 to December 31, 2017, \$6.1 million of non-cash debt issuance costs were expensed primarily due to the refinancing of our debt in October 2017. Additionally, we had higher interest costs associated with the increase in our debt balances in 2017.

Income from Equity Method Investment . Income from equity method investment decreased \$1.8 million, or 68.0%, for the year ended December 31, 2017 to \$0.9 million as compared to \$2.7 million for the year ended December 31, 2016. The decrease was primarily attributable to a reduction in ash volumes generated by the utility and available for sale by us.

Net Income (Loss). Net income decreased \$8.1 million, or 35.0%, for the year ended December 31, 2017 to \$15.0 million as compared to \$23.1 million for the year ended December 31, 2016. The decrease was primarily attributable to the increase in general and administrative expenses noted above, along with an increase in interest expense, net, offset by increases in revenues and gross profit associated with our projects, including the addition of our nuclear services offerings.

Adjusted EBITDA and Adjusted EBITDA Margin . Adjusted EBITDA increased \$17.0 million, or 28.9%, for the year ended December 31, 2017 to \$76.0 million as compared to \$59.0 million for the year ended December 31, 2016, and our Adjusted EBITDA margin for the year ended December 31, 2017 was 17.7%, a decrease of 5.0% from 22.7% for the year ended December 31, 2016.

For a definition of Adjusted EBITDA and the calculation of Adjusted EBITDA margin, as well as a reconciliation to the most directly comparable GAAP measure, see “—Non-GAAP Measures.”

Liquidity and Capital Resources

Capital Requirements and Sources of Liquidity

Our capital spending consists primarily of equipment costs associated with performance and completion of our contracts, including the replacement of dated and obsolete equipment, and the rollout of technology units that were acquired as part of our acquisition of SCB. However, the amount and timing of these capital expenditures is largely discretionary and within our control. We could choose to defer or increase a portion of these planned capital expenditures depending on a variety of factors, including, but not limited to, additional contracts awarded above and beyond our projections, and/or the increase or decrease in the useful life of our equipment. As we pursue growth, we monitor which capital resources, including equity and debt financings, are available to us to meet our future financial obligations, planned capital expenditure activities, and liquidity requirements. Based upon the current industry outlook, we believe that our cash flow from operations and borrowings under our Syndicated Credit Facility will be sufficient to fund our operations for at least the next 12 months. However, future cash flows are subject to a number of variables, including the ability to maintain existing contracts, to obtain new contracts, and to manage our operating expenses. The failure to achieve anticipated revenue and cash flows from operations could result in a reduction in future capital spending. We cannot assure you that operations and other needed capital will be available on acceptable terms or at all. In the event we make additional acquisitions and the amount of capital required is greater than the amount we have available for acquisitions at that time, we could be required to reduce the expected level of capital expenditures or to seek additional capital. We cannot assure you that needed capital will be available on acceptable terms or at all.

As of December 31, 2018, we had total liquidity of approximately \$50 million, comprised of \$6.9 million of cash on hand, \$18 million availability under the Revolving Loan and \$25 million of delayed draw availability under the Term Loan.

Cash Flows

Year Ended December 31, 2018 Compared to Year Ended December 31, 2017

The table below sets forth our cash flows for the years indicated. The successor columns below represent the consolidated financial information of Charah Solutions for the year ended December 31, 2018 and the combined financial information of Charah and Allied for the period from January 13, 2017 through December 31, 2017, and the predecessor column below represents the financial information of Charah for the period from January 1, 2017 through January 12, 2017, each as reflected in our audited financial statements included elsewhere herein.

	Successor		Predecessor		Change	
	For the year ended December 31, 2018	Period from January 13, 2017 through December 31, 2017	Period from January 1, 2017 through January 12, 2017		\$	%
(in thousands)						
Cash flows (used in) provided by operating activities	\$ (13,633)	\$ 57,792	\$ (4,418)	\$ (67,007)	(125.5)%	
Cash flows used in investing activities	\$ (40,368)	\$ (7,270)	\$ —	\$ (33,098)	455.3%	
Cash flows provided by (used in) financing activities	\$ 28,637	\$ (19,304)	\$ 4,463	\$ 43,478	(293.0)%	
Net change in cash	<u>\$ (25,364)</u>	<u>\$ 31,218</u>	<u>\$ 45</u>	<u>\$ (56,627)</u>	<u>(181.1)%</u>	

Operating Activities

Net cash provided by (used in) operating activities decreased \$67.0 million , or 125.5% , for the year ended December 31, 2018 to \$(13.6) million from \$53.4 million for the year ended December 31, 2017. The change in cash flows used in operating activities was primarily attributable to a \$21.4 million decrease in net income as explained above, a \$73.0 million decrease in cash resulting from the increase in costs and estimated earnings in excess of billings primarily related to Brickhaven, a \$30.4 million decrease in cash resulting from the decrease in billings in excess of costs and estimated earnings, and an \$8.4 million increase in accounts receivable, offset by an increase in depreciation and amortization of \$23.3 million, an increase in asset retirement obligation of \$24.8 million, an increase in accrued expenses of \$10.8 million, and an increase in accounts payable of \$8.0 million.

Investing Activities

Net cash used in investing activities increased \$33.1 million , or 455.3% , for the year ended December 31, 2018 to \$40.4 million from \$7.3 million for the year ended December 31, 2017. The change in cash flows used in investing activities was primarily attributable to the \$20.0 million used in 2018 for business acquisitions, net of cash received, and an increase in cash purchases of property and equipment.

Financing Activities

Net cash provided by (used in) financing activities increased \$43.5 million , or 293.0% , for the year ended December 31, 2018 to \$28.6 million from \$(14.8) million for the year ended December 31, 2017. The change in cash flows provided by financing activities was primarily attributable to the \$59.2 million in proceeds from the issuance of our common stock, which was used to make \$40.0 million of principal payments towards our term loan and also pay \$8.9 million of costs associated with the IPO. The change in cash flows provided by financing activities was also impacted by the refinancing of debt that occurred in the third quarter of 2018 and the first quarter of 2017, the acquisition of Charah by BCP in the first quarter of 2017, and a reduction in distributions to members in 2018.

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

The table below sets forth our cash flows for the years indicated. The successor column below represents the combined financial information of Charah and Allied for the period from January 13, 2017 through December 31, 2017 and the predecessor columns below represent the financial information of Charah for the period from January 1, 2017 through January 12, 2017 and the year ended December 31, 2016, each as reflected in our audited financial statements included elsewhere herein.

	Successor	Predecessor		Change	
	Period from January 13, 2017 through December 31, 2017	Period from January 1, 2017 through January 12, 2017	For the year ended December 31, 2016	\$	%
	(in thousands)				
Cash flows provided by (used in) operating activities	\$ 57,792	\$ (4,418)	\$ 8,351	\$ 45,023	539.1 %
Cash flows used in investing activities	\$ (7,270)	\$ 0	\$ (15,885)	\$ 8,615	54.2 %
Cash flows (used in) provided by financing activities	\$ (19,304)	\$ 4,463	\$ 7,298	\$ (22,139)	(303.4)%
Net change in cash	<u>\$ 31,218</u>	<u>\$ 45</u>	<u>\$ (236)</u>	<u>\$ 31,449</u>	<u>13,325.8 %</u>

Operating Activities

Net cash provided by operating activities increased \$45.0 million, or 539.1%, for the year ended December 31, 2017 to \$53.4 million from \$8.4 million for the year ended December 31, 2016. The change in cash flows used in operating activities was primarily attributable to the increase in net change in working capital of \$41.0 million and other items.

Investing Activities

Net cash used in investing activities decreased \$8.6 million, or 54.2%, for the year ended December 31, 2017 to \$7.3 million from \$15.9 million for the year ended December 31, 2016. The change in cash flows used in investing activities was attributable to the elimination of a restricted cash requirement associated with one of our projects, an increase in purchases of property and equipment, net of sales, and other investing cash outflows in 2016 that did not recur in 2017.

Financing Activities

Net cash provided by (used in) financing activities decreased \$22.1 million, or 303.4%, for the year ended December 31, 2017 to \$(14.8) million from \$7.3 million for the year ended December 31, 2016. The change in cash flows provided by financing activities was attributable to net proceeds from loan financings of \$114.0 million and capital contributions of \$10.0 million, offset by distributions to members of \$136.0 million.

Working Capital

Our working capital, which we define as total current assets less total current liabilities, totaled \$74.1 million and \$12.3 million at December 31, 2018 and 2017, respectively. This increase in working capital for the year ended December 31, 2018 was primarily the result of a \$78.8 million increase in costs and estimated earnings in excess of billings, a \$24.1 million increase in inventory, a \$14.5 million decrease in billings in excess of costs and estimated earnings, and a \$13.5 million increase in accounts receivable, offset by a \$25.4 million decrease in cash, a \$25.0 million increase in asset retirement obligation, a \$14.5 million increase in accrued expenses, a \$9.6 million increase in accounts payable, and a \$5.1 million increase in purchase option liability.

Our Debt Agreements

Revolving Credit Agreement

On October 25, 2017, we entered into a credit agreement (the “Revolving Credit Agreement”) by and among us, the lenders party thereto from time to time, and Regions Bank, as administrative agent. The Revolving Credit Agreement provided for a revolving credit facility (the “Credit Facility”), with a principal amount of up to \$45.0 million. The Credit Facility permitted extensions of credit up to the lesser of \$45.0 million and a borrowing base that was calculated by us based upon a percentage of the value of our eligible accounts receivable and eligible inventory, and approved by the administrative agent.

The interest rates per annum applicable to the loans under the Credit Facility were based on a fluctuating rate of interest measured by reference to, at our election, either (i) an adjusted London inter-bank offered rate (“LIBOR”) plus a 2.00% borrowing margin, or (ii) an alternative base rate plus a 1.00% borrowing margin. Customary fees were payable in respect of the Credit

Facility and included (i) commitment fees in an amount equal to 0.50% of the daily unused portions of the Credit Facility, and (ii) a 2.00% fee on outstanding letters of credit.

The Credit Facility contained various representations and warranties, and restrictive covenants. If excess availability under the Credit Facility fell below the greater of 15% of the loan cap amount or \$6.75 million, we were required to comply with a minimum fixed charge coverage ratio of 1.0 to 1.0. The Credit Facility did not otherwise contain financial maintenance covenants.

The Credit Facility had a scheduled maturity date of October 25, 2022; however, all amounts outstanding were repaid in September 2018 as a result of the refinancing discussed below.

Term Loan

On October 25, 2017, we entered into a credit agreement (the “Term Loan Credit Agreement”) by and among us, the lenders party thereto from time to time, and Credit Suisse AG, Cayman Islands Branch, as administrative agent, providing for a term loan (the “CS Term Loan”) with an initial commitment of \$250.0 million. The CS Term Loan provided that we had the right at any time to request incremental term loans up to the greater of (i) the excess, if any, of \$25.0 million over the aggregate amount of all incremental Credit Facility commitments and incremental term loan commitments previously utilized, and (ii) such other amount so long as such amount at such time could be incurred without causing the pro forma consolidated secured leverage ratio to exceed 3.25 to 1.00.

The interest rates per annum applicable to the loans under the CS Term Loan were based on a fluctuating rate of interest measured by reference to, at our election, either (i) LIBOR plus a 6.25% borrowing margin, or (ii) an alternative base rate plus a 5.25% borrowing margin.

The CS Term Loan contained various representations and warranties, and restrictive covenants. In addition, we were required to comply with a maximum senior secured net leverage ratio of 5.00 to 1.00 beginning March 31, 2018, decreasing to 4.50 to 1.00 as of March 31, 2019, and further decreasing to 4.00 to 1.00 as of March 31, 2020 and thereafter.

The principal amount of the CS Term Loan amortized at a rate of 7.5% per annum with all remaining outstanding amounts under the CS Term Loan due on the CS Term Loan maturity date. We received net proceeds from the IPO of \$59.2 million prior to deducting offering expenses. We used these net proceeds to pay offering expenses and to pay off \$40.0 million of the borrowings outstanding under the CS Term Loan, which would otherwise have been required through June 2020.

The CS Term Loan had a maturity date of October 25, 2024; however, all amounts outstanding were repaid in September 2018 as a result of the refinancing discussed above.

On September 21, 2018, we entered into the Syndicated Credit Facility, providing for a Term Loan with an initial commitment of \$205.0 million. The proceeds from the Term Loan were used to repay amounts outstanding under the CS Term Loan. As of December 31, 2018, we had \$202.4 million outstanding under the Term Loan.

Syndicated Credit Facility

On September 21, 2018, we entered into a credit agreement (the “Syndicated Credit Facility”) by and among us, the lenders party thereto from time to time, and Bank of America, N.A., as administrative agent. The Syndicated Credit Facility includes:

- A revolving loan not to exceed \$50.0 million (the “Revolving Loan”);
- A term loan of \$205.0 million (the “Term Loan”); and
- A commitment to loan up to a further \$25.0 million, which expires in March 2020.

The interest rates per annum applicable to the loans under the Syndicated Credit Facility are based on a fluctuating rate of interest measured by reference to, at our election, either (i) the LIBOR rate, or (ii) an alternative base rate. Various margins are added to the interest rate based upon our consolidated net leverage ratio. Customary fees are payable in respect of the Syndicated Credit Facility and include (i) commitment fees (ranging from 0.25% to 0.35% based upon our consolidated net leverage ratio) for unused portions of the Syndicated Credit Facility, and (ii) fees on outstanding letters of credit (ranging from 1.30% to 2.10% based upon our consolidated net leverage ratio). Amounts borrowed under the Syndicated Credit Facility are secured by essentially all assets of the Company.

The Syndicated Credit Facility contains various representations and warranties, and restrictive covenants that, among other things and subject to specified exceptions, restrict the ability of us and our restricted subsidiaries to grant liens, incur indebtedness (including guarantees), make investments, engage in mergers and acquisitions, make dispositions of assets, make restricted payments, or change the nature of our or our subsidiaries’ business. The Syndicated Credit Facility contains financial covenants related to the consolidated net leverage ratio and the fixed charge coverage ratio (of 1.20 to 1.00). We are required to comply with a consolidated net leverage ratio of 3.75 to 1.00 through March 30, 2020, decreasing to 3.50 to 1.00 as of March 31,

2020, further decreasing to 3.25 to 1.00 as of March 31, 2021, and finally decreasing to 3.00 to 1.00 as of March 31, 2022 and thereafter.

The Syndicated Credit Facility also contains certain affirmative covenants, including reporting requirements (such as delivery of financial statements, certificates, and notices of certain events), maintaining insurance, and providing additional guarantees and collateral in certain circumstances.

As of December 31, 2018, we were in compliance with all covenants related to the Syndicated Credit Facility.

The Syndicated Credit Facility includes customary events of default, including non-payment of principal, interest, or fees, violation of covenants, inaccuracy of representations or warranties, cross default to certain other material indebtedness, bankruptcy and insolvency events, invalidity or impairment of guarantees or security interests, material judgments, and change of control.

The Revolving Loan provides a principal amount of up to \$50.0 million reduced by outstanding letters of credit. As of December 31, 2018, \$19.8 million was outstanding on the Revolving Loan and \$12.5 million of letters of credit were outstanding.

Equipment Financing Facilities

We have entered into various equipment financing arrangements to finance the acquisition of certain equipment (the “Equipment Financing Facilities”). As of December 31, 2018, we had equipment lines of credit allowing borrowings of \$22.0 million, of which \$17.9 million was utilized. In addition, we had \$17.2 million of equipment notes outstanding as of December 31, 2018. Each of the Equipment Financing Facilities include non-financial covenants, and, as of December 31, 2018, we were in compliance with all such covenants.

Contractual and Commercial Commitments

The following table summarizes our contractual obligations and commercial commitments as of December 31, 2018:

	<u>Total</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>Thereafter</u>
	(in thousands)						
Term Loan	\$ 202,438	\$ 10,250	\$ 11,531	\$ 15,375	\$ 16,656	\$ 148,626	\$ —
Revolving Loan	19,799	—	—	—	—	19,799	—
Equipment Financing Facilities	35,104	13,018	4,977	5,251	5,539	4,288	2,031
Interest on Outstanding Loans	50,061	12,314	11,447	10,498	9,420	6,309	73
Operating Lease Obligations ⁽¹⁾	11,514	4,462	3,549	1,285	451	451	1,316
Total ⁽²⁾	\$ 318,916	\$ 40,044	\$ 31,504	\$ 32,409	\$ 32,066	\$ 179,473	\$ 3,420

(1) We lease equipment and office facilities under non-cancellable operating leases.

(2) Uncertain tax positions, the purchase option liability, contingent payments for acquisitions, and the asset retirement obligation are not included in the table above because timing of such payments is uncertain.

Non-GAAP Measures

Adjusted EBITDA

Adjusted EBITDA and Adjusted EBITDA margin are not financial measures determined in accordance with GAAP.

We define Adjusted EBITDA as net income (loss) before interest expense, net, income taxes, depreciation and amortization, equity-based compensation, elimination of certain legacy expenses, amounts from a non-acquired business line, non-recurring legal and startup costs, and transaction related expenses and other items. Adjusted EBITDA margin represents the ratio of Adjusted EBITDA to total revenues (which for the year ended December 31, 2016 was less revenues (\$5,045) of a non-acquired business line).

We believe Adjusted EBITDA and Adjusted EBITDA margin are useful performance measures because they allow for an effective evaluation of our operating performance when compared to our peers, without regard to our financing methods or capital structure. We exclude the items listed above from net income in arriving at Adjusted EBITDA because these amounts are either non-recurring or can vary substantially within our industry depending upon accounting methods and book values of assets, capital structures and the method by which the assets were acquired. Adjusted EBITDA should not be considered as an alternative to, or more meaningful than, net income determined in accordance with GAAP. Certain items excluded from Adjusted EBITDA

are significant components in understanding and assessing a company's financial performance, such as a company's cost of capital and tax structure, as well as the historic costs of depreciable assets, none of which are reflected in Adjusted EBITDA. Our presentation of Adjusted EBITDA should not be construed as an indication that our results will be unaffected by the items excluded from Adjusted EBITDA. Our computations of Adjusted EBITDA may not be identical to other similarly titled measures of other companies. We use Adjusted EBITDA margin to measure the success for our business in managing our cost base and improving profitability. The following tables present reconciliations of Adjusted EBITDA to net income (loss), our most directly comparable financial measure calculated and presented in accordance with GAAP, along with our Adjusted EBITDA margin.

The successor columns below represent the consolidated financial information of Charah Solutions for the year ended December 31, 2018 and the combined financial information of Charah and Allied for the period from January 13, 2017 through December 31, 2017, and the predecessor column below represents the financial information of Charah for the period from January 1, 2017 through January 12, 2017, each as reflected in our audited financial statements included elsewhere herein.

	Successor		Predecessor	
	For the year ended December 31, 2018	Period from January 13, 2017 through December 31, 2017	Period from January 1, 2017 through January 12, 2017	For the year ended December 31, 2016
	(in thousands)			
Net (loss) income attributable to Charah Solutions, Inc.	\$ (8,902)	\$ 18,316	\$ (5,528)	\$ 20,931
Interest expense, net	32,226	14,146	4,181	6,244
Income tax benefit	(2,427)	—	—	—
Depreciation and amortization	42,308	25,719	763	15,601
Elimination of certain non-recurring legal costs and expenses ⁽¹⁾	25,428	8,650	—	—
Elimination of certain non-recurring startup costs ⁽²⁾	1,480	6,167	—	—
Equity-based compensation	4,127	2,429	—	7,352
Elimination of legacy expenses ⁽³⁾	—	—	—	3,910
Non-acquired business line ⁽⁴⁾	—	—	—	3,768
Transaction related expenses and other items	4,532	1,003	162	1,159
Adjusted EBITDA	<u>\$ 98,772</u>	<u>\$ 76,430</u>	<u>\$ (422)</u>	<u>\$ 58,965</u>
Adjusted EBITDA margin ⁽⁵⁾	13.3%	18.1%	(4.6)%	22.7%

- (1) Represents non-recurring legal costs and expenses, which amounts are not representative of those that we historically incur in the ordinary course of our business.
- (2) Represents non-recurring startup costs associated with the startup of Allied and our nuclear services offerings, including the setup of financial operations systems and modules, pre-contract expenses to obtain initial contracts, and the hiring of operational staff. Because these costs are associated with the initial setup of the Allied business to initiate the operations involved in our nuclear services offerings, these costs are non-recurring in the normal course of our business.
- (3) Primary components include a change in charitable giving and other business expense policies associated with the BCP investment.
- (4) Non-acquired business line item adjusts for a legacy operation of Charah that was transferred to a stockholder of CEP Holdings, Inc. in January 2017 prior to the BCP investment.
- (5) Adjusted EBITDA margin is a non-GAAP financial measure that represents the ratio of Adjusted EBITDA to total revenues (which for the year ended December 31, 2016 were less revenues (\$5,045) of a non-acquired business line). We use Adjusted EBITDA margin to measure the success of our businesses in managing our cost base and improving profitability.

Critical Accounting Policies and Estimates

Our financial statements are prepared in accordance with GAAP. In connection with preparing our financial statements, we are required to make assumptions and estimates about future events, and apply judgments that affect the reported amounts of

assets, liabilities, revenue, expense, and the related disclosures. We base our assumptions, estimates, and judgments on historical experience, current trends and other factors that management believes to be relevant at the time we prepare our consolidated and combined financial statements. On a regular basis, management reviews the accounting policies, assumptions, estimates, and judgments to ensure that our consolidated combined financial statements are presented fairly and in accordance with GAAP. However, because future events and their effects cannot be determined with certainty, actual results could differ materially from our assumptions and estimates.

Our significant accounting policies are discussed in our audited historical consolidated and combined financial statements included elsewhere herein. We believe that the Company's primary critical accounting policy is its policy regarding accounting for long-term contracts. This policy is the most critical to fully understand and evaluate our reported financial results, and requires management's most difficult, subjective, or complex judgments, resulting from the need to make estimates about the effect of matters that are inherently uncertain.

Revenue and Cost Recognition on Construction Contracts

Accounting for construction contracts involves management judgment in estimating total contract revenues and costs. Contract revenues are largely determined by negotiated contract prices and quantities, modified by our assumptions regarding contract options, change orders, and price adjustment clauses (such as inflation or index-based clauses). Contract costs are incurred over a period of time, which can be several years, and the estimation of these costs requires management judgment. Cost estimates are largely based on negotiated or estimated purchase contract terms, historical performance trends, and other economic projections. Significant factors that influence these estimates include inflationary trends, technical and schedule risk, internal and subcontractor performance trends, business volume assumptions, and asset utilization. We have a process in which management reviews the progress and performance of our contracts. As part of this process, management reviews information, including any outstanding key contract matters, progress toward completion and the related project timeline, and the related changes in estimates of revenues and costs. Anticipated losses on long-term contracts are recognized when such losses become evident. In 2018, we had an accrual of \$0.7 million for anticipated losses on long-term contracts.

Revenues from contract claims are recognized when invoiced. Revenues from contract change orders are recognized when it is probable that the change order will be approved, the amount can be reasonably estimated, and the work has been completed.

The asset, "Costs and estimated earnings in excess of billings" represents revenues recognized in excess of amounts billed on uncompleted contracts. The liability, "Billings in excess of costs and estimated earnings" represents billings in excess of revenues recognized.

Asset Acquisition and Business Combinations

On January 13, 2017, Charah Management completed a transaction with BCP, a previously unrelated third party. The acquisition was accounted for under the acquisition method of accounting in accordance with Accounting Standards Codification ("ASC") Topic 805, *Business Combinations*. The purchase price was allocated to the assets acquired and liabilities assumed based on the estimated fair value at the date of acquisition. By the application of "push-down" accounting, Charah's assets, liabilities and equity were accordingly adjusted to fair value. The fair value estimates used reflect our best estimates for the highest and best use by market participants.

On March 31, 2018, Charah Management completed a transaction with SCB and affiliated entities, a previously unrelated third party, pursuant to which Charah acquired certain assets and liabilities of SCB. The acquisition was accounted for under the acquisition method of accounting in accordance with ASC Topic 805, *Business Combinations*. The purchase price was allocated to the assets acquired and liabilities assumed based on the estimated fair value at the date of acquisition. For more information on the business combination, see Note 2 to our consolidated and combined financial statements included elsewhere herein.

Determining the fair value of these items requires management's judgment and the utilization of independent valuation experts and involves the use of significant estimates and assumptions with respect to the timing and amounts of future cash inflows and outflows, discount rates, market prices, and asset lives, among other items. The judgments made in the determination of the estimated fair value assigned to the assets acquired, the liabilities assumed, as well as the estimated useful life of each asset and the duration of each liability, can materially impact the consolidated and combined financial statements in periods after acquisition, such as through depreciation and amortization.

Goodwill

Goodwill represents the cost of an acquisition purchase price over the fair value of acquired net assets, and such amounts are reported separately as goodwill on our consolidated and combined balance sheets. Our total goodwill resulted from the application of "push-down" accounting associated with BCP's January 2017 acquisition of a controlling equity position in Charah Management and the acquisition of certain assets and liabilities of SCB.

Goodwill is not amortized, but instead is tested for impairment at least annually, as of October 1st of each year, or more often if events or circumstances indicate that goodwill might be impaired. Goodwill is tested at the reporting unit level. We may elect to perform a qualitative assessment for our reporting units to determine whether it is more likely than not that the fair value of the reporting unit is greater than its carrying value. If a qualitative assessment is not performed, or if as a result of a qualitative assessment it is not more likely than not that the fair value of a reporting unit exceeds its carrying value, then the reporting unit's fair value is compared to its carrying value. Fair value is typically estimated using an income approach based on discounted cash flows. However, when appropriate, we may also use a market approach. The income approach is based on the long-term projected future cash flows of the reporting units. We discount the estimated cash flows to present value using a weighted average cost of capital that considers factors such as market assumptions, the timing of the cash flows, and the risks inherent in those cash flows. We believe that this approach is appropriate because it provides a fair value estimate based upon the reporting units' expected long-term performance considering the economic and market conditions that generally affect our business. The market approach estimates fair value by measuring the aggregate market value of publicly traded companies with similar characteristics to our business as a multiple of their reported earnings. We then apply that multiple to the reporting units' earnings to estimate their fair values. We believe that this approach may also be appropriate in certain circumstances because it provides a fair value estimate using valuation inputs from entities with operations and economic characteristics comparable to our reporting units. Fair value is computed using several factors, including projected future operating results, economic projections, anticipated future cash flows, comparable marketplace data, and the cost of capital. There are inherent uncertainties related to these factors and to our judgment in applying them in our analysis. However, we believe our methodology for estimating the fair value of our reporting units is reasonable. If the carrying value of a reporting unit exceeds its fair value, goodwill is written down to its implied fair value.

The Company performed quantitative assessments of its Environmental Solutions and Maintenance and Technical Services reporting units as of October 1, 2018. The Environmental Solutions and Maintenance and Technical Services reporting units' fair values, as calculated, were approximately 7.0% and 130.1%, respectively, greater than their book values as of October 1, 2018.

Recent Accounting Pronouncements

Please see Note 2, "Summary of Significant Accounting Policies—Recently Adopted Accounting Pronouncements" and "Summary of Significant Accounting Policies—Recently Issued Accounting Pronouncements" to our historical consolidated and combined financial statements as of and for the years ended December 31, 2018 and 2017, included elsewhere herein, for a discussion of recent accounting pronouncements.

Under the JOBS Act, we meet the definition of an "emerging growth company," which allows us to have an extended transition period for complying with new or revised accounting standards pursuant to Section 107(b) of the JOBS Act. We intend to take advantage of all of the reduced reporting requirements and exemptions, including the longer phase-in periods for the adoption of new or revised financial accounting standards under Section 107 of the JOBS Act until we are no longer an emerging growth company.

Item 7A. Quantitative and Qualitative Disclosure About Market Risks

Market risk is the risk of loss arising from adverse changes in market rates and prices. Currently, our market risks relate to potential changes in the fair value of our long-term debt due to fluctuations in applicable market interest rates. Going forward our market risk exposure generally will be limited to those risks that arise in the normal course of business, as we do not engage in speculative, non-operating transactions, nor do we utilize financial instruments or derivative instruments for trading purposes.

Interest Rate Risk

As of December 31, 2018, we had \$202.4 million of debt outstanding under the Term Loan and \$19.8 million of outstanding borrowings under the Revolving Loan, with a weighted average interest rate of 5.1%. A 1.0% increase or decrease in the weighted average interest rate would increase or decrease interest expense by approximately \$2.2 million per year assuming a consistent debt balance. We currently have an interest rate cap in place with respect to outstanding indebtedness under our Term Loan that provides a ceiling on three-month LIBOR at 2.5% for a notional amount of \$150.0 million.

Credit Risk

While we are exposed to credit risk in the event of non-performance by counterparties, the majority of our customers are investment grade companies and we do not anticipate non-performance. We mitigate the associated credit risk by performing credit evaluations and monitoring the payment patterns of our customers.

Off-Balance Sheet Arrangements

We currently have no material off-balance sheet arrangements.

Item 8. Financial Statements and Supplementary Data

Our consolidated and combined financial statements and the related notes begin on page F-1 herein.

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

None.

Item 9A. Controls and Procedures***Evaluation of Disclosure Controls and Procedures***

Our management, with the participation of our principal executive officer and principal financial officer, has evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act as of the end of the period covered by this Annual Report. Based on such evaluation, our principal executive officer and principal financial officer have concluded that as of such date, our disclosure controls and procedures were effective.

Management's Annual Report on Internal Control Over Financial Reporting

This Annual Report does not include a report on management's assessment regarding internal control over financial reporting or an attestation report of our independent registered public accounting firm due to a transition period established by SEC rules for newly public companies.

As previously reported in the registration statement on Form S-1 for our IPO, management and our independent registered public accounting firm identified material weaknesses in internal control related to the misapplication of GAAP in accounting for our deferred stock plan in effect in 2016 and ineffective controls over the financial statement close and reporting processes.

The deferred stock plan was terminated in December 2016 and there are no remaining internal control considerations related to this plan. To remediate the material weakness related to the ineffective controls described above, management revised and enhanced relevant controls and procedures to confirm the completeness and accuracy of information used in these processes and engaged consultants to assist management in determining and evaluating new accounting standards. During 2018, management successfully completed testing necessary to conclude the material weaknesses had been remediated.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting identified in connection with the evaluation required by Rules 13a-15(d) and 15d-15(e) of the Exchange Act that occurred during the quarter ended December 31, 2018 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

Charah Solutions will file with the SEC a definitive proxy statement for its 2019 Annual Meeting of Stockholders (the “Proxy Statement”) no later than 120 days after the close of its fiscal year ended December 31, 2018. The information required by this item with respect to our executive officers appears in Part I of this Annual Report under the heading “Executive Officers of the Registrant.” The other information required by this item is furnished by incorporation by reference to the information under the headings “Election of Directors,” “Corporate Governance,” and “Section 16(a) Beneficial Ownership Reporting Compliance” in the Proxy Statement.

We have adopted a Financial Code of Ethics (the “Code of Ethics”), which is intended to qualify as a “code of ethics” within the meaning of Item 406 of Regulation S-K of the Exchange Act. The Code of Ethics applies to our principal executive officer, principal financial officer, principal accounting officer or controller, and persons performing similar functions. The Code of Ethics is available on our website at www.charah.com.

We will disclose information pertaining to any amendment to, or waiver from, the provisions of the Code of Ethics that apply to our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions and that relate to any element of the Code of Ethics enumerated in the SEC rules and regulations by posting this information on our website, www.charah.com. The information contained on our website or available by hyperlink from our website is not a part of this Annual Report and is not incorporated into this Annual Report or any other documents we file with, or furnish to, the SEC.

Item 11. Executive Compensation

The information required by this item is furnished by incorporation by reference to the information under the headings “Director Compensation,” “Executive Compensation,” “Compensation Committee Interlocks and Insider Participation,” and “Compensation Committee Report” in the Proxy Statement.

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

The information required by this item is furnished by incorporation by reference to the information under the headings “Security Ownership of Certain Beneficial Owners and Management” and “Equity Compensation Plan Information” in the Proxy Statement.

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

The information required by this item is furnished by incorporation by reference to the information under the headings “Corporate Governance—Director Independence,” “Corporate Governance—Policy for Review of Related Party Transactions,” and “Corporate Governance—Related Party Transactions” in the Proxy Statement.

Item 14. Principal Accountant Fees and Services

The information required by this item is furnished by incorporation by reference to the information under the heading “Ratification of the Appointment of Independent Registered Public Accounting Firm” in the Proxy Statement.

PART IV

Item 15. Exhibits and Financial Statement Schedules

1. Financial Statements

<u>Description</u>	<u>Page Number</u>
<u>Report of Independent Registered Public Accounting Firm</u>	<u>F-1</u>
<u>Consolidated & Combined Balance Sheets as of December 31, 2018 and December 31, 2017</u>	<u>F-2</u>
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2. Financial Statement Schedules

All financial statement schedules for which provision is made in the applicable accounting regulations of the SEC are not required under the related instructions, are inapplicable, or the required information has been provided in the consolidated and combined financial statements or notes thereto.

3. Listing of Exhibits

INDEX TO EXHIBITS

<u>Exhibit Number</u>	<u>Description</u>
<u>2.1††</u>	Master Reorganization Agreement, dated June 13, 2018, by and among Charah Solutions, Inc. and the other parties named therein (incorporated by reference to Exhibit 2.1 to the Current Report on Form 8-K filed on June 19, 2018 (File No. 001-38523)).
<u>3.1</u>	Amended and Restated Certificate of Incorporation of Charah Solutions, Inc. (incorporated by reference to Exhibit 3.1 to the Current Report on Form 8-K filed June 22, 2018 (File No. 001-38523)).
<u>3.2</u>	Amended and Restated Bylaws of Charah Solutions, Inc. (incorporated by reference to Exhibit 3.2 to the Current Report on Form 8-K filed June 22, 2018 (File No. 001-38523)).
<u>4.1</u>	Registration Rights Agreement (incorporated by reference to Exhibit 4.1 to the Current Report on Form 8-K filed June 22, 2018 (File No. 001-38523)).
<u>4.2</u>	Stockholders' Agreement (incorporated by reference to Exhibit 4.2 to the Current Report on Form 8-K filed June 22, 2018 (File No. 001-38523)).
<u>10.1</u>	Credit Agreement, dated as of September 21, 2018, by and among Charah Solutions, Inc., certain of the Charah Solutions, Inc.'s subsidiaries, as guarantors, Bank of America, N.A., as administrative agent, swingline lender and letter of credit issuer, and the other lenders party thereto (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed September 25, 2018 (File No. 001-38523)).
<u>10.2</u>	Information Rights Agreement, dated October 9, 2018, by and between Charah Solutions, Inc. and Bernhard Capital Partners Management, LP (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed October 10, 2018 (File No. 001-38523)).
<u>10.3</u>	Mutual Release Agreement, effective as of December 13, 2018, by and between Charah Solutions, Inc. and Bernhard Capital Partners Management, LP (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed December 18, 2018 (File No.001-38523)).

Exhibit Number	Description
<u>10.4</u>	ABL Credit Agreement, dated October 25, 2017, by and among Charah, LLC, Allied Power Management, LLC and Allied Power Services, LLC, as borrowers, Charah Sole Member LLC and Allied Power Sole Member, LLC, as guarantors, the lenders party thereto from time to time, and Regions Bank, as administrative agent, collateral agent, swingline lender and letter of credit issuer (incorporated by reference to Exhibit 10.3 to the Registration Statement on Form S-1/A filed May 18, 2018 (File No. 333-225051)).
<u>10.5</u>	First Amendment to ABL Credit Agreement, dated December 8, 2017, by and among Charah, LLC, Allied Power Management, LLC and Allied Power Services, LLC, as borrowers, Charah Sole Member LLC and Allied Power Sole Member, LLC, as guarantors, the lenders party thereto from time to time, and Regions Bank, as administrative agent, collateral agent, swingline lender and letter of credit issuer (incorporated by reference to Exhibit 10.4 to the Registration Statement on Form S-1 filed May 18, 2018 (File No. 333-225051)).
<u>10.6</u>	Second Amendment to ABL Credit Agreement, dated April 27, 2018, by and among Charah, LLC, Allied Power Management, LLC and Allied Power Services, LLC, as borrowers, Charah Sole Member LLC and Allied Power Sole Member, LLC, as guarantors, the lenders party thereto from time to time, and Regions Bank, as administrative agent, collateral agent, swingline lender and letter of credit issuer (incorporated by reference to Exhibit 10.5 to the Registration Statement on Form S-1 filed May 18, 2018 (File No. 333-225051)).
<u>10.7</u>	Term Loan Credit Agreement, dated October 25, 2017, by and among Charah, LLC and Allied Power Management, LLC, as borrowers, Charah Sole Member LLC and Allied Power Sole Member, LLC, as guarantors, the lenders party thereto from time to time, and Credit Suisse AG, Cayman Islands Branch, as administrative agent and collateral agent (incorporated by reference to Exhibit 10.6 to the Registration Statement on Form S-1 filed May 18, 2018 (File No. 333-225051)).
<u>10.8</u>	First Amendment to Term Loan Credit Agreement, dated April 27, 2018, by and among Charah, LLC and Allied Power Management, LLC, as borrowers, Charah Sole Member LLC and Allied Power Sole Member, LLC, as guarantors, the lenders party thereto from time to time, and Credit Suisse AG, Cayman Islands Branch, as administrative agent and collateral agent (incorporated by reference to Exhibit 10.7 to the Registration Statement on Form S-1 filed May 18, 2018 (File No. 333-225051)).
<u>10.9†</u>	Charah Solutions, Inc. 2018 Omnibus Incentive Plan (incorporated by reference to Exhibit 4.4 to the Registration Statement on Form S-8 filed June 19, 2018 (File No. 333-225717)).
<u>10.10†</u>	Form of Restricted Stock Agreement under the Charah Solutions, Inc. 2018 Omnibus Incentive Plan (Time Based) (incorporated by reference to Exhibit 4.5 to the Registration Statement on Form S-8 filed June 19, 2018 (File No. 333-225717)).
<u>10.11†</u>	Form of Restricted Stock Agreement under the Charah Solutions, Inc. 2018 Omnibus Incentive Plan (Time and Performance Based) (incorporated by reference to Exhibit 4.6 to the Registration Statement on Form S-8 filed June 19, 2018 (File No. 333-225717)).
<u>10.12*†</u>	Form of Restricted Stock Unit Agreement under the Charah Solutions, Inc. 2018 Omnibus Plan.
<u>10.13†</u>	Letter Agreement between Charah Solutions, Inc. and Scott Sewell, dated January 23, 2019 (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed January 24, 2019 (File No.001-38523)).
<u>10.14†</u>	Employment Agreement with Charles E. Price, dated December 23, 2016 (incorporated by reference to Exhibit 10.8 to the Registration Statement on Form S-1 filed May 18, 2018 (File No. 333-225051)).
<u>10.15*†</u>	Amendment to Employment Agreement with Charles E. Price, dated May 11, 2017.
<u>10.16†</u>	Second Amendment to Employment Agreement with Charles E. Price, dated June 1, 2018 (incorporated by reference to Exhibit 10.11 to the Registration Statement on Form S-1/A filed June 4, 2018 (File No. 333-225051)).
<u>10.17†</u>	Employment Agreement with Bruce Kramer, dated January 13, 2017 (incorporated by reference to Exhibit 10.9 to the Registration Statement on Form S-1 filed May 18, 2018 (File No. 333-225051)).
<u>10.18†</u>	First Amendment to Employment Agreement with Bruce Kramer, dated June 1, 2018 (incorporated by reference to Exhibit 10.12 to the Registration Statement on Form S-1/A filed June 4, 2018 (File No. 333-225051)).
<u>10.19†</u>	Amended and Restated Employment Agreement with Dorsey “Ron” McCall, dated July 12, 2017 (incorporated by reference to Exhibit 10.10 to the Registration Statement on Form S-1 filed May 18, 2018 (File No. 333-225051)).
<u>10.20†</u>	First Amendment to Employment Agreement with Dorsey "Ron" McCall, dated June 5, 2018 (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed June 19, 2018 (File No. 001-38523)).
<u>10.21†</u>	Form of Indemnification Agreement (incorporated by reference to Exhibit 10.2 to the Registration Statement on Form S-1 filed May 18, 2018 (File No. 333-225051)).
<u>21.1*</u>	List of Subsidiaries of Charah Solutions, Inc.
<u>23.1*</u>	Consent of Deloitte & Touche LLP, Independent Registered Public Accounting Firm.

Exhibit Number	Description
<u>31.1</u> *	Certification of Principal Executive Officer pursuant to Rule 13a-14(a)/15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
<u>31.2</u> *	Certification of Principal Financial Officer pursuant to Rule 13a-14(a)/15d-14(a) as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
<u>32.1</u> **	Certification of Principal Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
<u>32.2</u> **	Certification of Principal Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.CAL*	XBRL Calculation Linkbase Document.
101.DEF*	XBRL Definition Linkbase Document.
101.INS*	XBRL Instance Document.
101.LAB*	XBRL Labels Linkbase Document.
101.PRE*	XBRL Presentation Linkbase Document.
101.SCH*	XBRL Schema Document.

* Filed herewith.

** Furnished herewith.

† Indicates a management contract or compensatory plan or arrangement.

†† Schedules and similar attachments have been omitted pursuant to Item 601(b)(2) of Regulation S-K. The registrant will furnish a supplemental copy of any omitted schedule or similar attachment to the SEC upon request.

Item 16. Form 10-K Summary

None.

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.

CHARAH SOLUTIONS, INC.

March 27, 2019

By: /s/ Scott A. Sewell
Name: Scott A. Sewell
Title: President, Chief Executive Officer and Director
(Principal Executive Officer)

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Scott A. Sewell, Nicholas W. Jacoby and Steven A. Brehm, or any of them, his or her attorney-in-fact, with full power of substitution and resubstitution for such person in any and all capacities, to sign any amendments to this report 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 either of said attorney-in-fact, or 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 date indicated:

<u>Signature</u>	<u>Title</u>
<u>/s/ Scott A. Sewell</u> Scott A. Sewell	President, Chief Executive Officer and Director (Principal Executive Officer)
<u>/s/ Nicholas W. Jacoby</u> Nicholas W. Jacoby	Interim Chief Financial Officer and Treasurer (Principal Financial Officer and Principal Accounting Officer)
<u>/s/ Claire Babineaux-Fontenot</u> Claire Babineaux-Fontenot	Director
<u>/s/ Jack A. Blossman, Jr.</u> Jack A. Blossman, Jr.	Director
<u>/s/ Mignon L. Clyburn</u> Mignon L. Clyburn	Director
<u>/s/ Brian K. Ferraioli</u> Brian K. Ferraioli	Director

Signature

Title

/s/ Robert C. Flexon
Robert C. Flexon

Director

/s/ Dorsey "Ron" McCall
Dorsey "Ron" McCall

Director

/s/ Mark Spender
Mark Spender

Director

/s/ Stephen R. Tritch
Stephen R. Tritch

Director

Date: March 27, 2019

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of
Charah Solutions, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated and combined balance sheets of Charah Solutions, Inc. and subsidiaries (the “Company”) as of December 31, 2018 (Successor) and 2017 (Successor), the related consolidated and combined statements of operations, stockholders’ and members’ equity, and cash flows for the year ended December 31, 2018 (Successor), the period January 13, 2017 through December 31, 2017 (Successor), the period January 1, 2017 through January 12, 2017 (Predecessor), and the year ended December 31, 2016 (Predecessor), and the related notes (collectively referred to as the “financial statements”). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 (Successor) and 2017 (Successor), and the results of its operations and its cash flows for the year ended December 31, 2018 (Successor), the period January 13, 2017 through December 31, 2017 (Successor), the period January 1, 2017 through January 12, 2017 (Predecessor), and the year ended December 31, 2016 (Predecessor), in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

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

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

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

/s/ Deloitte & Touche LLP

Louisville, Kentucky
March 27, 2019

We have served as the Company’s auditor since 2017.

CHARAH SOLUTIONS, INC.

Consolidated & Combined Balance Sheets
(dollars in thousands unless otherwise indicated)

	December 31, 2018	December 31, 2017
Assets		
Current assets:		
Cash	\$ 6,900	\$ 32,264
Trade accounts receivable	60,742	47,227
Receivable from affiliates	894	38
Costs and estimated earnings in excess of billings (“CIE”)	86,710	7,959
Inventory	25,797	1,666
Prepaid expenses and other current assets	5,133	4,644
Total current assets	186,176	93,798
Property and equipment:		
Plant, machinery and equipment	74,896	42,565
Structural fill site improvements	55,760	55,760
Vehicles	17,407	16,478
Office equipment	1,623	638
Buildings and leasehold improvements	262	240
Structural fill sites	7,110	7,110
Construction in progress	3,488	—
Total property and equipment	160,546	122,791
Less accumulated depreciation and amortization	(71,605)	(22,861)
Property and equipment, net	88,941	99,930
Other assets:		
Trade name, net	34,920	34,330
Customer relationship, net	63,898	71,032
Technology, net	1,853	—
Non-compete and other agreements, net	180	—
Other intangible assets, net	22	87
Goodwill	74,213	73,468
Other assets	891	—
Deferred tax asset	2,747	—
Equity method investments	5,060	5,006
Total assets	\$ 458,901	\$ 377,651

See notes to consolidated & combined financial statements (Continued)

	December 31, 2018	December 31, 2017
Liabilities and stockholders' and members' equity		
Current liabilities:		
Accounts payable	\$ 24,821	\$ 15,247
Billings in excess of costs and estimated earnings ("BIE")	1,352	15,882
Notes payable, current maturities	23,268	19,996
Accrued payroll and bonuses	15,480	16,036
Asset retirement obligation	14,704	1,072
Purchase option liability, current portion	10,017	5,061
Accrued expenses	22,473	7,959
Other liabilities	—	198
Total current liabilities	112,115	81,451
Long-term liabilities:		
Purchase option liability, less current portion	—	20,183
Contingent payments for acquisitions	11,214	—
Asset retirement obligation	11,361	—
Line of credit	19,799	—
Notes payable, less current maturities	211,022	227,698
Total liabilities	365,511	329,332
Commitments and contingencies (see Note 14)		
Stockholders' and members' equity		
Retained earnings	9,414	18,316
Common Stock - Charah Solutions, Inc.—\$0.01 par value; 200,000,000 shares authorized, 29,082,988 shares issued and outstanding as of December 31, 2018	291	—
Additional paid in capital - Charah Solutions, Inc.	82,880	—
Members' interest—Charah, LLC Series A, no par, 200,000,000 members' interest authorized (104,109,890 issued and outstanding) as of December 31, 2017. Series B, no par, 100,000,000 members' interest authorized (35,199,063 issued and outstanding) as of December 31, 2017	—	19,718
Members' interest—Allied Power Management, LLC, Series A, no par, 200,000,000 members' interest authorized (7,210,555 issued and outstanding) as of December 31, 2017. Series B, no par, 100,000,000 members' interest authorized (2,437,855 issued and outstanding) as of December 31, 2017	—	9,687
Total stockholders' and members' equity	92,585	47,721
Non-controlling interest	805	598
Total equity	93,390	48,319
Total liabilities and equity	\$ 458,901	\$ 377,651

See notes to consolidated & combined financial statements.

CHARAH SOLUTIONS, INC.

Consolidated & Combined Statements of Operations
(dollars in thousands except per share data)

	Successor		Predecessor	
	For the year ended December 31, 2018	Period from January 13, 2017 through December 31, 2017	Period from January 1, 2017 through January 12, 2017	For the year ended December 31, 2016
Revenue	\$ 740,462	\$ 421,239	\$ 9,130	\$ 265,068
Cost of sales	642,734	338,908	7,301	203,228
Gross profit	97,728	82,331	1,829	61,840
General and administrative expenses	76,752	48,495	3,170	35,170
Operating income (loss)	20,976	33,836	(1,341)	26,670
Interest expense, net	(32,226)	(14,146)	(4,181)	(6,244)
Income from equity method investment	2,407	816	48	2,703
(Loss) income before income taxes	(8,843)	20,506	(5,474)	23,129
Income tax benefit	(2,427)	—	—	—
Net (loss) income	(6,416)	20,506	(5,474)	23,129
Less income attributable to non- controlling interest	2,486	2,190	54	2,198
Net (loss) income attributable to Charah Solutions, Inc.	<u>\$ (8,902)</u>	<u>\$ 18,316</u>	<u>\$ (5,528)</u>	<u>\$ 20,931</u>
Basic (loss) earnings per share	\$ (0.33)	\$ 0.77	N/A	N/A
Diluted (loss) earnings per share	\$ (0.33)	\$ 0.75	N/A	N/A
Pro forma net (loss) income information (see Note 1) (unaudited):				
Net (loss) income attributable to Charah Solutions, Inc. before provision for income taxes (unaudited)	\$ (11,329)	\$ 18,316	\$ (5,528)	\$ 20,931
Pro forma provision for income taxes (unaudited)	(2,214)	6,960	(2,101)	7,954
Pro forma net (loss) income attributable to Charah Solutions, Inc. (unaudited)	<u>\$ (9,115)</u>	<u>\$ 11,356</u>	<u>\$ (3,427)</u>	<u>\$ 12,977</u>

See notes to consolidated & combined financial statements.

CHARAH SOLUTIONS, INC.

Consolidated & Combined Statements of Stockholders' and Members' Equity
(dollars in thousands unless otherwise indicated)

	Charah, LLC Members					Retained Earnings (Accumulated Deficit)	Total	Non-Controlling Interest	Total
	Voting Shares		Non-voting Shares						
	Number of Shares	Common Stock	Number of Shares	Common Stock	Additional Paid-In Capital				
Predecessor									
Balance, January 1, 2016	18,750	\$ 24	168,750	\$ 216	\$ 54	\$ (540)	\$ (246)	\$ 691	\$ 445
Net income	—	—	—	—	—	20,931	20,931	2,198	23,129
Issuance of stock	—	—	49,860	—	—	—	—	—	—
Repurchase of stock	—	—	(49,860)	—	—	—	—	—	—
Distributions	—	—	—	—	—	(25)	(25)	(2,203)	(2,228)
Balance, December 31, 2016	18,750	\$ 24	168,750	\$ 216	\$ 54	\$ 20,366	\$ 20,660	\$ 686	\$ 21,346
Net (loss) income	—	—	—	—	—	(5,528)	(5,528)	54	(5,474)
Distributions	—	—	—	—	—	(20,660)	(20,660)	—	(20,660)
Balance, January 12, 2017	<u>18,750</u>	<u>\$ 24</u>	<u>168,750</u>	<u>\$ 216</u>	<u>\$ 54</u>	<u>\$ (5,822)</u>	<u>\$ (5,528)</u>	<u>\$ 740</u>	<u>\$ (4,788)</u>

	Charah, LLC and Allied Power Management, LLC Combined				Retained Earnings	Total	Non-Controlling Interest	Total
	Charah, LLC Members' Interest	Allied Power Management, LLC Members' Interest	Total					
	Interest	Interest	Earnings	Total				
Successor								
Balance, January 13, 2017	\$ —	\$ —	\$ —	\$ —	\$ —	\$ —	\$ 740	\$ 740
Net income	—	—	—	18,316	18,316	2,190	20,506	
Issuance of original Series A member interests	116,418	—	—	—	116,418	—	116,418	
Issuance of original Series B member interests	36,643	—	—	—	36,643	—	36,643	
Issuance of Series A and B member interests	486	9,514	—	—	10,000	—	10,000	
Share-based compensation - Series A and B interests	1,945	135	—	—	2,080	—	2,080	
Share-based compensation - Series C profits interests	311	38	—	—	349	—	349	
Distributions	(136,085)	—	—	—	(136,085)	(2,332)	(138,417)	
Balance, December 31, 2017	<u>\$ 19,718</u>	<u>\$ 9,687</u>	<u>\$ 18,316</u>	<u>\$ 47,721</u>	<u>\$ 598</u>	<u>\$ 48,319</u>		

See notes to consolidated & combined financial statements.

CHARAH SOLUTIONS, INC.

Consolidated & Combined Statements of Stockholders' and Members' Equity
(dollars in thousands unless otherwise indicated)

	Charah Solutions, Inc.								
	Common Stock (Shares)	Common Stock (Amount)	Additional Paid In Capital	Charah, LLC Members' Interest	Allied Power Management, LLC Members' Interest	Retained Earnings	Total	Non-Controlling Interest	Total
Successor									
Balance, December 31, 2017	—	\$ —	\$ —	\$ 19,718	\$ 9,687	\$ 18,316	\$ 47,721	\$ 598	\$ 48,319
Net (loss) income	—	—	—	—	—	(8,902)	(8,902)	2,486	(6,416)
Share based compensation expense	—	—	—	214	—	—	214	—	214
Distributions	—	—	—	(686)	—	—	(686)	(2,279)	(2,965)
Conversion from members' interest to common stock	23,436,398	234	28,699	(19,246)	(9,687)	—	—	—	—
Issuance of shares	5,294,117	53	59,188	—	—	—	59,241	—	59,241
Share based common stock issued	372,169	4	(4)	—	—	—	—	—	—
Shares repurchased	(19,696)	—	—	—	—	—	—	—	—
Share based compensation expense	—	—	3,913	—	—	—	3,913	—	3,913
Deferred offering costs	—	—	(8,916)	—	—	—	(8,916)	—	(8,916)
Balance, December 31, 2018	<u>29,082,988</u>	<u>\$ 291</u>	<u>\$ 82,880</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 9,414</u>	<u>\$ 92,585</u>	<u>\$ 805</u>	<u>\$ 93,390</u>

See notes to consolidated & combined financial statements.

CHARAH SOLUTIONS, INC.

Consolidated & Combined Statements of Cash Flows
(dollars in thousands unless otherwise indicated)

	Successor		Predecessor	
	For the year ended December 31, 2018	Period from January 13, 2017 through December 31, 2017	Period from January 1 2017, through January 12, 2017	For the year ended December 31, 2016
Cash flows from operating activities:				
Net (loss) income	\$ (6,416)	\$ 20,506	\$ (5,474)	\$ 23,129
Adjustments to reconcile net (loss) income to net cash (used in) provided by operating activities:				
Depreciation and amortization	42,308	25,719	763	15,601
Amortization of debt issuance costs	11,631	4,150	—	664
Deferred income tax benefit	(2,995)	—	—	—
Loss on sale of assets	899	1,332	123	(1,798)
Income from equity method investment	(2,407)	(816)	(48)	(2,703)
Distributions received from equity investment	2,353	1,099	—	840
Non-cash share-based compensation	4,127	2,429	—	7,352
Payment related to deferred stock plan	—	(18,888)	—	(15,666)
(Gain) loss on interest rate swap	(1,089)	198	—	—
Interest accreted on contingent payments for acquisition	200	—	—	—
Increase (decrease) in cash due to changes in:				
Trade accounts receivable	(7,595)	4,814	(3,977)	(6,930)
Receivable from affiliates	(857)	195	—	(30)
Costs and estimated earnings in excess of billing	(78,752)	(7,959)	2,185	3,351
Inventory	(5,720)	(1,428)	278	(243)
Prepaid expenses and other current assets	(360)	(3,535)	71	(1,161)
Accounts payable	9,086	(3,296)	4,380	(15,365)
Billings in excess of costs and estimated earnings	(14,530)	15,882	6	1,352
Accrued payroll and bonuses	(556)	13,502	(318)	24
Asset retirement obligation	24,993	207	—	865
Accrued expenses and other liabilities	12,047	3,681	(2,407)	(931)
Net cash (used in) provided by operating activities	(13,633)	57,792	(4,418)	8,351
Cash flows from investing activities:				
Proceeds from the sale of equipment	1,682	2,062	—	4,730
Purchases of property and equipment	(22,036)	(12,690)	—	(10,065)
Investment in equity method investment	—	—	—	(3,378)
Payments for business acquisitions, net of cash received	(19,983)	—	—	—
Purchase of intangible assets	(31)	—	—	—
Decrease (increase) in restricted cash	—	3,358	—	(3,358)
Change in loan to related party, net	—	—	—	(3,814)
Net cash used in investing activities	(40,368)	(7,270)	—	(15,885)

	Successor		Predecessor	
	For the year ended December 31, 2018	Period from January 13, 2017 through December 31, 2017	Period from January 1 2017, through January 12, 2017	For the year ended December 31, 2016
Cash flows from financing activities:				
Net proceeds (payments) on line of credit	19,799	(43,800)	4,605	(3,301)
Proceeds from long-term debt	217,255	395,004	298	32,887
Principal payments on long-term debt	(255,777)	(242,090)	(440)	(20,060)
Payments of offering costs	(8,916)	—	—	—
Capital contribution to Allied Power Management, LLC	—	10,000	—	—
Issuance of common stock	59,241	—	—	—
Distributions to non-controlling interest	(2,279)	(2,333)	—	(2,203)
Distributions to members	(686)	(136,085)	—	(25)
Net cash provided by (used in) financing activities	28,637	(19,304)	4,463	7,298
Net (decrease) increase in cash	(25,364)	31,218	45	(236)
Cash, beginning of period	32,264	1,046	1,001	1,237
Cash, end of period	\$ 6,900	\$ 32,264	\$ 1,046	\$ 1,001
Supplemental disclosures of cash flow information:				
Cash paid during the year for interest	\$ 22,842	\$ 9,747	\$ 104	\$ 5,550
Cash paid during the year for taxes	\$ 3,334	\$ —	\$ —	\$ —

Non-cash investing and financing transactions

During the year ended December 31, 2018 (Successor), the Company purchased \$13,487 of equipment with seller-provided financing. During the period from January 13, 2017 through December 31, 2017 (Successor), Charah purchased \$5,898 of equipment with seller-provided financing.

During the period from January 1, 2017 through January 12, 2017 (Predecessor), the loan to related party of \$7,865, receivables from affiliates of \$883, and assets and liabilities related to the un-acquired business amounting to \$11,912 were distributed to CEP Holdings, Inc. as non-cash distributions.

At January 12, 2017, Charah, LLC reflected a non-cash transaction to re-value its assets and liabilities resulting from Charah Management LLC completing a transaction with Bernhard Capital Partners Management, LP (“BCP”), a previously unrelated third party, pursuant to which BCP acquired a 76% equity position of Charah Management LLC.

See notes to consolidated & combined financial statements.

CHARAH SOLUTIONS, INC.

Notes to Consolidated & Combined Financial Statements (dollars in thousands except per share and unit data)

1. Nature of Business and Basis of Presentation

Organization

During 2016, Charah, Inc. converted from an S corporation to a limited liability company and changed its name to Charah, LLC, a Delaware limited liability company (“Charah”). In December 2016, Charah became a wholly owned subsidiary of CEP Holdings, Inc. In January 2017, Charah became a wholly owned subsidiary of Charah Sole Member LLC, which itself is a wholly owned subsidiary of Charah Management LLC, a Delaware limited liability company (“Charah Management”). Charah Management was a wholly owned subsidiary of CEP Holdings, Inc.

As noted in Note 3, on January 13, 2017, Charah Management completed a transaction with Bernhard Capital Partners Management, LP (BCP), a previously unrelated third party, pursuant to which BCP acquired a 76% equity position of Charah Management. Our historical financial and operating information as of and for the year ended December 31, 2017 may not be comparable to the historical financial and operating information as of and for the year ended December 31, 2016.

Allied Power Management, LLC, a Delaware limited liability company (“Allied”), was formed and became a wholly owned subsidiary of Allied Power Holdings, LLC, a Delaware limited liability company (“Allied Power Holdings”), in May 2017. In July 2017, Allied became a wholly owned subsidiary of Allied Power Sole Member, LLC, which itself is a wholly owned subsidiary of Allied Power Holdings. Allied Power Holdings has been under common control with Charah Management since April 2017.

Charah Solutions, Inc. and subsidiaries (“Charah Solutions,” the “Company,” “we,” “us,” or “our”) was formed as a Delaware corporation in January 2018 and did not conduct any material business operations prior to the transactions described below other than certain activities related to its initial public offering, which was completed on June 18, 2018 (the “IPO”). Charah Solutions is a holding company, the sole material assets of which consist of membership interests in Charah Management and Allied Power Holdings. Through the Company’s ownership of Charah Management and Allied Power Holdings, the Company owns the outstanding equity interests in Charah and Allied, the subsidiaries through which Charah Solutions operates its businesses. The historical financial data presented herein as of December 31, 2018 and for periods after the June 18, 2018 corporate reorganization is that of Charah and Allied on a consolidated basis, and on a combined basis for periods prior to the June 18, 2018 corporate reorganization described below.

References to “Successor” relate to the financial position and results of operations of Charah Solutions on a consolidated and combined basis for the year ended December 31, 2018, Charah and Allied Power Management on a combined basis for the period including and after January 13, 2017, and references to “Predecessor” relate to the financial position and results of operations of Charah for the period through January 12, 2017.

Corporate Reorganization

On June 18, 2018, pursuant to the terms of the reorganization transactions completed in connection with the IPO, (i) (a) Charah Holdings LP, a Delaware limited partnership (“Charah Holdings”) owned by Bernhard Capital Partners Management, LP and certain related affiliates (“BCP”), contributed all of its interests in Charah Management and Allied Power Holdings to the Company in exchange for 17,514,745 shares of common stock, (b) CEP Holdings, Inc., a Delaware corporation owned by Charles E. Price and certain affiliates (“CEP Holdings”), contributed all of its interests in Charah Management and Allied Power Holdings to the Company in exchange for 4,605,465 shares of common stock, (c) Charah Management Holdings LLC, a Delaware limited liability company (“Charah Management Holdings”), contributed all of its interests in Charah Management and Allied Power Holdings to the Company in exchange for 907,113 shares of common stock, and (d) Allied Management Holdings, LLC, a Delaware limited liability company (“Allied Management Holdings”), contributed all of its interests in Charah Management and Allied Power Holdings to the Company in exchange for 409,075 shares of common stock, (ii) each of Charah Management Holdings and Allied Management Holdings distributed the shares of common stock received by them pursuant to clause (i) to their respective members in accordance with the respective terms of their limited liability company agreements and (iii) Charah Holdings distributed a portion of the shares of common stock it received in clause (i) above to certain direct and indirect blocker entities which ultimately merged into the Company, with the Company surviving, and affiliates of BCP received shares of common stock as consideration in the mergers.

Description of Business Operations

The Company provides mission-critical environmental and maintenance services to the power generation industry, enabling our customers to address challenges related to the remediation of ash ponds and landfills at open and closed power plant

CHARAH SOLUTIONS, INC.

Notes to Consolidated & Combined Financial Statements, continued (dollars in thousands except per share and unit data)

sites while continuously operating and providing necessary electric power to communities nationwide. Services offered include a suite of coal ash management and recycling, environmental remediation, and outage maintenance services. The Company also designs and implements solutions for complex environmental projects (such as coal ash pond closures) and facilitates coal ash recycling through byproduct sales and other beneficial use services. The Company has corporate offices in Kentucky, North Carolina, and Louisiana, and principally operates in the eastern and mid-central United States.

The accompanying consolidated and combined financial statements include the assets, liabilities, stockholders' equity, members' equity, and results of operations of the Company and its consolidated subsidiaries. Intercompany transactions and balances have been eliminated in consolidation.

Under the Jumpstart Our Business Startups Act (the "JOBS Act"), the Company meets the definition of an "emerging growth company," which allows the Company to have an extended transition period for complying with new or revised accounting standards pursuant to Section 107(b) of the JOBS Act. The Company intends to take advantage of all of the reduced reporting requirements and exemptions, including the longer phase-in periods for the adoption of new or revised financial accounting standards under Section 107 of the JOBS Act until the Company is no longer an emerging growth company. Among other things, we are not required to provide an auditor attestation report on the assessment of the internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act of 2002 and our disclosure obligations regarding executive compensation may be reduced. We may take advantage of these provisions until the last day of our fiscal year following the fifth anniversary of the IPO, or December 31, 2023. However, if certain events occur prior to the end of such five-year period, including if we become a "large accelerated filer," our annual gross revenue exceeds \$1.07 billion, or we issue more than \$1.0 billion of non-convertible debt in any three-year period, we will cease to be an emerging growth company prior to the end of such five-year period.

Unaudited Pro Forma Income Information

The unaudited pro forma income information gives effect to the corporate reorganization that occurred in connection with the closing of the IPO and the resulting legal entity of Charah Solutions, which is incorporated as a "C" Corporation. Prior to the corporate reorganization, the holding companies for Charah and Allied were limited liability companies and generally not subject to income taxes. The pro forma net income, therefore, includes an adjustment for income tax expense as if the holding companies for Charah and Allied had been "C" Corporations for all periods presented at an assumed combined federal, state and local effective income tax rate of 38% for the years ended December 31, 2017 and December 31, 2016, and 25% for the periods from January 1, 2018 through June 17, 2018, plus the actual tax expense for the period from June 18, 2018 through December 31, 2018, excluding the tax related to the corporate reorganization. These rates approximate the calculated statutory tax rate for each period. The tax rate in the preceding sentence for the years ended December 31, 2017 and December 31, 2016 does not reflect the impact of U.S. tax reform, which reduces the federal U.S. statutory tax rate from 35% to 21%, effective in 2018. The tax rates mentioned for the year ended December 31, 2018 reflect the impact of U.S. tax reform.

2. Summary of Significant Accounting Policies

Management's Use of Estimates

The preparation of consolidated and combined financial statements in conformity with accounting principles generally accepted in the United States of America ("GAAP") requires management to make estimates and assumptions, in particular estimates of legal reserves and costs to complete contracts in process, that affect the reported amounts in the consolidated and combined financial statements and accompanying notes. Actual results could differ from those estimates.

Balance Sheet Classification

The Company includes in current assets and liabilities retainage amounts payable, costs and estimated earnings in excess of billings, and billings in excess of costs and estimated earnings, which may extend beyond one year. A one-year time period is used as the basis for classifying all other assets and liabilities.

Cash

The Company maintains cash in bank deposit accounts which, at times, may exceed federally insured limits. The Company has not experienced any losses in such accounts. The Company believes it is not exposed to any significant credit risk on cash.

Restricted Cash

Charah was required to establish an escrow account for the post closure care costs related to the structural fill sites. The post closure care costs are also covered by financial guarantee and performance bonds. During the period from January 13, 2017

CHARAH SOLUTIONS, INC.

Notes to Consolidated & Combined Financial Statements, continued
(dollars in thousands except per share and unit data)

to December 31, 2017 (Successor), the requirement to maintain the escrow account was removed and the cash was returned to Charah.

Trade Accounts Receivable

Trade accounts receivable consist of amounts due from customers. An allowance for doubtful accounts is recorded to the extent it is probable that a portion of a particular account will not be collected. Management determines the allowance for doubtful accounts by evaluating individual customer receivables and considering a customer's financial condition, credit history, and the current economic conditions. Management believes all trade accounts receivable at December 31, 2018 (Successor) and December 31, 2017 (Successor) are fully collectible; therefore, the consolidated and combined financial statements do not include an allowance for doubtful accounts.

Trade accounts receivable balances are considered past due based upon contract or invoice terms and are charged off when deemed uncollectible. The Company does not charge interest on customer accounts and generally does not require collateral on sales and services during the normal course of business. The Company has the right to file liens on the owner's property with regards to certain construction contracts.

Inventory

Inventories, mainly comprising of ash for resale, are valued using the first-in, first-out ("FIFO") method. Inventories are stated at the lower of cost or net realizable value.

Property and Equipment

Property and equipment are stated at cost. Construction-in-progress represents costs incurred on the construction of assets that have not been completed or placed in service as of the end of the year. Depreciation and amortization is provided principally by the straight-line method over the estimated useful lives of the assets as follows:

Plant, machinery and equipment	2 - 15 years
Vehicles	2 - 10 years
Office equipment	2 - 10 years
Buildings and leasehold improvements	5 - 40 years

Repair and maintenance costs are expensed as incurred and expenditures for improvements are capitalized.

Structural Fill Sites

Cost Basis of Structural Fill Sites, Associated Site Improvement Costs, and Related Asset Retirement Obligation (ARO)

Prior to the BCP transaction (see Note 3), the acquisition cost of the structural fill sites was capitalized. As a result of the BCP transaction, the fair value of the site improvements related to the structural fill sites was recognized. The site improvement costs relate to items such as directly related engineering, liner material and installation, leachate collection systems, environmental monitoring equipment, on-site road and rail construction, and other infrastructure costs. The structural fill sites are a part of the Company's Environmental Solutions segment.

Following is a description of our asset retirement activities and our related accounting:

- Final capping and closure involves the installation of drainage and compacted soil layers and topsoil over areas where total airspace capacity has been consumed. Asset retirement obligations are recorded on a units-of-consumption basis as airspace is consumed (see Note 22). The liability is based on estimates of the discounted cash flows.
- Post closure involves the maintenance and monitoring of the structural fill sites. Generally, we are required to maintain and monitor the structural fill sites for a 30 -year period. These maintenance and monitoring costs are recorded as an asset retirement obligation as airspace is consumed over the life of the structural fill sites. Post-closure obligations are recorded over the life of the structural fill sites on a units-of-consumption basis as airspace is consumed (see Note 22), based on estimates of the discounted cash flows associated with performing post-closure activities.

CHARAH SOLUTIONS, INC.

Notes to Consolidated & Combined Financial Statements, continued (dollars in thousands except per share and unit data)

We develop our estimates of these obligations using input from our operations personnel. Our estimates are based on our interpretation of current requirements and proposed regulatory changes and are intended to approximate fair value. Absent quoted market prices, the estimate of fair value is based on the best available information, including the results of present value techniques. We use professional engineering judgment and estimated prices paid for similar work to determine the fair value of these obligations. We are required to recognize these obligations at market prices whether we plan to contract with third parties or perform the work ourselves. In those instances where we perform the work with internal resources, the incremental profit margin realized will be recognized as a component of operating income when the work is completed.

Once we have determined the final capping, closure, and post-closure costs, we inflate those costs to the expected time of payment and discount those expected future costs back to present value. During the year ended December 31, 2018 (Successor), the period from January 13, 2017 through December 31, 2017 (Successor), and the period from January 1, 2017 through January 12, 2017 (Predecessor), we inflated these costs in current dollars until the expected time of payment using an inflation rate of 3.0%. We discounted these costs to present value using the credit-adjusted, risk-free rate effective at the time an obligation is incurred, consistent with the expected cash flow approach. Any changes in expectations that result in an upward revision to the estimated cash flows are treated as a new liability and discounted at the current rate while downward revisions are discounted at the historical weighted average rate of the recorded obligation. As a result, the credit-adjusted, risk-free discount rate used to calculate the present value of an obligation is specific to each individual asset retirement obligation. The weighted average rate applicable to our long-term asset retirement obligations at December 31, 2018 was approximately 5.25%.

We record the estimated fair value of final capping, closure, and post-closure liabilities for our structural fill sites based on the capacity consumed through the current period. Because these obligations are measured at estimated fair value using present value techniques, changes in the estimated cost or timing of future final capping, closure, and post-closure activities could result in a material change in these liabilities, related assets, and results of operations. We assess the appropriateness of the estimates used to develop our recorded balances annually, or more often if conditions warrant.

Changes in inflation rates or the estimated costs, timing, or extent of future final capping, closure, and post-closure activities typically result in both (i) a current adjustment to the recorded liability and structural fill site asset, and (ii) a change in liability and asset amounts to be recorded prospectively over the remaining permitted airspace. Any changes related to the capitalized and future cost of the structural fill assets are then recognized in accordance with our amortization policy, which would generally result in amortization expense being recognized prospectively over the remaining capacity of the permitted airspace. Changes in such estimates associated with airspace that has been fully utilized results in an adjustment to the recorded liability and landfill assets with an immediate corresponding adjustment to landfill airspace amortization expense.

Depreciation of Structural Fill Sites and Site Improvements

The depreciable basis of a structural fill site includes amounts previously expended and capitalized and projected asset retirement costs related to final capping, closure, and post-closure activities.

The value of the structural fill sites to the Company diminishes in direct correlation to the amount of airspace used for ash deposits. Depreciation is recorded on a units-of-consumption basis, applying expense as a rate per ton. The rate per ton is calculated by dividing the depreciable basis of the structural fill site by the number of tons expected to be placed into the structural fill sites. Our engineers, in consultation with third-party engineering consultants and surveyors, are responsible for determining remaining permitted airspace at our structural fill sites. The remaining permitted airspace is determined by comparing the existing structural fill sites topography to the expected final structural fill sites topography.

Once the remaining permitted airspace is determined in cubic yards, an airspace utilization factor (“AUF”) is established to calculate the remaining permitted capacity in tons. The AUF is established using the measured density obtained from previous surveys and is then adjusted to account for current and future expected compaction rates. The initial selection of the AUF is subject to a subsequent multi-level review by our engineering group, and the AUF used is reviewed on a periodic basis and revised as necessary.

After determining the costs and remaining permitted capacity at each of our structural fill sites, we determine the per ton rates that will be expensed as ash is received and deposited at the structural fill sites by dividing the costs by the corresponding number of tons. These rates per ton are updated annually, or more often, as significant facts change.

It is possible that actual results, including the amount of costs incurred, the timing of final capping, closure, and post-closure activities, or our airspace utilization, could ultimately turn out to be significantly different from our estimates and assumptions. To the extent that such estimates, or related assumptions, prove to be significantly different than actual results, lower

CHARAH SOLUTIONS, INC.

Notes to Consolidated & Combined Financial Statements, continued (dollars in thousands except per share and unit data)

profitability may be experienced due to higher depreciation rates or higher expenses; or higher profitability may result if the opposite occurs. Most significantly, if it is determined that expansion capacity should no longer be considered in calculating the recoverability of a structural fill site asset, we may be required to recognize an asset impairment or to incur significantly higher depreciation expense.

Depreciation for the structural fill sites and site improvements for the year ended December 31, 2018 (Successor), the period from January 13, 2017 through December 31, 2017 (Successor), the period from January 1, 2017 through January 12, 2017 (Predecessor), and the year ended December 31, 2016 (Predecessor) was \$33,956 , \$17,603 , \$90 , and \$2,182 , respectively.

The remaining capacity of the active structural fill site at December 31, 2018 (Successor), December 31, 2017 (Successor), January 12, 2017 (Predecessor), and December 31, 2016 (Predecessor), was 5.0 million tons (41%), 6.2 million tons (52%), 9.2 million tons (77%), and 9.3 million tons (78%), respectively. The Company also owns an additional structural fill site with 8.0 million tons (100%) of capacity. The Company anticipates commencing closure of both sites in 2019 prior to the capacity being fully utilized.

Equity Method Investment

In January 2016, Charah organized a joint venture with an unrelated third party. Charah has a 50% interest in the joint venture, which is accounted for by the equity method.

Goodwill and Indefinite Lived Intangible Assets

Goodwill represents the excess purchase price over the estimated fair value of net assets acquired in a business combination. Our goodwill included in the consolidated and combined balance sheets as of December 31, 2018 (Successor) and 2017 (Successor) was \$74,213 and \$73,468 , respectively. Our intangible assets in the consolidated and combined balance sheets as of December 31, 2018 (Successor) and 2017 (Successor) include a \$34,330 trade name that is considered to have an indefinite life.

Goodwill and indefinite-lived intangible assets are not amortized, but instead are tested for impairment at least annually or more often if events or changes in circumstances indicate that the fair value of the asset may have decreased below its carrying value. Goodwill is tested at the reporting unit level. We may elect to perform a qualitative assessment to determine whether it is more likely than not that the fair value is greater than its carrying value. If a qualitative assessment is not performed, or if as a result of a qualitative assessment it is not more likely than not that the fair value exceeds its carrying value, then the fair value is compared to its carrying value. Fair value is typically estimated using an income approach based on discounted cash flows. However, when appropriate, we may also use a market approach. The income approach is based on the long-term projected future cash flows of the asset and reporting units. We discount the estimated cash flows to present value using a weighted average cost of capital that considers factors such as market assumptions, the timing of the cash flows, and the risks inherent in those cash flows. We believe that this approach is appropriate because it provides a fair value estimate based upon the reporting units' expected long-term performance considering the economic and market conditions that generally affect our business. The market approach estimates fair value by measuring the aggregate market value of publicly traded companies with similar characteristics to our business as a multiple of their reported earnings. We then apply that multiple to the reporting units' earnings to estimate their fair values. We believe that this approach may also be appropriate in certain circumstances because it provides a fair value estimate using valuation inputs from entities with operations and economic characteristics comparable to our reporting units. Fair value is computed using several factors, including projected future operating results, economic projections, anticipated future cash flows, comparable marketplace data, and the cost of capital. There are inherent uncertainties related to these factors and to our judgment in applying them in our analysis. However, we believe our methodology for estimating the fair value of our reporting units and the trade name is reasonable. If the carrying value exceeds its fair value, the asset is written down to its implied fair value.

We evaluate the indefinite-lived trade name each reporting period to determine whether events and circumstances continue to support an indefinite useful life.

During 2017, we performed our annual impairment tests as of October 31st and determined there was no impairment based upon a qualitative assessment. For the period from October 31, 2017 to December 31, 2017, there were no indicators of impairment.

During 2018, we changed the date of the annual impairment tests to October 1st. We performed a quantitative assessment and determined there was no impairment as of October 1, 2018. For the period from October 1, 2018 to December 31, 2018, there were no indicators of impairment. If actual future results are not consistent with our assumptions and estimates, we may be required to record impairment charges in the future.

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Notes to Consolidated & Combined Financial Statements, continued
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Definite Lived Intangible Assets

As of December 31, 2018 (Successor) and December 31, 2017 (Successor), definite lived intangible assets include customer relationships, technology, non-compete and other agreements, SCB trade name (Note 3), and a rail easement. These assets are amortized on a straight-line basis over their estimated useful lives as shown in the table below.

Definite Lived Intangible	Useful Life
Customer relationships	10 years
Technology	10 years
Non-compete agreement	2 years
SCB trade name	5 years
Rail easement	2 years

Purchase Option Liability

In the BCP transaction (see Note 3), Charah recorded the fair value of a bargain purchase liability for an option held by a customer and a third party for the structural fill sites. The purchase option liability is calculated as the difference between the estimated fair value of the structural fill sites at the date the option will most likely be exercised, and the option price to be paid by the customer or third party. The purchase options are exercisable after completion of work at the structural fill sites. The bargain purchase option is amortized over the structural fill sites' estimated useful lives. The following table reflects activity related to the bargain purchase liability:

Fair value of liability recognized at January 13, 2017 (Successor)	\$	29,883
Amortization in the period from January 13, 2017 to December 31, 2017 (Successor)		(4,639)
Balance, December 31, 2017 (Successor)		25,244
Amortization in the year ended December 31, 2018 (Successor)		(15,227)
Balance, December 31, 2018 (Successor)	\$	<u>10,017</u>

Fair Value Disclosure

Long-term debt bears interest at variable rates and book value approximates fair value, and is considered to be level 2 in the fair value hierarchy. The interest rate swap (within other liabilities at December 31, 2017 and within other assets at December 31, 2018) is considered to be level 2 in the fair value hierarchy. The Company did not have any recurring or non-recurring level 3 fair value measurements as of December 31, 2018 (Successor) or December 31, 2017 (Successor) other than the application of business combination accounting as described in Note 3 and the application of stock-based compensation accounting as described in Note 12. There have been no transfers between levels of the fair value hierarchy during the year ended December 31, 2018 (Successor), the period from January 13, 2017 through December 31, 2017 (Successor), or the period from January 1, 2017 through January 12, 2017 (Predecessor).

Revenue Recognition

Revenue from management contracts is recognized when the ash is hauled to the landfill, or the management services are provided. Revenue from the sales of ash is recognized when it is delivered to the customer. Certain contracts contain minimum quantity and quality standards that if not met will reduce the amount of revenue recognized. When applicable, revenue is recorded net of sales tax.

Revenue and Cost Recognition on Construction Contracts

During the year ended December 31, 2018 (Successor), the period from January 13, 2017 through December 31, 2017 (Successor), the period from January 1, 2017 through January 12, 2017 (Predecessor), and the year ended December 31, 2016 (Predecessor), we recognized approximately 34% , 45% , 51% and 66% , respectively, of our total revenues using the percentage-of-completion method. Accounting for these contracts involves management judgment in estimating total contract revenue and cost. Contract revenues are largely determined by negotiated contract prices and quantities, modified by our assumptions regarding contract options, change orders and price adjustment clauses (such as inflation or index-based clauses). Contract costs are incurred

CHARAH SOLUTIONS, INC.

Notes to Consolidated & Combined Financial Statements, continued (dollars in thousands except per share and unit data)

over a period of time, which can be several years, and the estimation of these costs requires management judgment. Cost estimates are largely based on negotiated or estimated purchase contract terms, historical performance trends and other economic projections. Significant factors that influence these estimates include inflationary trends, technical and schedule risk, internal and subcontractor performance trends, business volume assumptions, and asset utilization. We have processes during which management reviews the progress and performance of our contracts. As part of this process, management reviews information including any outstanding key contract matters, progress toward completion and the related project timeline, and the related changes in estimates of revenues and costs. Anticipated losses on long-term contracts are recognized when such losses become evident. As of December 31, 2018 (Successor) and December 31, 2017 (Successor), accruals for anticipated losses on long-term contracts were \$677 and \$0 , respectively.

Revenue from contract claims is recognized when invoiced. Revenue from contract change orders is recognized when it is probable that the change order will be approved, the amount can be reasonably estimated, and the work has been completed.

The asset, "Costs and estimated earnings in excess of billings" represents revenue recognized in excess of amounts billed on uncompleted contracts. The liability, "Billings in excess of costs and estimated earnings" represents billings in excess of revenue recognized. As a result of the BCP transaction and the push down of fair values to Charah, the costs and estimated earnings in excess of billings and billings in excess of costs and estimated earnings amounts at January 13, 2017 were reduced to \$0 .

Freight Costs

Freight costs charged to customers are included in revenue. Costs incurred by the Company for freight are included in cost of sales.

Income Taxes

Charah Solutions is a "C" Corporation under the Internal Revenue Code of 1986, as amended (the "Code"), and, as a result, is subject to U.S. federal, state and local income taxes. In connection with the IPO, predecessor flow-through entities for income tax purposes were contributed to the Company by their owners and became indirect subsidiaries of the Company. Prior to the contribution to the Company and its conversion to a taxable corporation, the predecessor entities passed through their taxable income to their owners for U.S. federal, state, and local income tax purposes, and thus these entities were not subject to such income taxes, except for franchise tax at the state level (at less than 1% of modified pre-tax earnings). Accordingly, the financial data attributable to the predecessor entities prior to the contribution on June 18, 2018 contains no provision for U.S. federal income taxes or income taxes in any state or locality, other than franchise taxes.

As of June 18, 2018, the Company became subject to U.S. federal, state and local income taxes, and as a result of the conversion, and in accordance with Accounting Standards Codification ("ASC") Topic 740, *Income Taxes* , the Company established a beginning net deferred tax liability of \$1.5 million and recognized a corresponding amount of income tax expense.

Income taxes are accounted for in accordance with ASC Topic 740. Income tax expense, or benefit, is calculated using the asset and liability method under which deferred tax assets and liabilities are recorded based on the difference between the financial statement and tax basis of assets and liabilities using enacted tax rates in effect for the year in which the differences are expected to reverse.

The Company assesses its deferred tax assets each quarter to determine whether the assets are more likely than not (probability of more than 50%) realizable under ASC Topic 740. The Company is required to record a valuation allowance for any portion of the tax assets that, based on the assessment, are not more likely than not realizable. The assessment considers, among other things, earnings in prior periods, forecasts of future taxable income, statutory carryforward periods, and tax planning strategies, to the extent feasible. The realization of deferred tax assets depends in large part on the generation of future taxable income during the periods in which the differences become deductible. The value of the deferred tax assets will also depend on applicable income tax rates. Judgment is required in determining the future tax consequences of events that have been recognized in the financial statements. Differences between anticipated and actual outcomes of these future tax consequences could have material impact on the financial statements. Changes in existing tax laws and tax rates also affect actual tax results and the valuation of deferred tax assets over time.

Business Segments

The Company operates in two business segments:

Environmental Solutions (ES) . The Environmental Solutions segment includes remediation and compliance services, as well as byproduct sales. Remediation and compliance services are associated with customers' need for multi-year environmental

CHARAH SOLUTIONS, INC.

Notes to Consolidated & Combined Financial Statements, continued (dollars in thousands except per share and unit data)

improvement and sustainability initiatives, whether driven by proactive engagement by power generation customers, by regulatory requirements or by consumer expectations and standards. Byproduct sales support both power generation customers' desire to profitably recycle recurring volumes of coal combustion residuals and ultimate end customers' need for high-quality, cost-effective raw material substitutes.

Maintenance and Technical Services (M&TS). The Maintenance and Technical Services segment includes fossil services and nuclear services. Fossil services are the recurring and mission-critical management of coal ash and the routine maintenance, outage services and staffing solutions for coal-fired power generation facilities. Nuclear services, which we market under the Allied Power brand name, include routine maintenance, outage services, facility maintenance, and staffing solutions for nuclear power generation facilities.

Stock/Share-Based Compensation Plans

Prior to December 31, 2016 (Predecessor), Charah had a Deferred Stock Plan (the "Plan") for the benefit of certain key employees. Charah accounted for the Plan as a liability-classified plan. The Plan was terminated in December 2016, all units became 100% vested and were converted into shares of non-voting common stock.

In 2017, Charah Management and Allied Power Management each issued certain Series C member interests to employees. Additionally, certain employees of Allied Power Management were granted Series B member interests in both Charah Management and Allied Power Management.

The unvested Series C Profits Interests at June 18, 2018 were canceled as a result of the corporate reorganization that occurred upon the closing of the IPO. In connection with the corporate reorganization that occurred upon the closing of the IPO, the Series C Profits Interests were replaced by shares that are subject to time-based vesting conditions, as well as performance vesting conditions. The Company has issued further shares under the Charah Solutions, Inc. 2018 Omnibus Incentive Plan subject to time-based and performance vesting conditions.

The Company accounts for its stock/share-based compensation plans as equity-classified plans, in accordance with the fair value recognition provisions of ASC Topic 718, Compensation-Stock Compensation. The Company utilizes the Black-Scholes model, which requires the input of subjective assumptions. These assumptions include estimating (i) the volatility of the common stock price over the expected term, (ii) the expected term, and (iii) expected dividends. Where the vesting of the stock is also based upon performance measures, management determines the likelihood of meeting such measures. Changes in the subjective assumptions can materially affect the estimate of fair value of stock-based compensation and consequently, the related amounts recognized on the consolidated and combined statements of operations.

Stock based compensation expense is recognized in general and administrative expenses.

Recently Adopted Accounting Pronouncements

In January 2017, the FASB issued ASU 2017-01, *Business Combinations (Topic 805): Clarifying the Definition of a Business*, which provides guidance to assist entities with evaluating whether transactions should be accounted for as acquisitions (or disposals) of assets or businesses. ASU 2017-01 requires entities to use a screen test to determine when an integrated set of assets and activities is not a business or if the integrated set of assets and activities needs to be further evaluated against the framework. The Company adopted the new standard effective January 1, 2018 on a prospective basis. The new standard did not have a material impact on our consolidated financial statements.

In May 2017, the FASB issued ASU 2017-09, *Compensation - Stock Compensation (Topic 718): Scope of Modification Accounting*, to provide guidance about which changes to the terms or conditions of a share-based payment award require an entity to apply modification accounting in ASC Topic 718. The Company adopted the new standard effective January 1, 2018 on a prospective basis. The new standard did not have a material impact on our consolidated financial statements.

Recently Issued Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) 2014-09, *Revenue from Contracts with Customers (Topic 606)*, requiring an entity to recognize the amount of revenue to which it expects to be entitled for the transfer of promised goods or services to customers. The core principle of ASC Topic 606 is to recognize revenues when a customer obtains control of a good or service, in an amount that reflects the consideration to which an entity is expected to be entitled for those goods or services. Additionally, the standard requires enhanced qualitative and quantitative disclosures regarding customer contracts. The standard will replace most existing revenue recognition guidance in GAAP when

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it becomes effective and permits the use of either a full retrospective or modified retrospective with cumulative effect transition method.

To assess the impact of the standard, we utilized internal resources to lead the implementation effort and supplemented them with external resources. The Company's adoption activities were performed over three phases: (i) assessment, (ii) design, and (iii) implementation using a cross-functional team that included accounting, operational and information technology personnel.

Based on our work to date, we believe we have identified all material contract types, revenues and costs that may be impacted by implementing ASC Topic 606. Generally, the Company believes the majority of its contracts will have similar performance obligations under ASC Topic 606 as compared with the units of account previously identified. We have identified certain contracts where the timing of revenue recognition will change under ASC Topic 606. Prior to the adoption of ASC Topic 606, revenue recorded for certain contracts with fluctuating rates per unit matched the amount that was billed to the customer. In accordance with the standard, for contracts with fluctuating rates per unit that are not directly related to changes in the Company's effort to perform under the contract, the Company will recognize revenue based on the stand-alone selling price per unit, calculated as the average rate per unit over the term of those contractual rates. This will at times create a contract asset or liability for the difference between the revenue recognized and the amount billable/billed to the customer.

Effective January 1, 2019, we adopted the requirements of ASC Topic 606 to all contracts using the modified retrospective with cumulative effect transition method. Accordingly, we will recognize the cumulative effect of initially applying the new revenue standard as an adjustment to the opening balance of retained earnings for the year ended December 31, 2019. The comparative information will not be restated and will continue to be reported under the accounting standards in effect for the comparative periods. Based upon our current assessment of the impact from the adoption of ASC Topic 606, we estimate a decrease of approximately \$300 to the opening balance of retained earnings as of January 1, 2019, with an associated decrease in the contract asset balance "costs and estimated earnings in excess of billings."

The Company is in the process of completing the necessary changes to our systems, processes and internal controls in order to meet the standard's revised reporting and disclosure requirements.

In February 2016, the FASB issued ASU 2016-02, *Leases (Topic 842)*, requiring all leases to be recognized on the balance sheet as a right-of-use asset and a lease liability, unless the lease is a short-term lease (generally a lease with a term of twelve months or less). At the commencement date of the lease, the Company will recognize: 1) a lease liability for Company's obligation to make payments under the lease agreement, measured on a discounted basis; and 2) a right-of-use asset that represents the Company's right to use, or control the use of, the specified asset for the lease term. The ASU originally required recognition and measurement of leases at the beginning of the earliest period presented using a modified retrospective transition method. In July 2018, the FASB issued ASU 2018-11, which provided an additional (and optional) transition method that permits application of the updated standard at the adoption date with recognition of a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption. The updated standard will be effective for the Company for the year ending December 31, 2020, with early adoption permitted. The Company has not yet selected a transition method and is currently evaluating the effect that the new standard will have on its consolidated financial statements.

In August 2016, the FASB issued ASU 2016-15, *Statement of Cash Flows: Classification of Certain Cash Receipts and Cash Payments*. This update addresses specific cash flow issues, including debt prepayment or debt extinguishment costs, contingent consideration payments made after a business combination, and proceeds from the settlement of insurance claims. The guidance is effective for the Company for the year ending December 31, 2019. The Company is currently evaluating the effect that the new standard will have on its consolidated financial statements.

In November 2016, the FASB issued ASU 2016-18, *Statement of Cash Flows (Topic 230)*. This ASU requires that a statement of cash flows explain the change during the period in the total of cash, cash equivalents, and amounts generally described as restricted cash or restricted cash equivalents. Upon adopting the ASU, amounts generally described as restricted cash and restricted cash equivalents will be included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. ASU 2016-18 will be effective for the Company for the year ending December 31, 2019, with early adoption permitted. The Company is currently evaluating the effect that the new standard will have on its consolidated financial statements.

In January 2017, the FASB issued ASU 2017-04, *Intangibles - Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment*. The ASU simplifies the measurement of goodwill impairment by eliminating the requirement that an entity compute the implied fair value of goodwill based on the fair values of its assets and liabilities to measure impairment. Instead, goodwill impairment will be measured as the difference between the fair value of the reporting unit and the carrying value of the

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reporting unit. The ASU also clarifies the treatment of the income tax effect of tax-deductible goodwill when measuring goodwill impairment loss. The Company will be required to adopt ASU 2017-04 as of January 1, 2020. ASU 2017-04 must be applied prospectively, with early adoption permitted. The Company is currently evaluating the effect that the new standard will have on its consolidated financial statements.

3. Business Combination

On January 13, 2017, Charah Management completed a transaction with BCP, a previously unrelated third party pursuant to which BCP acquired a 76% equity position in Charah Management. The acquisition was accounted for under the acquisition method of accounting in accordance with ASC Topic 805, *Business Combinations*. The purchase price was allocated to the assets acquired and liabilities assumed based on the estimated fair value at the date of acquisition, as summarized below.

By the application of “push-down” accounting, Charah’s assets and liabilities were accordingly adjusted to fair value.

Net working capital	\$	26,704
Net operating assets/liabilities		9,679
Property, plant and equipment		107,876
Rail easement		110
Purchase option liability		(29,883)
Trade name intangible assets		34,330
Customer relationship intangible assets		78,200
Goodwill		73,468
Total purchase price	\$	<u>300,484</u>

On March 30, 2018, Charah Management completed a transaction with SCB Materials International, Inc. and affiliated entities (“SCB”), a previously unrelated third party, pursuant to which Charah acquired certain assets and liabilities of SCB for a purchase price of \$35,000, with \$20,000 paid at closing and \$15,000 to be paid over time in conjunction with certain performance metrics. The contract also contained various mechanisms for a working capital true-up. The acquisition was accounted for under the acquisition method of accounting in accordance with ASC Topic 805, *Business Combinations*. As of December 31, 2018 (Successor), the allocation of purchase price for the acquisition is preliminary (as summarized below); fair value estimates of identifiable assets acquired and liabilities assumed are based on management’s estimates, judgments and assumptions and are subject to change until finalized. Goodwill, if any, will be allocated to the Environmental Solutions segment. The total amount of goodwill that is expected to be deductible for tax purposes is \$2,025.

In November 2018, the \$15,000 to be paid over time was reduced by \$3,300. The present value of the future payments, using a discount rate of 2.50% was determined to be \$11,014. The Company expects the future payments to occur in 2020 and beyond. The allocation of purchase price for the acquisition has been reflected in the table below.

Cash acquired	\$	17
Net working capital, excluding cash		21,255
Property, plant and equipment		5,300
Trade name intangible assets		694
Customer relationship intangible assets		742
Technology		1,972
Non-compete and other agreements		289
Goodwill		745
Total purchase price	\$	<u>31,014</u>

From the date of acquisition, revenue and earnings from the acquired business of \$45,828 and \$1,609, respectively, were included in the consolidated statement of operations for the year ended December 31, 2018 (Successor).

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The following unaudited information presents the pro forma consolidated revenue and net income for the periods indicated as if the acquisition had been included in the consolidated results of operations beginning January 1, 2017.

	Successor		Predecessor
	For the year ended December 31, 2018	Period from January 13, 2017 through December 31, 2017	Period from January 1, 2017 through January 12, 2017
Pro forma revenue	\$ 757,285	\$ 496,687	\$ 11,158
Pro forma net (loss) income attributable to Charah Solutions, Inc.	\$ (7,972)	\$ 18,877	\$ (5,447)

The above unaudited pro forma results have been calculated by combining the historical results of the Company and the acquired business as if the acquisition had occurred as of the beginning of the fiscal year prior to the acquisition date, and then adjusting the income tax provisions as if they had been calculated on the resulting consolidated and combined results. The pro forma results include estimates for additional depreciation related to the fair value of property, plant and equipment and intangible asset amortization.

The pro forma results reflect elimination of \$682 of direct acquisition costs that were incurred in the year ended December 31, 2018 (since for purposes of the pro forma presentation they have been reflected in 2017 instead of in 2018). For all periods presented, historical depreciation and amortization expense of the acquired business was adjusted to reflect the acquisition date fair value amounts of the related tangible and intangible assets. No other material pro forma adjustments were deemed necessary, either to conform the acquisition to the Company's accounting policies or for any other situation. The pro forma information is not necessarily indicative of the results that would have been achieved had the transactions occurred on the date indicated or that may be achieved in the future.

4. Equity Method Investments

The Company has an investment in a company that provides ash management and remarketing services to the electric utility industry. The Company accounts for its investment under the equity method of accounting because we have significant influence over the financial and operating policies of the company. The Company had a receivable due from the equity method investment of \$108 and \$61 at December 31, 2018 (Successor) and December 31, 2017 (Successor), respectively.

Summarized balance sheet information of our equity method investment entity as of:

	December 31, 2018	December 31, 2017
Current assets	\$ 2,619	\$ 1,946
Noncurrent assets	508	764
Total assets	\$ 3,127	\$ 2,710
Current liabilities	607	298
Equity of Charah	5,060	5,006
Equity of joint venture partner	(2,540)	(2,594)
Total liabilities and members' equity	\$ 3,127	\$ 2,710

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Summarized financial performance of our equity method investment entity is as follows:

	Successor		Predecessor	
	For the year ended December 31, 2018	Period from January 13, 2017 through December 31, 2017	Period from January 1 2017, through January 12, 2017	For the year ended December 31, 2016
Operating Data				
Revenues	\$ 11,076	\$ 7,573	\$ 300	\$ 11,384
Net income	\$ 4,813	\$ 1,632	\$ 96	\$ 5,405
The Company's share of net income	\$ 2,407	\$ 816	\$ 48	\$ 2,703

The following table reflects our proportional ownership activity in our investment account:

	Successor		Predecessor	
	For the year ended December 31, 2018	Period from January 13, 2017 through December 31, 2017	Period from January 1 2017, through January 12, 2017	For the year ended December 31, 2016
Opening balance	\$ 5,006	\$ 5,289	\$ 5,241	\$ —
Contributions	—	—	—	3,378
Distributions	(2,353)	(1,099)	—	(840)
Share of net income	2,407	816	48	2,703
Closing balance	<u>\$ 5,060</u>	<u>\$ 5,006</u>	<u>\$ 5,289</u>	<u>\$ 5,241</u>

5. Receivable from Affiliates and Related Party Transactions

The Company rents their corporate office, housing at work sites and a condo from Price Real Estate, LLC (“Price Real Estate”), an entity owned by a stockholder of the Company. The lease for the corporate office is a triple net lease through May 31, 2020, requiring monthly payments of \$37 as of December 31, 2018, increasing by the consumer price index each year on June 1. Other property is rented on a month-to-month basis. Rental expense of \$459, \$438, \$15 and \$638 was incurred during the year ended December 31, 2018 (Successor), for the period from January 13, 2017 through December 31, 2017 (Successor), for the period from January 1, 2017 through January 12, 2017 (Predecessor), and for the year ended December 31, 2016 (Predecessor), respectively. The Company had a receivable due from Price Real Estate of \$0 and \$0 at December 31, 2018 (Successor) and December 31, 2017 (Successor), respectively. The Company had a payable due to Price Real Estate of \$0 and \$0 at December 31, 2018 (Successor) and December 31, 2017 (Successor), respectively.

PriceFlight, LLC (“PriceFlight”), an entity owned by a stockholder of the Company, provides flight services to the Company. Expenses to PriceFlight for flight services amounted to \$1,208, \$685, \$21, and \$708 during the year ended December 31, 2018 (Successor), for the period from January 13, 2017 through December 31, 2017 (Successor), for the period from January 1, 2017 through January 12, 2017 (Predecessor), and for the year ended December 31, 2016 (Predecessor), respectively. The Company had a receivable due from PriceFlight of \$0 and \$0 at December 31, 2018 (Successor) and December 31, 2017 (Successor), respectively. The Company had a payable due to PriceFlight of \$77 and \$3 at December 31, 2018 (Successor) and December 31, 2017 (Successor), respectively.

Management determined that Price Real Estate and PriceFlight are variable interest entities. The Company has variable interests in them through the common ownership and contractual agreements discussed above. The Company is not considered to be the primary beneficiary. Management considers the likelihood to be remote that the Company will be required to make future funds available to Price Real Estate and PriceFlight. However, were the Company required to make funds available the maximum exposure to the Company would be any excess of the debt obligations of Price Real Estate and PriceFlight over the fair value of their respective assets.

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Brown & Root Industrial Services, LLC (“B&R”), an entity 50% owned by BCP, our majority stockholder, provides subcontracted construction services at one of our remediation and compliance service sites. Expenses to B&R for these services amounted to \$19,401 , \$98 , \$0 , and \$0 during the year ended December 31, 2018 (Successor), for the period from January 13, 2017 through December 31, 2017 (Successor), for the period from January 1, 2017 through January 12, 2017 (Predecessor), and for the year ended December 31, 2016 (Predecessor), respectively. The Company had no receivables outstanding from B&R at December 31, 2018 (Successor) and December 31, 2017 (Successor). The Company had payables due to B&R of \$4,919 and \$98 at December 31, 2018 (Successor) and December 31, 2017 (Successor), respectively.

6. Goodwill and Intangible Assets

The Company’s intangible assets consist of the following as of:

	December 31, 2018		December 31, 2017	
	Gross Carrying Amount	Accumulated Amortization	Gross Carrying Amount	Accumulated Amortization
Definite-lived intangibles				
Customer relationships	\$ 78,942	\$ (15,044)	\$ 78,200	\$ (7,168)
Rail easement	110	(88)	110	(23)
Technology	2,003	(150)	—	—
Non-compete and other agreements	289	(109)	—	—
SCB trade name	694	(104)	—	—
Total	\$ 82,038	\$ (15,495)	\$ 78,310	\$ (7,191)
Indefinite-lived intangibles				
Charah trade name	\$ 34,330		\$ 34,330	
Goodwill	74,213		73,468	
Total	\$ 108,543		\$ 107,798	

Amortization expense was \$8,304 , \$7,191 , \$0 , and \$1 for the year ended December 31, 2018 (Successor), the period from January 13, 2017 through December 31, 2017 (Successor), the period from January 1, 2017 through January 12, 2017 (Predecessor), and the year ended December 31, 2016 (Predecessor) respectively.

As of December 31, 2018, total estimated amortization expense of the Company’s definite-lived intangible assets for each of the next five years and thereafter is as follows:

For the Year Ending December 31,	
2019	\$ 8,399
2020	8,269
2021	8,233
2022	8,233
2023	8,129
Thereafter	25,280
Total	\$ 66,543

7. Credit Agreement

In January 2017, Charah entered into a \$110,000 revolving credit facility (the “Charah Revolving Credit Facility”) with a bank with a maturity date of January 13, 2022. The agreement also provided for additional borrowings starting at \$38,000 that reduced to \$0 as of December 31, 2017. Interest was calculated using the LIBOR rate plus the Applicable Rate (as defined in the Charah Revolving Credit Facility). The Applicable Rate was based upon the consolidated leverage ratio and ranged from 1.75%

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to 3.50% . If certain stipulated criteria were met, the outstanding principal and accrued interest on the credit facility could be prepaid without penalty. The debt was repaid in full in October 2017.

In January 2017, Charah also entered into a \$13,000 equipment line scheduled to term out every six months or once the maximum borrowings had been reached. The debt was repaid in full in October 2017.

In August 2017, Allied entered into a \$20,000 revolving credit facility (the “Allied Revolving Credit Facility”) with a bank, with its immediate parent company, its subsidiaries, and Charah serving as guarantors. Availability under the Allied Revolving Credit Facility was limited to a borrowing base. Interest was calculated using the LIBOR rate plus the Applicable Margin (as defined in the Allied Revolving Credit Facility). Based on the consolidated leverage ratio, the Applicable Rate (as defined in the Allied Revolving Credit Facility) ranged from 1.50% to 3.00% . The agreement was set to mature on August 17, 2019. A total of \$6,000 was borrowed against the revolving credit facility in September 2017. The debt was repaid in full in October 2017.

In October 2017, Charah entered into a credit agreement with a bank providing for a revolving credit facility (the “Credit Facility”) with a principal amount of up to \$45,000 . The interest rates per annum applicable to the loans under the Credit Facility were based on a fluctuating rate of interest measured by reference to, at the Company’s election, either (i) an adjusted LIBOR plus a 2.00% borrowing margin, or (ii) an alternative base rate plus a 1.00% borrowing margin. Customary fees were payable in respect of the Credit Facility and included (i) commitment fees in an annual amount equal to 0.50% of the daily unused portions of the Credit Facility, and (ii) a 2.00% fee on outstanding letters of credit. The Credit Facility had a maturity date of October 25, 2022. There were no amounts drawn on the Credit Facility as of December 31, 2017 . The Credit Facility was terminated in September 2018 and all amounts outstanding thereunder were repaid.

In September 2018, the Company entered into a new syndicated credit agreement (the “Syndicated Credit Facility”) that includes a revolving loan not to exceed \$50,000 , a term loan of \$205,000 (see also Note 8), and a commitment to loan up to \$25,000 that expires in March 2020. All amounts loaned under the Syndicated Credit Facility mature in September 2023. The interest rates per annum applicable to the loans under the Syndicated Credit Facility are based on a fluctuating rate of interest measured by reference to, at the Company’s election, either (i) the Eurodollar rate, currently the LIBOR rate, or (ii) an alternative base rate. Various margins are added to the interest rate selected by the Company based upon the Company’s consolidated net leverage ratio. Customary fees are payable in respect of the Syndicated Credit Facility and include (i) commitment fees (0.25% to 0.35%) for unused portions of the Syndicated Credit Facility, and (ii) fees on outstanding letters of credit (1.30% to 2.10%). The loans are secured by essentially all assets of the Company. The loans are subject to certain financial covenants.

The revolving loan provides a principal amount of up to \$50,000 , reduced by outstanding letters of credit (\$12,531 outstanding as of December 31, 2018). As of December 31, 2018 (Successor), \$19,799 was outstanding on the revolving loan.

8. Notes Payable

The following table summarizes the major components of debt at each balance sheet date and provides maturities and interest rate ranges for each major category as of December 31, 2018 (Successor) and December 31, 2017 (Successor):

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	December 31, 2018	December 31, 2017
Various equipment notes entered into in November 2017, payable in monthly installments ranging from \$5 to \$24, including interest at 5.2%, maturing in December 2022 through December 2023. The notes are secured by equipment with a net book value of \$4,464 as of December 31, 2018 (Successor).	\$ 4,949	\$ 5,910
Various equipment notes entered into in 2018, payable in monthly installments ranging from \$1 to \$39, including interest ranging from 5.61% to 6.80%, maturing in March 2023 through May 2025. The notes are secured by equipment with a net book value of \$11,791 as of December 31, 2018 (Successor).	12,293	—
In June 2018, the Company entered into a \$12,000 non-revolving credit note with a bank. The credit note will convert to a term loan on April 10, 2019, with a maturity date of April 10, 2024. Interest on borrowings prior to the conversion date is calculated using a floating rate equal to 2% in excess of LIBOR. At the conversion date, interest can be either calculated based on the aforementioned rate or at a fixed rate equal to 2% in excess of the 5-year Swap Rate in effect at the conversion date, based on the Company's preference. The note is secured by equipment with a net book value of \$8,038 as of December 31, 2018 (Successor).	8,299	—
A \$10,000 equipment line with a bank, entered into in December 2017, secured by all equipment purchased with the proceeds of the loan. Interest is calculated on any outstanding amounts using a fixed rate of 4.5%. The equipment line converted to a term loan in September 2018, with a maturity date of June 22, 2023. The term loan is secured by equipment with a net book value of \$8,445 as of December 31, 2018 (Successor).	9,563	3,244
A credit agreement with a bank, entered into in October 2017, providing for a senior secured term loan B facility with an initial commitment of \$250,000 (the "Term Loan"). The interest rates per annum applicable to the loans under the Term Loan were based on a fluctuating rate of interest measured by reference to, at the Company's election, either (i) LIBOR plus a 6.25% borrowing margin, or (ii) an alternative base rate plus a 5.25% borrowing margin. The principal amount of the Term Loan amortized at a rate of 7.5% per annum with all remaining outstanding amounts under the Term Loan due on the Term Loan maturity date. A portion of the IPO proceeds was used to prepay scheduled principal payments which would otherwise have been required through June 2020. The Term Loan had a scheduled maturity date of October 25, 2024. The Term Loan was secured by substantially all the assets of the Company and was subject to certain financial covenants. The loan was repaid in full in September 2018.	—	250,000
A term loan entered into in September 2018 as part of the Syndicated Credit Facility (see also Note 7). The interest rate applicable to the term loan is based on a fluctuating rate of interest measured by reference to, at the Company's election, either (i) the Eurodollar rate, currently the LIBOR rate, or (ii) an alternative base rate (see also Note 7). Principal payments of \$2,563 are required quarterly through September 2020, \$3,844 through September 2022, and \$5,125 through September 2023. The remaining outstanding amounts will be due in September 2023. The term loan is secured by substantially all the assets of the Company and is subject to certain financial covenants.	202,438	—
Total	237,542	259,154
Less debt issuance costs	(3,252)	(11,460)
	234,290	247,694
Less current maturities	(23,268)	(19,996)
Notes payable due after one year	\$ 211,022	\$ 227,698

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Included in interest expense, net in the consolidated statements of operations for the year ended December 31, 2018 (Successor) was \$12.5 million of costs incurred in conjunction with the refinance of our term loan, consisting of a \$10.4 million non-cash write-off of debt issuance costs and a \$2.1 million prepayment penalty.

In January 2017, Charah entered into a \$14,000 term note, payable to a bank in quarterly principal payments of \$811 through July 2021 at which point all outstanding principal, accrued interest, and fees would have been due. Interest was calculated using the LIBOR rate plus the Applicable Rate. This note was repaid in full in October 2017.

In January 2017, Charah entered into a \$42,000 equipment loan split into eight notes with payoff terms between 24 and 60 months. Seven having an interest rate of 5.25% and one having an interest rate of 4.83% . The notes were repaid in full in October 2017.

Future maturities of notes payable at December 31 are as follows:

For the Year Ending December 31,

2019	\$	23,268
2020		16,508
2021		20,626
2022		22,195
2023		152,914
Thereafter		2,031
Total	\$	237,542

9. Interest Rate Swap

In order to manage interest rate risk in a cost-efficient manner, the Company entered into an interest rate swap in December 2017 whereby the Company agreed to exchange with the counterparty, at specified intervals, the difference between fixed and variable interest amounts calculated by reference to a notional amount. The interest rate swap is not designated for hedge accounting. The change in fair value of the interest rate swap is immediately recognized in earnings, within interest expense, net.

As of both December 31, 2018 (Successor) and December 31, 2017 (Successor), the notional amount of the interest rate swap was \$150,000 . A fair value asset of \$891 was recorded in the consolidated balance sheet within other assets as of December 31, 2018 (Successor) and a fair value liability of \$198 was recorded in the combined balance sheet within other liabilities as of December 31, 2017 (Successor). The total amount of gain subtracted from interest expense, net for the year ended December 31, 2018 (Successor) was \$1,089 . The total amount of loss added to interest expense, net for the period from January 13, 2017 through December 31, 2017 was \$198 . There was no impact in the period from January 1, 2017 through January 12, 2017 (Predecessor) or the year ended December 31, 2016 (Predecessor).

10. Costs and Estimated Earnings on Uncompleted Contracts

Costs and estimated earnings on uncompleted contracts as of:

	December 31, 2018	December 31, 2017
Costs incurred on uncompleted contracts	\$ 314,700	\$ 151,963
Estimated earnings	96,176	53,356
Total costs and earnings	410,876	205,319
Less billings to date	(325,518)	(213,242)
Costs and estimated earnings in excess of billings	\$ 85,358	\$ (7,923)

The net balance in process is classified on the consolidated and combined balance sheets as of:

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	December 31, 2018	December 31, 2017
Costs and estimated earnings in excess of billings	\$ 86,710	\$ 7,959
Billings in excess of costs and estimated earnings	(1,352)	(15,882)
Net balance in process	<u>\$ 85,358</u>	<u>\$ (7,923)</u>

The increase in costs and estimated earnings in excess of billings in 2018 was primarily attributable to the early completion of the significant Brickhaven ash remediation contract, which accelerated revenues and expenses related to this contract into 2018.

11. Distributions to Stockholders and Members

Prior to the Company's June 18, 2018 corporate reorganization, the Company made certain distributions to stockholders and members to cover their tax liabilities. During the year ended December 31, 2018 (Successor), the period from January 13, 2017 through December 31, 2017 (Successor), the period from January 1, 2017 through January 12, 2017 (Predecessor), and the year ended December 31, 2016 (Predecessor), the Company made distributions of \$686 , \$136,085 , \$20,660 , and \$25 , respectively, a portion of which was used to pay for income taxes.

12. Stock/Unit-Based Compensation

Effective January 1, 2009, Charah established the Plan, whereby certain key employees were issued units that settle in shares of non-voting common stock upon the occurrence of certain specified events. Units issued under the Plan were classified as liabilities, due to a call option which allowed Charah to repurchase the non-voting common stock immediately after settlement of the units for an amount other than the fair value of the non-voting common stock. Compensation cost was recognized for issued units based upon the fair value of the units at the end of each reporting period and the percentage of requisite service rendered by the employees holding the units.

The Plan was terminated in December 2016 and all units became 100% vested and were converted into shares of non-voting common stock that did not continue past the date of the investment by BCP on January 13, 2017.

Units of the Plan had a value based on the value of one share of Charah's non-voting common stock. Participant units vested at the rate of 20% per year of service, and become fully vested and non-forfeitable after the completion of five years of service from the issuance of the units. Benefits under the Plan were settled in shares of non-voting common stock, based upon the ratio of one unit's value to the value of one share of non-voting common stock as of the date of issuance of the unit. Participants were required to enter into a shareholder agreement which restricted the transfer of units and non-voting common stock issued under the Plan.

For the year ended December 31, 2016 (Predecessor), the Company recognized compensation cost of \$7,352 , which was recognized as general and administrative expenses in the combined statement of income.

At inception of the Plan, 62,500 units were authorized. During 2016, Charah issued 9,840 units. In December 2016, all units became 100% vested. The 52,515 units issued and vested were converted into 49,860 shares of non-voting common stock based on the ratio described above. The 49,860 shares of non-voting common stock were valued at \$34,554 , based on the purchase price associated with the transaction with BCP in January 2017 (See Note 3), of which in 2016 Charah paid \$15,666 , and the remaining \$18,888 was recorded as a current liability at December 31, 2016 (Predecessor). Charah paid the remaining \$18,888 in January 2017.

The Limited Liability Company Agreement for Charah Management provided for the issuance of up to 1,000 Series C profits interests (the "Charah Series C Profits Interests"). In 2017, Charah Management adopted the Charah Series C Profits Interest Plan and issued 650 of such units to employees. The Charah Series C Profits Interests participated in distributions to Charah members based on specified rates of return being realized to the Charah Series A and Charah Series B membership interests. The Charah Series C Profits Interest Plan is no longer in place following our corporate reorganization and the IPO. The Charah Series C Profits Interests would have vested ratably in each of the first five anniversaries of their grant date with vesting accelerated upon a change of control. There were 540 Charah Series C Profits Interests unvested at June 18, 2018, which were canceled as a result of the corporate reorganization that occurred upon the closing of the IPO (see further discussion below). The Charah Series C Profits Interests were valued based upon a contingent claims analysis to allocate the total implied equity value as of the valuation date amongst the various equity securities classes, with breakpoints estimated considering relative seniority, liquidation preferences, and conversion features. An assumed volatility of 30% based upon a comparable public company analysis was used in the

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determination of fair value. The weighted-average grant date fair value of the Charah Series C Profits Interests granted during 2017 was \$3,198 per unit, resulting in \$2,100 of total compensation costs, which was expected to vest over five years.

During the year ended December 31, 2018 (Successor), the period from January 13, 2017 through December 31, 2017 (Successor), and the period from January 1, 2017 through January 12, 2017 (Predecessor), compensation expense of \$214 , \$311 , and \$0 , respectively, was recognized related to the Charah Series C Profits Interests.

The Limited Liability Company Agreement for Allied provided for the issuance of up to 1,000 Allied Series C profits interests (the "Allied Series C Profits Interests"). In 2017, Allied adopted the Allied Series C Profits Interest Plan and issued 550 of such units to employees. The Allied Series C Profits Interest Plan is no longer in place following our corporate reorganization and the IPO. The Allied Series C Profits Interests participated in distributions to Allied members based upon specified rates of return being realized to the Allied Series A and Allied Series B membership interests. The Allied Series C Profits Interests vested immediately upon grant. The Allied Series C Profits Interests were valued based upon a contingent claims analysis to allocate the total implied equity value as of the valuation date amongst the various equity securities classes, with breakpoints estimated considering relative seniority, liquidation preferences, and conversion features. An assumed volatility of 32.5% based upon a comparable public company analysis was used in the determination of fair value. The weighted average grant date fair value of the Allied Series C Profits Interests granted during 2017 was \$69 per unit. During the year ended December 31, 2018 (Successor), the period from January 13, 2017 through December 31, 2017 (Successor), and the period from January 1, 2017 through January 12, 2017 (Predecessor), compensation expense of \$0 , \$38 , and \$0 , respectively, was recognized related to the Allied Series C Profits Interests.

In conjunction with the funding of the investment in Allied Power Holdings in July 2017, select individuals, including members of the management team at Allied, were given the opportunity to invest in, via an aggregator entity, Allied Management Holdings, alongside, and on the same basis as, the existing investment group. In exchange for their investment, common equity interests (Series B) in both Allied Power Holdings and Charah Management were issued. For those members of management, 1.9 million Charah Management LLC Series B Membership Interests and 0.1 million Allied Power Management LLC Series B Membership Interests were granted as a deemed contribution and a portion was invested via a cash contribution. All rights under these membership interests were fully vested at the time of the grant. There was \$2,080 of compensation expense recorded in the period from January 13, 2017 through December 31, 2017 (Successor) related to these Series B membership interest grants. No compensation expense was recognized during the year ended December 31, 2018 (Successor) and the period from January 1, 2017 through January 12, 2017 (Predecessor).

In connection with the corporate reorganization that occurred upon the closing of the IPO, the holders of Charah Series C Profits Interests and Allied Series C Profits Interests received 1,215,956 shares of common stock (the "Management Reorganization Consideration") in exchange for the contribution to the Company of their Charah Series C Profits Interests and Allied Series C Profits Interests. Of these shares, 303,993 vested immediately and 911,963 shares are subject to time-based vesting conditions, as well as performance vesting conditions, based on specified EBITDA targets and achievement of certain safety metrics, which will be determined at future dates. In addition, 272,708 shares of common stock were issued under the Charah Solutions, Inc. 2018 Omnibus Incentive Plan (see further discussion below). Of these shares, 68,176 shares vested immediately and 204,532 shares are subject to the same time-based vesting conditions and performance vesting conditions as the shares issued in accordance with the Management Reorganization Consideration. The fair value of the awards was calculated initially as \$12 per share, and will be updated thereafter for changes at each reporting period until the performance targets are approved by the Company's board of directors. The fair value of the awards is recognized over the required service period for each grant. As of December 31, 2018 (Successor), none of the shares subject to time-based and performance vesting conditions were vested.

Upon the closing of the IPO, the board of directors of the Company adopted the Charah Solutions, Inc. 2018 Omnibus Incentive Plan (the "2018 Plan"), pursuant to which employees, consultants, and directors of the Company and its affiliates, including named executive officers, are eligible to receive awards. The 2018 Plan provides for the grant of stock options, stock appreciation rights, restricted stock, restricted stock units, bonus stock, dividend equivalents, other stock-based awards, substitute awards, annual incentive awards, and performance awards intended to align the interests of participants with those of Company stockholders. The Company has reserved 3,006,582 shares of common stock for issuance under the 2018 Plan, and all future equity awards described above will be issued pursuant to the 2018 Plan. In June 2018, the Company issued 44,198 shares under the 2018 Plan that vest after one year. The fair value of the awards was calculated as \$12 per share, which will be recognized over the one-year vesting period. In August 2018, the Company issued 45,004 shares under the 2018 Plan that vest after one year. The fair value of the awards was calculated as \$7.67 per share, which will be recognized over the one-year vesting period. As of December 31, 2018 (Successor), none of the shares were vested.

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Restricted stock awards for the year ended December 31, 2018 (Successor):

	Shares	Weighted Average Grant Date Fair Value	Weighted Average Remaining Contractual Terms (Years)	Aggregate Intrinsic Value
Granted to replace Charah and Allied Series C Profits Interests	1,215,996	\$ 12.00		
Granted	361,910	11.46		
Forfeited	(6,994)	12.00		
Vested	(372,169)	12.00		
Outstanding as of December 31, 2018	<u>1,198,743</u>	\$ 11.84	0.77	\$ 10,009

During the year ended December 31, 2018 (Successor), \$3,913 of compensation expense was recognized related to the shares issued in accordance with the Management Reorganization Consideration and the 2018 Plan. As of December 31, 2018 (Successor), total unrecognized stock-based compensation expense related to non-vested awards, net of estimated forfeitures, was approximately \$1,840 , and is expected to be recognized over a weighted average period of approximately 1.36 years. The total fair value of awards vested was \$4,466 for the year ended December 31, 2018 (Successor).

13. Defined Contribution Retirement Plan

Charah and Ash Management Services (“AMS”) provide a defined contribution employee benefit plan (the “Charah and AMS 401(k) Plan”) qualified under Section 401(k) of the Code to employees who have completed 90 days of service and have attained age 18. Participants may contribute up to the lesser of 90% of eligible compensation or the maximum allowed under the Code. Charah and AMS make safe harbor contributions to participant accounts equal to 3% of the participant’s annual compensation, commencing the quarter after the employee completes one year of service. Charah and AMS may also make discretionary contributions, and the contributions may vary from year to year, for employees who have met one year of employment. Participants are immediately vested in their elective contributions and safe harbor contributions. Participants are vested in discretionary contributions after completing six years of service. During the year ended December 31, 2018 (Successor), the period from January 13, 2017 through December 31, 2017 (Successor), the period from January 1, 2017 through January 12, 2017 (Predecessor), and the year ended December 31, 2016 (Predecessor), Charah and AMS contributed \$932 , \$861 , \$29 , and \$759 , respectively to the Charah and AMS 401(k) Plan.

Allied provides a defined contribution employee benefit plan (the “Allied 401(k) Plan”) qualified under Section 401(k) of the Code to employees who have completed one year of eligibility service and have attained age 21, commencing the quarter following the anniversary of one year of eligibility service. Participants may contribute up to the lesser of 100% of eligible compensation or the maximum allowed under the Code. Allied makes safe harbor contributions to participant accounts equal to (i) 100% of the employee contributions that are not in excess of 3% of employee compensation, plus (ii) 50% of the amount of the employee contributions that exceed 3% of employee compensation but that do not exceed 5% of employee compensation, commencing with an employee’s eligibility for participation in the plan. Allied may also make discretionary matching contributions. Participants are immediately vested in their elective contributions and safe harbor contributions as well as the discretionary matching contributions. During the year ended December 31, 2018 (Successor) and for the period from June 1, 2017 (inception) through December 31, 2017, Allied contributed \$770 and \$258 , respectively, to the Allied 401(k) Plan.

14. Commitments and Contingencies

In July 2017, APTIM Corp. sued Allied and certain of its employees and affiliated entities in the U.S. District Court for the Northern District of Illinois, alleging, among other things, misappropriation of alleged trade secrets, civil conspiracy, and tortious interference with their contractual and business relations. APTIM and its alleged predecessors in interest also had initiated judicial and arbitral proceedings in Louisiana against Dorsey “Ron” McCall, our Senior Vice President and Board Member, alleging breaches of his employment agreement. On December 12, 2018, all parties to the foregoing proceedings executed two settlement and mutual release agreements, pursuant to which the parties reached an omnibus settlement of all claims, lawsuits and proceedings.

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We are party to a lawsuit filed against North Carolina by a certain environmental advocacy group alleging that the issuance by the state of certain permits associated with our Brickhaven clay mine reclamation site exceeded the state's power. Although the state's authority to issue the bulk of the permits (i.e. the allowance to reclaim the original site with coal ash) was upheld, the portion of the permits that allows us to "cut and prepare" an additional portion of the site was held by the North Carolina Superior Court to exceed the relevant agency's statutory authority. The North Carolina Superior Court's decision was reversed and remanded back to the North Carolina Office of Administrative Hearing. The Court stayed the action and ordered the parties to mediate. The parties have been unable to reach a resolution during the mediation. The stay expires on April 5, 2019.

Allied, and its affiliate, Allied Power Resources, LLC, have been named in a collective action lawsuit filed in the U.S. District Court for the Northern District of Illinois, alleging violations of the Fair Labor Standards Act, and which includes related class claims alleging violations of the Illinois Minimum Wage Law and Pennsylvania Minimum Wage Act for failure to pay overtime. This case is one of a series filed against companies in the oil, gas, and energy industries in Illinois and Texas. The parties mediated this case in November 2018 and reached a settlement, contingent upon Court approval. The parties are currently negotiating a settlement agreement and related documents to be submitted to the Court for approval.

In addition to the above matters, we are from time to time party to various claims and legal proceedings which have arisen in the ordinary course of our business. With respect to all such lawsuits, claims and proceedings, we record reserves when it is probable a liability has been incurred and the amount of loss can be reasonably estimated. Although it is difficult to predict the ultimate outcome of these claims and legal proceedings, we do not believe that the ultimate disposition of these matters, individually or in the aggregate, would have a material adverse effect on our results of operations, financial position or cash flows. We maintain liability insurance for certain risks that is subject to certain self-insurance limits.

Included in general and administrative expense in the consolidated statements of operations for the year ended December 31, 2018 (Successor) was approximately \$20.0 million related to legal settlements. We believe the amounts recorded are sufficient to cover any liabilities arising from the proceedings with all outstanding legal claims. Except as reflected in such accruals, we are currently unable to estimate a range of reasonably possible loss, or a range of reasonably possible loss in excess of the amount accrued, for outstanding legal matters.

15. Multiemployer Pension Plan

AMS contributes to union-sponsored multiemployer retirement defined benefit pension plans (the "multiemployer plans") under the terms of collective bargaining agreements that cover its union-represented employees. The risks of participating in the multiemployer plans are different from single-employer plans in the following aspects:

- Assets contributed to the multiemployer plans by one employer may be used to provide benefits to employees of other participating employers.
- If a participating employer stops contributing to the multiemployer plans, the unfunded obligations of the multiemployer plans may be borne by the remaining participating employers.
- If AMS chooses to stop participating in the multiemployer plans, AMS may be required to pay the multiemployer plans an amount based on the underfunded status of the multiemployer plans, referred to as a withdrawal liability.

The primary multiemployer plan to which AMS made contributions for the year ended December 31, 2018 (Successor), the period from January 13, 2017 through December 31, 2017 (Successor), the period from January 1, 2017 through January 12, 2017 (Predecessor), and the year ended December 31, 2016 (Predecessor), is outlined in the table below. The "EIN/Pension Plan Number" column provides the Employer Identification Number ("EIN"). The most recent Pension Protection Act zone status available in 2018 is for the respective multiemployer plan's year-end within those years, unless otherwise noted. The zone status is based on information that AMS received from the multiemployer plans and is certified by the respective multiemployer plan's actuary. Among other factors, multiemployer plans in the red zone (critical) are generally less than 65% funded, multiemployer plans in the yellow zone (endangered) are less than 80% funded, and multiemployer plans in the green zone (neither critical and declining, critical, or endangered) are at least 80% funded. The "FIP/RP Status Pending/Implemented" column indicates multiemployer plans for which a financial improvement plan ("FIP") or a rehabilitation plan ("RP") is either pending or has been implemented. The last column lists the expiration dates of the collective bargaining agreements to which the multiemployer plans are subject.

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Pension Fund	EIN/Pension Plan Number	Pension Protection Act Zone Status	FIP/RP Status Pending/ Implemented	Successor		Predecessor			Surcharge Imposed	Expiration Date of Collective Bargaining Agreement
				Year ended December 31, 2018 Contributions to Funds by AMS	Period from January 13, 2017 through December 31, 2017 Contributions to Funds by AMS	Period from January 1 2017 through January 12, 2017 Contributions to Funds by AMS	Year ended December 31, 2016 Contributions to Funds by AMS			
Central states, southeast and southwest areas pension plan	36-6044243	Red - Critical and declining	Progress under FIP or RP	\$ 34	\$ 59	\$ —	\$ 78	No	Continuous with notice period by either party	
Employer Teamsters Locals 175 & 505 pension trust fund	55-6021850	Red - Critical	Progress under FIP or RP	\$ 92	\$ —	\$ —	\$ —	Yes	2021	

16. Business Segment and Related Information

The Company has identified the following reportable segments, Environmental Solutions and Maintenance and Technical Services, as each met the quantitative threshold of generating revenues equal to or greater than 10% of the combined revenue of all operating segments.

The accounting policies applied to determine the segment information are the same as those described in the summary of significant accounting policies. Management evaluates the performance of each segment based on segment gross profit, which is calculated as revenues less cost of sales. For the year ended December 31, 2018 (Successor), the period from January 13, 2017 through December 31, 2017 (Successor), the period from January 1, 2017 through January 12, 2017 (Predecessor), and the year ended December 31, 2016 (Predecessor), there were no intersegment revenues or other intersegment transactions. Segment assets are also evaluated by management based on each segment's investment in property and equipment. Assets (other than property and equipment and goodwill) are not allocated to segments.

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Summarized financial information with respect to the reportable segments is as follows:

Successor

For the year ended December 31, 2018	ES	M&TS	All Other	Total
Revenue	\$ 343,105	\$ 397,357	\$ —	\$ 740,462
Segment gross profit	69,464	28,264	—	97,728
Segment depreciation and amortization expense	27,943	6,394	7,971	42,308
Expenditures for segment assets	11,728	10,284	24	22,036
Period from January 13, 2017 through December 31, 2017	ES	M&TS	All Other	Total
Revenue	\$ 232,581	\$ 188,658	\$ —	\$ 421,239
Segment gross profit	64,433	17,898	—	82,331
Segment depreciation and amortization expense	23,169	2,361	189	25,719
Expenditures for segment assets	6,107	6,583	—	12,690

Predecessor

Period from January 1, 2017 through January 12, 2017	ES	M&TS	All Other	Total
Revenue	\$ 7,451	\$ 1,679	\$ —	\$ 9,130
Segment gross profit	1,412	417	—	1,829
Segment depreciation and amortization expense	688	70	5	763
Expenditures for segment assets	—	—	—	—

For the year ended December 31, 2016	ES	M&TS	All Other	Total
Revenue	\$ 218,051	\$ 47,017	\$ —	\$ 265,068
Segment gross profit	51,282	10,558	—	61,840
Segment depreciation and amortization expense	10,228	5,263	110	15,601
Expenditures for segment assets	6,668	3,044	353	10,065

Successor

As of December 31, 2018	ES	M&TS	All Other	Total
Segment property and equipment, net	\$ 47,467	\$ 41,155	\$ 319	\$ 88,941
Segment goodwill	57,591	16,622	—	74,213
As of December 31, 2017	ES	M&TS	All Other	Total
Segment property and equipment, net	\$ 75,764	\$ 23,725	\$ 441	\$ 99,930
Segment goodwill	56,846	16,622	—	73,468

The following is a reconciliation of segment gross profit to net (loss) income:

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	Successor		Predecessor	
	For the year ended December 31, 2018	Period from January 13, 2017 through December 31, 2017	Period from January 1, 2017 through January 12, 2017	For the year ended December 31, 2016
Segment gross profit	\$ 97,728	\$ 82,331	\$ 1,829	\$ 61,840
General and administrative expenses	(76,752)	(48,495)	(3,170)	(35,170)
Interest expense, net	(32,226)	(14,146)	(4,181)	(6,244)
Income from equity method investment	2,407	816	48	2,703
Income tax benefit	2,427	—	—	—
Net (loss) income	<u>\$ (6,416)</u>	<u>\$ 20,506</u>	<u>\$ (5,474)</u>	<u>\$ 23,129</u>

The following is a reconciliation of segment assets to total assets:

	As of December 31, 2018	As of December 31, 2017
Segment property and equipment, net	\$ 88,941	\$ 99,930
Segment goodwill	74,213	73,468
Non-segment assets	295,747	204,253
Total assets	<u>\$ 458,901</u>	<u>\$ 377,651</u>

Summarized financial information with respect to the types of revenue recognized are as follows:

Successor					
For the year ended December 31, 2018	Products	Percentage of Completion	Services	Total	
Revenue	\$ 80,851	\$ 255,410	\$ 404,201	\$ 740,462	
Period from January 13, 2017 through December 31, 2017	Products	Percentage of Completion	Services	Total	
Revenue	\$ 22,865	\$ 196,833	\$ 201,541	\$ 421,239	
Predecessor					
Period from January 1, 2017 through January 12, 2017	Products	Percentage of Completion	Services	Total	
Revenue	\$ 885	\$ 6,377	\$ 1,868	\$ 9,130	
For the year ended December 31, 2016	Products	Percentage of Completion	Services	Total	
Revenue	\$ 28,114	\$ 176,496	\$ 60,458	\$ 265,068	

17. Income Taxes

The Company is a "C" Corporation under the Code and, as a result, will be subject to U.S. federal, state, and local income taxes. The Company's subsidiaries previously operated as partnerships for income tax purposes. Prior to the contribution of assets and liabilities to the Company on June 18, 2018, the subsidiaries passed through their taxable income to their owners for U.S. federal and other state and local income tax purposes and, thus, the subsidiaries were not subject to U.S. federal income taxes or other state or local income taxes, except for franchise tax at the state level. Accordingly, the financial data attributable prior to the contribution on June 18, 2018 contains no provision for U.S. federal income taxes or income taxes in any state or locality other than franchise taxes.

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The Company has determined its opening balance for deferred income tax assets and liabilities to be a net deferred tax liability of \$1,508 based on the future tax effects of temporary differences between the financial statement value and tax basis of assets and liabilities contributed to the Company upon conversion as a taxable corporation on June 18, 2018. In accordance with ASC Topic 740, the tax effects have been recorded as a separate item of income tax expense.

The components of the provision for income taxes for the year ended December 31, 2018 (Successor) is as follows:

	Current income tax expense:
Federal	\$ —
State	568
	<u>568</u>
	Deferred income tax benefit:
Federal	(1,279)
State	(1,716)
	<u>(2,995)</u>
Total income tax benefit	<u><u>\$ (2,427)</u></u>

Pre-tax book loss for the period June 18, 2018 to December 31, 2018 (Successor) was \$16,588 including income attributable to non-controlling interest of \$1,627, which is not subject to income tax at the Company level. The Company's effective income tax rate on consolidated book income for the period is 14.6%. The Company's foreign subsidiary's book income was insignificant and there was no current or deferred foreign income tax expense for the year ended December 31, 2018 (Successor).

A reconciliation of income tax benefit based on the federal statutory income tax rate of 21% to the actual income tax benefit for the year ended December 31, 2018 (Successor) is as follows:

Income tax benefit at the federal statutory rate (21%)	\$ (1,857)
State income tax benefit, net of federal tax benefit	(907)
Income tax expense upon conversion to corporation	1,818
Non-controlling interest	(522)
Stock compensation	374
Income prior to conversion	(1,446)
Other	113
Benefit from income taxes	<u><u>\$ (2,427)</u></u>

The Company accounts for income taxes in accordance with ASC Topic 740, which requires an asset and liability approach for measuring deferred taxes based on temporary differences between the financial statement and tax basis of assets and liabilities existing at each balance sheet date using enacted tax rates for the years in which taxes are expected to be paid or recovered.

The components of the Company's deferred tax assets and liabilities as of December 31, 2018 (Successor) are as follows:

Fixed assets, including land	\$ (9,641)
Asset retirement obligation	6,489
Purchase option liability	2,494
Accrued bonus	1,622
Other accrued expenses and reserves	2,636
Prepaid expenses	(885)
Loss carryovers	850
Intangible assets	(818)
Deferred tax asset, net	<u><u>\$ 2,747</u></u>

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Each quarter we assess our tax assets to determine whether all or any portion of the assets is not more likely than not realizable under ASC Topic 740. We are required to establish a valuation allowance for any portion of the assets we conclude is not more likely than not realizable. As of December 31, 2018 (Successor), no valuation allowance was recorded.

The Company classifies any interest and penalties related to income taxes assessed as part of income tax expense. The Company has concluded that there are no significant uncertain tax positions requiring recognition in the financial statements, nor has the Company been assessed interest or penalties by any major tax jurisdiction to any open tax periods.

The Company's income tax returns for the year ended December 31, 2018 (Successor) will be its initial tax returns filed with the U.S. federal, state and local governments. The examination of prior period tax returns filed for partnerships, the interests of which were contributed to the Company in the reorganization, could impact the Company's tax expense and balance sheet tax accounts.

The Company acquired a foreign subsidiary at formation, and the subsidiary is subject to examination in its local country for prior calendar years. The Company is not aware of any potential adjustments for prior years and any such adjustment is not expected to be material to the financial statements.

18. Operating Leases

The Company leases buildings, vehicles and equipment under various non-cancellable agreements classified as operating leases, which expire through December 2026 and require various minimum annual rentals.

Future minimum lease payments, including the related party leases (see Note 5), are as follows:

For the Year Ending December 31,	Operating Leases
2019	\$ 4,462
2020	3,549
2021	1,285
2022	451
2023	451
Thereafter	1,316
Total	\$ 11,514

The total rent expense, excluding the related party leases (see Note 5), included in the consolidated and combined statements of operations for the year ending December 31, 2018 (Successor), the period from January 13, 2017 through December 31, 2017 (Successor), the period from January 1, 2017 through January 12, 2017 (Predecessor), and the year ended December 31, 2016 (Predecessor) was \$6,150 , \$5,574 , \$179 , and \$4,900 , respectively.

19. Members' Equity

During 2016, 49,860 shares of non-voting common stock were issued in accordance with the Deferred Stock Plan (see Note 12).

Charah, LLC's voting and non-voting shares at January 12, 2017 (Predecessor) were cancelled in connection with the BCP transaction (see Note 3) and Series A and Series B members' interests were issued. Charah, LLC had 200,000,000 Series A members' interests authorized, of which 104,109,890 were issued and outstanding as of December 31, 2017 (Successor). The Series A members' interests were issued between January 13, 2017 and December 31, 2017 (Successor) in connection with the BCP transaction in exchange for BCP's investment of \$104.1 million . Charah, LLC had 100,000,000 Series B members' interests authorized, of which 35,199,063 were issued and outstanding as of December 31, 2017. The Series B members' interests were issued between January 13, 2017 and December 31, 2017 (Successor) in connection with the BCP transaction in exchange for an investment of \$32.8 million from members of Charah, LLC's management and \$2.4 million with the formation of Allied Power Management, LLC, as described below. Series A and Series B both participated in distributions.

Allied Power Management, LLC had 200,000,000 Series A members' interests authorized, of which 7,210,555 were issued and outstanding as of December 31, 2017 (Successor). The Series A members' interests were issued between January 13, 2017 and December 31, 2017 (Successor) in exchange for an investment of \$7.2 million . Allied Power Management, LLC had 100,000,000 Series B members' interests authorized, of which 2,437,855 were issued and outstanding as of December 31, 2017

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(Successor). The Series B members' interests were issued between January 13, 2017 and December 31, 2017 (Successor). The Series B members' interests were issued in connection with the formation of Allied Power Management, LLC in exchange for an investment of \$2.4 million by the existing members of Charah, LLC and members of Allied Power Management, LLC, with the purpose of creating common ownership of the two entities. Series A and Series B both participated in distributions.

Upon the IPO, the Series A and Series B shares were exchanged for shares in Charah Solutions (see Note 1).

20. Earnings (Loss) Per Share

Basic earnings (loss) per share is computed by dividing net income (loss) attributable to the Company's stockholders by the weighted average number of shares outstanding during the period. Diluted earnings (loss) per share reflects all potential dilutive ordinary shares outstanding during the period and is computed by dividing net income (loss) available to the Company's stockholders by the weighted average number of shares outstanding during the period increased by the number of additional shares that would have been outstanding as dilutive securities. For the periods prior to the IPO, the average number of ordinary shares outstanding used to calculate basic and diluted earnings (loss) per share was based on the ordinary shares that were outstanding at the time of the IPO.

As a result of the net loss per share for the year ended December 31, 2018 (Successor), the inclusion of all potentially dilutive shares would be anti-dilutive. Therefore, dilutive shares (in thousands) of 1,020 were excluded from the computation of the weighted average shares for diluted net loss per share for the year ended December 31, 2018 (Successor).

Basic and diluted earnings (loss) per share is determined using the following information:

	Successor		Predecessor	
	For the year ended December 31, 2018	Period from January 13, 2017 through December 31, 2017	Period from January 1, 2017 through January 12, 2017	For the year ended December 31, 2016
Numerator:				
Net (loss) income attributable to Charah Solutions, Inc.	\$ (8,902)	\$ 18,316	\$ (5,528)	\$ 20,931
Denominator (in thousands):				
Weighted average shares outstanding	26,610	23,710	N/A	N/A
Dilutive share-based awards	—	822	N/A	N/A
Total weighted average shares outstanding, including dilutive shares	26,610	24,532	N/A	N/A
Basic (loss) earnings per share	\$ (0.33)	\$ 0.77	N/A	N/A
Diluted (loss) earnings per share	\$ (0.33)	\$ 0.75	N/A	N/A

21. Major Customers

The Company derived approximately 46% and 35% of its consolidated and combined revenue from two customers during the year ended December 31, 2018 (Successor), approximately 32% and 49% from two customers during the period from January 13, 2017 through December 31, 2017 (Successor), and approximately 68% and 70% from one customer during the period from January 1, 2017 through January 12, 2017 (Predecessor) and the year ended December 31, 2016 (Predecessor), respectively. Accounts receivable from the two customers at December 31, 2018 (Successor) and December 31, 2017 (Successor) were \$35,106 and \$30,556, respectively.

22. Asset Retirement Obligation

The Company owns and operates two structural fill sites that will have continuing maintenance and monitoring requirements subsequent to their closure. As of December 31, 2018 (Successor) and December 31, 2017 (Successor), the Company has accrued approximately \$26,065 and \$1,072, respectively, for the asset retirement obligation.

The following table reflects the activity for the asset retirement obligation:

CHARAH SOLUTIONS, INC.

Notes to Consolidated & Combined Financial Statements, continued
(dollars in thousands except per share and unit data)

	December 31, 2018	December 31, 2017
Opening balance	\$ 1,072	\$ 865
Obligations incurred	24,673	154
Interest accretion	320	53
Ending balance	26,065	1,072
Less current portion	(14,704)	(1,072)
Non-current portion	<u>\$ 11,361</u>	<u>\$ —</u>

23. Quarterly Financial Data (Unaudited)

The following table summarizes the unaudited quarterly results of operations for the year ended December 31, 2018 (Successor), the period from January 13, 2017 through December 31, 2017 (Successor), and the period from January 1, through January 12, 2017 (Predecessor):

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
2018				
Revenue	\$ 155,529	\$ 195,723	\$ 186,002	\$ 203,208
Operating income (loss)	4,717	11,612	(5,919)	10,566
Net income (loss) attributable to Charah Solutions, Inc.	806	3,220	(17,395)	4,467
Basic earnings (loss) per share	0.03	0.13	(0.60)	0.15
Diluted earnings (loss) per share	0.03	0.13	(0.60)	0.15

	January 1, 2017 through January 12, 2017	January 13, 2017 through March 31, 2017	Second Quarter	Third Quarter	Fourth Quarter
2017					
Revenue	\$ 9,130	\$ 58,965	\$ 74,404	\$ 118,911	\$ 168,959
Operating (loss) income	(1,341)	9,214	13,031	3,212	8,379
Net (loss) income attributable to Charah Solutions, Inc.	(5,528)	8,095	10,771	1,057	(1,607)
Basic earnings (loss) per share	N/A	0.34	0.45	0.04	(0.07)
Diluted earnings (loss) per share	N/A	0.33	0.44	0.04	(0.07)

Basic and diluted earnings (loss) per common share for each of the quarters presented above is based on the respective weighted average number of common and dilutive potential common shares outstanding for each quarter, and the sum of the quarters may not necessarily be equal to the full year basic and diluted earnings per common share amounts.

**FORM OF RESTRICTED STOCK UNIT AGREEMENT
PURSUANT TO THE
CHARAH SOLUTIONS, INC. 2018 OMNIBUS INCENTIVE PLAN**

* * * * *

Participant:

Grant Date:

Number of Restricted Stock Units Granted:

* * * * *

THIS RESTRICTED STOCK UNIT AWARD AGREEMENT (this “Agreement”), dated as of the Grant Date specified above, is entered into by and between Charah Solutions, Inc., a corporation organized in the State of Delaware (the “Company”), and the Participant specified above, pursuant to the Charah Solutions, Inc. 2018 Omnibus Incentive Plan, as in effect and as amended from time to time (the “Plan”), which is administered by the Committee; and

WHEREAS, it has been determined under the Plan that it would be in the best interests of the Company to grant the Restricted Stock Units (“RSUs”) provided herein to the Participant.

NOW, THEREFORE, in consideration of the mutual covenants and promises hereinafter set forth and for other good and valuable consideration, the parties hereto hereby mutually covenant and agree as follows:

1. **Incorporation by Reference; Plan Document Receipt**. This Agreement is subject in all respects to the terms and provisions of the Plan (including, without limitation, any amendments thereto adopted at any time and from time to time unless such amendments are expressly intended not to apply to the Award provided hereunder), all of which terms and provisions are made a part of and incorporated in this Agreement as if they were each expressly set forth herein. Any capitalized term not defined in this Agreement shall have the same meaning as is ascribed thereto in the Plan. The Participant hereby acknowledges receipt of a true copy of the Plan and that the Participant has read the Plan carefully and fully understands its content. In the event of any conflict between the terms of this Agreement and the terms of the Plan, the terms of the Plan shall control.

2. **Grant of Restricted Stock Unit Award**. The Company hereby grants to the Participant, as of the Grant Date specified above, the number of RSUs specified above. Except as otherwise provided by the Plan, the Participant agrees and understands that nothing contained in this Agreement provides, or is intended to provide, the Participant with any protection against potential future dilution of the Participant’s interest in the Company for any reason, and no adjustments shall be made for dividends in cash or other property, distributions or other rights in respect of the shares of Common Stock underlying the RSUs, except as otherwise specifically

provided for in the Plan or this Agreement. Subject to Section 5 hereof, the Participant shall not have the rights of a stockholder in respect of the shares underlying this Award until such shares are delivered to the Participant in accordance with Section 4 hereof.

3. **Vesting** .

(a) Subject to the provisions of Sections 3(b) and 3(c) hereof, the RSUs shall vest and become exercisable as follows, provided that the Participant has not incurred a Termination prior to each such vesting date:

<u>Vesting Date</u>	<u>Percentage of RSUs</u>
August 11, 2019	100%

There shall be no proportionate or partial vesting in the periods prior to each vesting date and all vesting shall occur only on the appropriate vesting date, subject to the Participant's continued service with the Company or any of its Subsidiaries on each applicable vesting date.

(b) Committee Discretion to Accelerate Vesting . Notwithstanding the foregoing, the Committee may, in its sole discretion, provide for accelerated vesting of the RSUs at any time and for any reason.

(c) Change in Control . In the event of a Change in Control of the Company, a Participant's unvested Awards shall not vest automatically and a Participant's Awards shall be treated in accordance with one or more of the methods set forth in Section 11.1 of the Plan, as determined by the Committee.

(d) Forfeiture . Subject to the Committee's discretion to accelerate vesting hereunder, all unvested RSUs shall be immediately forfeited upon the Participant's Termination for any reason.

4. **Delivery of Shares** .

(a) General . Subject to the provisions of Section 4(b) hereof, within thirty (30) days following the vesting of the RSUs, the Participant shall receive the number of shares of Common Stock that correspond to the number of RSUs that have become vested on the applicable vesting date, less any shares withheld by the Company pursuant to Section 8 hereof.

(b) Blackout Periods . If the Participant is subject to any Company "blackout" policy or other trading restriction imposed by the Company on the date such distribution would otherwise be made pursuant to Section 4(a) hereof, such distribution shall be instead made on the earlier of (i) the date that the Participant is not subject to any such policy or restriction and (ii) the later of (A) the end of the calendar year in which such distribution would otherwise have been made and (B) a date that is immediately prior to the expiration of two and one-half months following the date such distribution would otherwise have been made hereunder.

5. **Dividends; Rights as Stockholder** . Cash dividends on the number of shares of Common Stock issuable hereunder shall be credited to a dividend book entry account on behalf of the Participant with respect to each RSU granted to the Participant, provided that such cash dividends shall not be deemed to be reinvested in shares of Common Stock and shall be held uninvested and without interest and paid in cash at the same time that the shares of Common Stock underlying the RSUs are delivered to the Participant in accordance with the provisions hereof. Stock dividends on shares of Common Stock shall be credited to a dividend book entry account on behalf of the Participant with respect to each RSU granted to the Participant, provided that such stock dividends shall be paid in shares of Common Stock at the same time that the shares of Common Stock underlying the RSUs are delivered to the Participant in accordance with the provisions hereof. Except as otherwise provided herein, the Participant shall have no rights as a stockholder with respect to any shares of Common Stock covered by any RSU unless and until the Participant has become the holder of record of such shares.

6. **Non-Transferability; Lock-Up** . No portion of the RSUs may be sold, assigned, transferred, encumbered, hypothecated or pledged by the Participant, other than to the Company as a result of forfeiture of the RSUs as provided herein. Pursuant to Section 14.20 of the Plan, if requested by the Company or the Lead Underwriter, the Participant hereby agrees not to sell, contract to sell, grant any option to purchase, transfer the economic risk of ownership in, make any short sale of, pledge or otherwise transfer or dispose of, any interest in any Common Stock or any securities convertible into, derivative of, or exchangeable or exercisable for, or any other rights to purchase or acquire Common Stock (except Common Stock included in such public offering or acquired on the public market after such offering) during the Lock-Up Period. The Participant further agrees to sign such documents as may be requested by the Lead Underwriter to effect the foregoing and agrees that the Company may impose stop-transfer instructions with respect to Common Stock acquired pursuant to any of the Participant's Awards until the end of such Lock-Up Period. The restrictions set forth in this Section 6 may be noted in the stock ledger of the Company.

7. **Governing Law** . All questions concerning the construction, validity and interpretation of this Agreement shall be governed by, and construed in accordance with, the laws of the State of Delaware, without regard to the choice of law principles thereof.

8. **Withholding of Tax** . The Company shall have the power and the right to deduct or withhold, or require the Participant to remit to the Company, an amount sufficient to satisfy any federal, state, local and foreign taxes of any kind (including, but not limited to, the Participant's FICA and SDI obligations) which the Company, in its sole discretion, deems necessary to be withheld or remitted to comply with the Code and/or any other applicable law, rule or regulation with respect to the RSUs, and if the Participant fails to do so, the Company may otherwise refuse to issue or transfer any shares of Common Stock otherwise required to be issued pursuant to this Agreement. Any minimum statutorily required withholding obligation with regard to the Participant may be satisfied by reducing the amount of cash or shares of Common Stock otherwise deliverable to the Participant hereunder.

9. **Legend** . The Company may at any time place legends referencing any applicable federal, state or foreign securities law restrictions on all certificates, if any, representing shares of Common Stock issued pursuant to this Agreement. The Participant shall, at the request of the Company, promptly present to the Company any and all certificates, if any, representing shares of Common Stock acquired pursuant to this Agreement in the possession of the Participant in order to carry out the provisions of this Section 9 .

10. **Securities Representations** . This Agreement is being entered into by the Company in reliance upon the following express representations and warranties of the Participant. The Participant hereby acknowledges, represents and warrants that:

(a) The Participant has been advised that the Participant may be an “affiliate” within the meaning of Rule 144 under the Securities Act and in this connection the Company is relying in part on the Participant’s representations set forth in this Section 10 .

(b) If the Participant is deemed an affiliate within the meaning of Rule 144 of the Securities Act, the shares of Common Stock issuable hereunder must be held indefinitely unless an exemption from any applicable resale restrictions is available or the Company files an additional registration statement (or a “re-offer prospectus”) with regard to such shares of Common Stock and the Company is under no obligation to register such shares of Common Stock (or to file a “re-offer prospectus”).

(c) If the Participant is deemed an affiliate within the meaning of Rule 144 of the Securities Act, the Participant understands that (i) the exemption from registration under Rule 144 will not be available unless (A) a public trading market then exists for the Common Stock of the Company, (B) adequate information concerning the Company is then available to the public, and (C) other terms and conditions of Rule 144 or any exemption therefrom are complied with, and (ii) any sale of the shares of Common Stock issuable hereunder may be made only in limited amounts in accordance with the terms and conditions of Rule 144 or any exemption therefrom.

11. **Entire Agreement; Amendment** . This Agreement together with the Plan, contains the entire agreement and understanding between the parties hereto with respect to the subject matter contained herein, and supersedes all prior agreements or prior understandings, whether written or oral, between the parties relating to such subject matter. The Committee shall have the right, in its sole discretion, to modify or amend this Agreement from time to time in accordance with and as provided in the Plan. This Agreement may also be modified or amended by a writing signed by both the Company and the Participant. The Company shall give written notice to the Participant of any such modification or amendment of this Agreement as soon as practicable after the adoption thereof.

12. **Notices** . Any notice hereunder by the Participant shall be given to the Company in writing and such notice shall be deemed duly given only upon receipt thereof by the General Counsel of the Company. Any notice hereunder by the Company shall be given to the Participant in writing and such notice shall be deemed duly given only upon receipt thereof at such address as the Participant may have on file with the Company.

13. **No Right to Employment** . Any questions as to whether and when there has been a Termination and the cause of such Termination shall be determined in the sole discretion of the Committee. Nothing in this Agreement shall interfere with or limit in any way the right of the Company, its Subsidiaries or its Affiliates to terminate the Participant's employment or service at any time, for any reason and with or without Cause.

14. **Transfer of Personal Data** . The Participant authorizes, agrees and unambiguously consents to the transmission by the Company (or any Subsidiary) of any personal data information related to the RSUs awarded under this Agreement for legitimate business purposes (including, without limitation, the administration of the Plan). This authorization and consent is freely given by the Participant.

15. **Compliance with Laws** . The grant of RSUs and the issuance of shares of Common Stock hereunder shall be subject to, and shall comply with, any applicable requirements of any foreign and U.S. federal and state securities laws, rules and regulations (including, without limitation, the provisions of the Securities Act, the Exchange Act and in each case any respective rules and regulations promulgated thereunder) and any other law, rule regulation or exchange requirement applicable thereto. The Company shall not be obligated to issue the RSUs or any shares of Common Stock pursuant to this Agreement if any such issuance would violate any such requirements. As a condition to the settlement of the RSUs, the Company may require the Participant to satisfy any qualifications that may be necessary or appropriate to evidence compliance with any applicable law or regulation.

16. **Binding Agreement; Assignment** . This Agreement shall inure to the benefit of, be binding upon, and be enforceable by the Company and its successors and assigns. The Participant shall not assign any part of this Agreement without the prior express written consent of the Company.

17. **Headings** . The titles and headings of the various sections of this Agreement have been inserted for convenience of reference only and shall not be deemed to be a part of this Agreement.

18. **Counterparts** . This Agreement may be executed in one or more counterparts, each of which shall be deemed to be an original, but all of which shall constitute one and the same instrument.

19. **Further Assurances** . Each party hereto shall do and perform (or shall cause to be done and performed) all such further acts and shall execute and deliver all such other agreements, certificates, instruments and documents as either party hereto reasonably may request in order to carry out the intent and accomplish the purposes of this Agreement and the Plan and the consummation of the transactions contemplated thereunder.

20. **Severability** . The invalidity or unenforceability of any provisions of this Agreement in any jurisdiction shall not affect the validity, legality or enforceability of the remainder of this Agreement in such jurisdiction or the validity, legality or enforceability of any provision of

this Agreement in any other jurisdiction, it being intended that all rights and obligations of the parties hereunder shall be enforceable to the fullest extent permitted by law.

21. **Acquired Rights** . The Participant acknowledges and agrees that: (a) the Company may terminate or amend the Plan at any time; (b) the award of RSUs made under this Agreement is completely independent of any other award or grant and is made at the sole discretion of the Company; (c) no past grants or awards (including, without limitation, the RSUs awarded hereunder) give the Participant any right to any grants or awards in the future whatsoever; and (d) any benefits granted under this Agreement are not part of the Participant's ordinary salary, and shall not be considered as part of such salary in the event of severance, redundancy or resignation.

22. **Restrictive Covenants** . In further consideration of the Award granted to Participant hereunder, Participant acknowledges and agrees to be bound by the terms of certain restrictive covenants as set forth in Exhibit A attached hereto (the "Restrictive Covenant Agreement").

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement as of the date first written above.

CHARAH SOLUTIONS, INC.

By: _____

Name: _____

Title: _____

PARTICIPANTS

Name: _____

**AMENDMENT TO EXECUTIVE
EMPLOYMENT AGREEMENT**

This First Amendment to Executive Employment Agreement (“**AMENDMENT**”) is made this 11th day of May, 2017, by and between Charah, LLC (formerly known as Charah, Inc.) (the “**COMPANY**”) and Charles E. Price (“Executive”), (collectively the “**PARTIES**”).

1. The Parties entered into that certain Executive Employment Agreement on or about December 23, 2016 (the “**AGREEMENT**”).

2. Pursuant to Section 21 of the Agreement, the Parties hereby amend Section 3 by inserting the following sentence before the last sentence of the section:

“The Parties further agree that, notwithstanding the limitations set forth in this Section 3, Executive may serve as a member of the Board of Directors of Braidy Industries, Inc.”

In all other respects, the terms of the Agreement between Executive and the Company shall remain unchanged and in full force and effect.

IN WITNESS WHEREOF, Executive and the Company have executed this Amendment this day and year as first written above.

CHARAH, LLC

/s/ Charles Price

By: Charles Price

Its: President & CEO

CHARLES E. PRICE

/s/ Charles Price

Subsidiaries of Charah Solutions, Inc.

Entity	State or Other Jurisdiction of Incorporation or Organization
Charah Sole Member LLC	Delaware
Allied Power Sole Member, LLC	Delaware
Charah, LLC	Kentucky
Allied Power Management, LLC	Delaware
Ash Management Services, LLC	Kentucky
Green Meadow, LLC	North Carolina
Ash Venture LLC	North Carolina
CV Ash, LLC	Texas
Allied Power Services, LLC	Delaware
Charah Plant Services, LLC	Delaware
Allied Power Resources, LLC	Delaware
Charah Management LLC	Delaware
Allied Power Holdings, LLC	Delaware
Allied Power International, LLC	Delaware
SCB International Holdings, LLC	Delaware
Mercury Capture Intellectual Property, LLC	Delaware
SCB Trading, LLC	Connecticut
Mercury Capture Beneficiation, LLC	Delaware
Nutek Micro-Grinding, LLC	Connecticut
Oreco Trading, Inc.	Panama
SCB Europe S.a.R.L.	Italy

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement No. 333-225717 on Form S-8 of our report dated March 27, 2019, relating to the financial statements of Charah Solutions, Inc. and subsidiaries appearing in this Annual Report on Form 10-K of Charah Solutions, Inc. for the year ended December 31, 2018.

/s/ Deloitte & Touche LLP

Louisville, Kentucky
March 27, 2019

CERTIFICATION

I, Scott A. Sewell, certify that:

1. I have reviewed this Annual Report on Form 10-K of Charah Solutions, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - c. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 27, 2019

/s/ Scott A. Sewell

Scott A. Sewell

President and Chief Executive Officer

(Principal Executive Officer)

CERTIFICATION

I, Nicholas W. Jacoby, certify that:

1. I have reviewed this Annual Report on Form 10-K of Charah Solutions, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - c. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 27, 2019

/s/ Nicholas W. Jacoby

Nicholas W. Jacoby

Interim Chief Financial Officer and Treasurer

(Principal Financial Officer)

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

In connection with the Annual Report on Form 10-K of Charah Solutions, Inc. (the "Company") for the fiscal year ended December 31, 2018, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Scott A. Sewell, President and Chief Executive Officer of the Company, certify, 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 27, 2019

/s/ Scott A. Sewell

Scott A. Sewell

President and Chief Executive Officer

(Principal Executive Officer)

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

In connection with the Annual Report on Form 10-K of Charah Solutions, Inc. (the "Company") for the fiscal year ended December 31, 2018, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Nicholas W. Jacoby, Interim Chief Financial Officer and Treasurer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 27, 2019

/s/ Nicholas W. Jacoby

Nicholas W. Jacoby

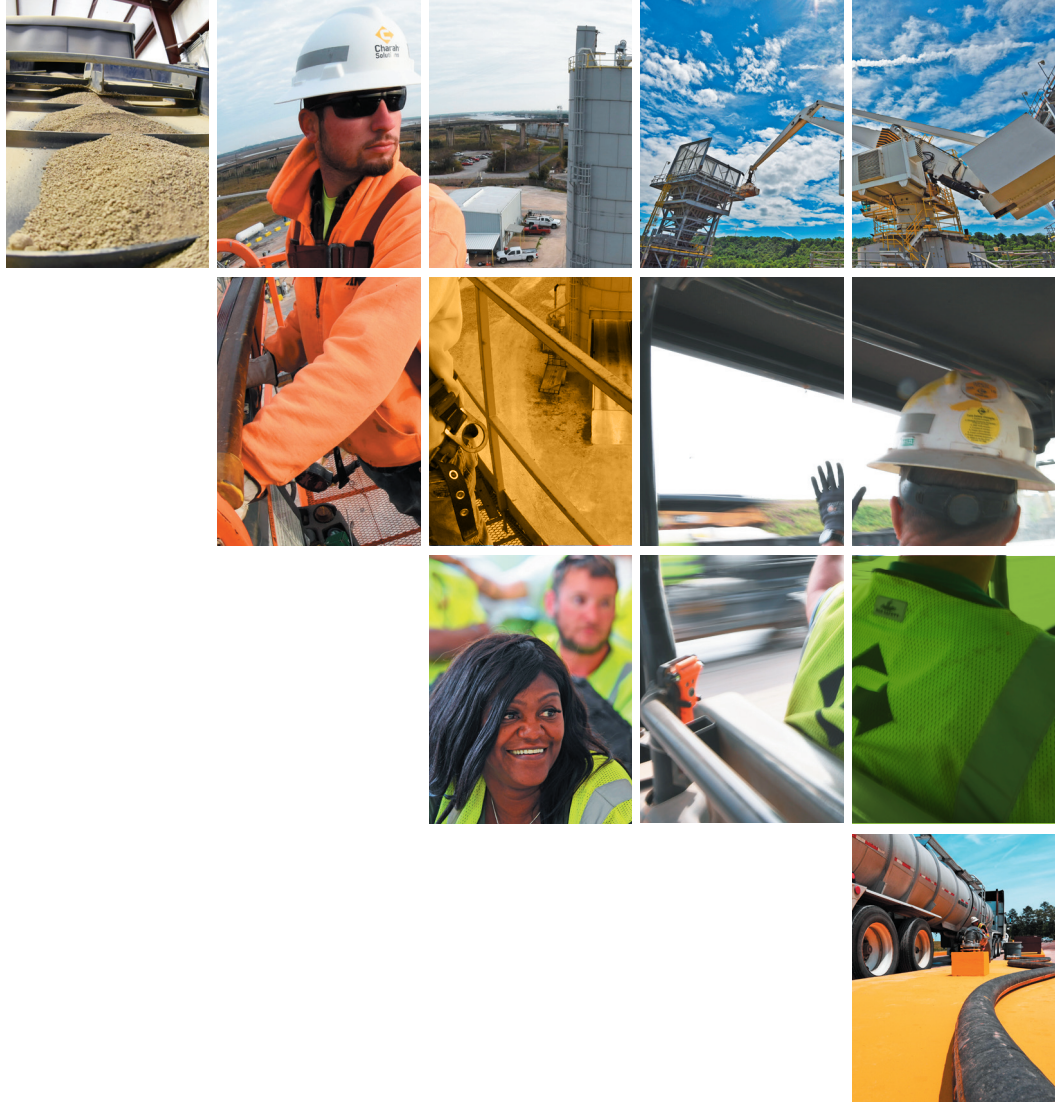
Interim Chief Financial Officer and Treasurer

(Principal Financial Officer)

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SERVICE ABOVE ALL.





TOLL-FREE: 877-314-7724

PHONE: 502-245-1353

WEBSITE: charah.com

Charah Solutions, Inc.

12601 Plantside Drive

Louisville, KY 40299



**Charah
Solutions**

Service Above All