



THE DOE RUN COMPANY

**2017**

Sustainability  
Report



# Contents

---

|   |    |
|---|----|
| 2017 Message from the CEO .....                           | 3  |
| Employee Health and Safety Improvements .....             | 7  |
| Historic Site Remediation: Preparing for the Future ..... | 10 |
| Invested in Our Community .....                           | 13 |
| Investing in Underground Mine Safety .....                | 16 |
| Job Training Through Doe Run Internships .....            | 18 |
| Lead Batteries Provide Essential Energy Everyday .....    | 20 |
| Missouri Vendor Improves Haulage Efficiency .....         | 22 |
| The People Behind Doe Run's Water Management .....        | 24 |
| Performance Data .....                                    | 26 |
| Social .....  | 26 |
| Environmental .....                                       | 31 |
| Economic .....  | 36 |
| Management Approaches .....                               | 37 |
| Corporate Governance .....                                | 44 |
| Reporting Process .....                                   | 47 |
| GRI Index .....   | 52 |



## **This is a dynamic PDF**

Click on a section or sub-section  
above to link to its respective page.

## 2017 Message from the CEO

---

<https://doerun.com/media/news/2017-message-from-the-ceo/>



Jerry L. Pyatt, President and Chief Executive Officer

Doe Run is proud to be a natural resource company with more than 150 years of operation and a pivotal player in the circular economy of lead batteries.

We provide raw materials (concentrates) to produce lead, copper and zinc metals, and recover metals (lead) by recycling nearly 13.5 million lead batteries each year. Lead batteries are an essential energy tool that the world depends on. We recover and recycle the lead from spent batteries, and return that valuable resource to future batteries in a closed-loop, potentially infinite cycle.

Doe Run's ability to contribute to the battery lifecycle successfully depends on our ability to balance social, economic and environmental responsibilities. Both our long-term and short-term decisions are made with these principles in place. We believe this makes us a stronger, more competitive business.

While our work is satisfying, it's not without challenges. In 2017, the lead industry recovered from a two-year period of low lead prices due to slower economic growth in China. As prices recovered, we added back jobs and capital projects that had been reduced or cut, and expanded our exploration and underground mine development activities.



Despite the lower prices in 2015 and 2016, we continued work on our environmental projects—spending more than \$192 million between 2015 and 2017. This includes building the last of five high-tech water treatment facilities at our mines and mills, and remediation work in the tri-state area of Kansas, Missouri and Oklahoma.

We’ve continued to complete our environmental project responsibilities, while still making critical investments in the business and in keeping our workers safe. In 2017 alone, we had nearly \$58 million in environmental spending, while also paying \$9 million in government royalties, \$6 million in property taxes, and \$21 million in capital spending to help sustain our business and maintain our safety standards. The fact that environmental regulatory spending is such a big part of our expenditures plays a major factor in our ability to spend money on new projects that make us more competitive and prepare us for the future.

## Leading the Way in Employee Safety

Protecting our workforce is an ongoing strategic initiative and a responsibility I take personally. We measure, monitor and manage workforce safety primarily through good hygiene and safe working habits.

In 2017, our workforce achieved a new record low average blood-lead level for our exposed workers of 9.59 micrograms of lead per deciliter of whole blood (“µg/dL”). This is well under federal Occupational Safety and Health Administration (OSHA) requirements, which require a worker to be removed from exposure to lead if their blood-lead level exceeds 53 µg/dL.

Working safely is another way we protect our employees. Our employees achieved several safety awards in 2017:

- **Buick Mine and Mill** achieved the highest national honor for mine safety – the Sentinels of Safety Award.
- **Brushy Creek Mill** surpassed 10 years with no lost-time accidents.
- **Seafab Metals Company**, our manufacturing subsidiary, earned its 18th “Perfect Record Award” in a row from the National Safety Council.

We are proud of our safety record and the measures we have in place to protect employees, and continue to evolve to meet tightening regulations. In 2017, we were required to replace functioning designated points of safety chambers located in our mines with new refuge chambers, an investment of \$640,000. We are required to install additional chambers in the coming year.

The Mine Safety and Health Administration required these new chambers to meet the same regulations required of coal mines. Our mines are significantly different than coal mines because hard-rock mineral mines like ours do not have the same fire risks as do coal mines for two reasons: they do not contain explosive methane gas, and the minerals and rock in our mines are not combustible, like coal. While the new chambers certainly address safety concerns, and are likely over-designed for hard-rock mines, changes in regulatory interpretation of various rules affect our ability to use limited resources to sustain our business. This is something we work hard to overcome.

---

In 2017, our workforce achieved a new record low average blood-lead level for our exposed workers of 9.59 micrograms of lead per deciliter of whole blood (“µg/dL”). This is well under federal OSHA requirements, which require a worker to be removed from exposure to lead if their blood-lead level exceeds 53 µg/dL.

---

## Investing in the Future

Part of being a responsible business is understanding the needs of your communities. We conducted another community survey in 2017 to gauge our communities’ interests.

We’re pleased that respondents rated our ability to meet our environmental obligations as one of our top three performing areas. One common concern expressed was taxation. Doe Run has appealed certain local property taxes, and this appeal process has taken far longer than expected. We look forward to a decision that provides greater clarity, so that future disputes may be avoided. We are committed to paying our fair share and operating in a prudent manner, utilizing our financial resources appropriately, so that we can continue to provide jobs and economic benefits to the communities in which we work for years to come.

Our community members also noted the greatest issue facing the community is availability of good jobs. Mining jobs in Missouri – including Doe Run’s – outperform average Missouri wages. We increased our staff in 2017 and continue to look for the right talent to help us meet growing demand for minerals.

Our hiring decisions are based on a desire to improve how our business operates. We have to ask ourselves each day, how can we do something better, and what can help us do this?

One way Doe Run looks to improve its competitiveness is through effective use and management of current and historical exploration data. We put new data tools in place to help us analyze large volumes of data to improve our exploration results. Today, mining data is as critical as mining ore, if you intend to be prepared for the future.

Doe Run continues to invest in our regional exploration programs to ensure we have ore reserves for the future. Software programs provide three-dimensional modeling and mine scheduling to help us better understand the ore resource and determine the best development plans. This is critical for life-of-mine planning and securing our future.

Our research and technical development team continues to explore how we can get more value out of the minerals in our own backyard. We have a number of technologies in various stages of development that can help us with this.

We believe the future of mining will look quite different than how we mine today. New technologies that increase automation are already coming into play. Our future workforce will require strong science, technology, engineering and math (STEM) backgrounds, as well as analytic thinking. For this reason, we sponsor several university scholarships and fund STEM education in K–12 through support of **Project Lead The Way**.

---

Our future workforce will require strong science, technology, engineering and math (STEM) backgrounds, as well as analytic thinking. For this reason, we sponsor several university scholarships and fund STEM education in K–12 through support of Project Lead The Way.

---

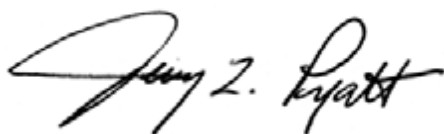
## Paving the Path for Lead Batteries

Finally, industry analysts continue to have a positive outlook on the lead industry. Although recycling lead meets a large percent of the domestic demand, new uses of lead in batteries for renewable energy storage mean we need more lead than can be met through recycling alone.

Lead batteries meet more than 75 percent of the world's requirements for energy storage. This safe, dependable battery starts approximately 1 billion vehicles every day, and supports energy storage demands for renewable energy, grid stability and uninterruptible power. And yet, some policymakers and regulators do not have a modern-day view of lead batteries' benefits. For this reason, we joined the Advanced Lead Battery Communication Initiative with other lead producers, recyclers and battery manufacturers to educate key stakeholders of the success story of lead batteries. [Read more about it here.](#)

I invite you to learn more about lead batteries and their role as the essential, sustainable, innovative and safe energy storage device of the future at [essentialenergyeveryday.com](http://essentialenergyeveryday.com). I also encourage you to explore this sustainability report to learn how we at Doe Run strive to meet our commitments to be a good neighbor.

Sincerely,



Jerry L. Pyatt

President and Chief Executive Officer

[Corporateinfo@doerun.com](mailto:Corporateinfo@doerun.com)

# Employee Health and Safety Improvements

---

<https://doerun.com/media/news/employee-health-and-safety-improvements/>



In lead mining and recycling, two employee safety measures are critical: blood-lead levels and incident rates. In 2017, Doe Run improved in both areas, reaching significant safety milestones at several facilities.

Blood-lead levels measure the trace amount of lead the body absorbs. The Occupational Safety and Health Administration requires monitoring of blood-lead levels and removal of employees with levels greater than 50 ug/dL (lead per deciliter of whole blood). Doe Run, as a member of the International Lead Association, has set a more stringent removal level of 30 ug/dL, and uses 19 ug/dL as a tracking milestone. In 2017, our Metals Division saw more than an 80 percent decline in employees who had blood-lead levels over 19 ug/dL compared to 2016. Last year, only 26 employees had blood-lead levels over 19  $\mu$ g/dL, compared to 134 in the previous year.

“Setting a more aggressive target serves as a check-in point as we monitor our employees’ exposure,” said Justin Province, environmental services manager at Resource Recycling. “The results speak for themselves.”

Employees may be exposed to lead through inhalation or ingestion. Recent equipment upgrades at Resource Recycling were designed to further reduce employee exposure. Our new Breaking, Separation and Neutralization (BSN) process limits the potential migration of lead-bearing materials from batteries into the work area. Relocation of the drum shredder to a more isolated area also reduces potential lead exposure for employees. We already have pressurized air systems to keep lead particles out of our control rooms, and in 2017 we began adding an additional buffer space, called a foyer, between the control room and the rest of the plant.



Every employee at every operation is required to follow hygiene and safety procedures. Depending on an employee's job duties and location, those precautions may include:

- Wearing personal protective equipment, such as a full-face respirator, glasses and gloves.
- Wearing a uniform that is laundered after use.
- Washing hands and changing uniforms before eating.
- Showering before heading home for the day.

"If an employee reaches a blood-lead level of 19  $\mu\text{g}/\text{dL}$ , we work with them one-on-one to make sure they are following all hygiene best practices," said Justin. "If it's necessary, we may reassign an affected employee to another area of the plant to reduce potential exposure."

## Reduced Workplace Incidents

Workplace incidents also declined at Doe Run in 2017.

"We've always had a robust safety training program, but we saw a slight rise in our accident rate a few years ago. We took a hard look at how we could improve these programs, and we're proud of the success those improvements made," said Mark Yingling, vice president – environment, health and safety.

Safety teams at each division implemented more proactive workplace checks and observations to find and fix potential hazards before an accident happens. These critical examinations solved small problems before they became big issues. Whenever an employee identifies a potential hazard, we create a list of corrective actions for evaluation and record the date of when a corrective action was completed to ensure that hazards are fully addressed. This detailed approach was part of how we decreased our incident rate by 53 percent in 2017.

Every employee shares responsibility to keep our workplace safe. Employees participate in ongoing health and safety training, part of the more than 16,000 hours of training they received in 2017. [Read more about how we keep employees safe underground here.](#)



---

“Facilities in every area of our business – our mines, our mills, our recycling plant and our fabrication plant – achieved major safety and health milestones and national recognitions this year. I’m proud to work at a place where employees embrace a safety culture every day.”  
— Amy Medlock, safety specialist at SEMO

---

Thanks to our safe work practices, several of our locations reached important milestones and earned safety awards in 2017:

- Buick Mine and Mill earned the highest national honor for mine safety – the Sentinels of Safety Award. This marked the 28th time Doe Run and its predecessor companies earned this distinction.
- Brushy Creek Mill surpassed 10 years with no lost-time accidents.
- Our manufacturing subsidiary Fabricated Products, Inc., received another “Perfect Record Award” from the National Safety Council, which it has earned each year since 2000.

[Read more about our safety achievements here.](#)

# Historic Site Remediation: Preparing for the Future

<https://doerun.com/media/news/historic-site-remediation-preparing-for-the-future/>



Early remediation work completed in 2013 enabled approximately 18 acres of riverfront property to be repurposed into a commercial port.

Throughout the country, sites that used to be home to historic mining operations centuries ago have been abandoned. Companies, like Doe Run, are reclaiming these lands to restore them or to give them new purpose. Our mine remediation teams are preparing former lead mining and metals sites in Missouri, Montana and Kansas to attract industry or rehabilitate natural habitats.

“Mining companies’ practices for mine waste often mean that chat and tailings, the leftover materials from the milling process, are placed in piles and impoundments next to their operations,” said Chris Neaville, Doe Run’s asset development director.

“Today, mining companies like ours are still cleaning up former mine sites. In the future, mining operations won’t need remediation, because we plan for a location’s closure before mining even begins, setting aside money to prepare it for future use and storing waste in a responsible way as we mine.”

Doe Run's mine remediation efforts improved several historic mining and metal production communities over the last 20 years. The company has invested more than \$90 million since 1997 on former mining sites where we've created parks and public spaces, and redeveloped the sites for business growth.

## Paving the Way for New Industry

In 2017, Doe Run began removing portions of our former primary lead smelter in Herculaneum, Missouri. We also continued to remove vacant houses and other nearby buildings we previously purchased. In 2018, we expect to remove additional structures planned for tear-down. The site's office building, medical surveillance building, and stack and water treatment plant are currently planned to remain. Once the designated structures are removed, we will work with the U.S. Environmental Protection Agency (EPA) on the next steps in preparing the site for future use.

Already, early remediation work completed in 2013 enabled approximately 18 acres of riverfront property to be repurposed into a commercial port. The Riverview Commerce Park LLC (RCP) shipping port now operates two loading docks that ship soybeans, corn, steel and fracking sand from Herculaneum using the Mississippi River's 15,000-mile inland waterway system.

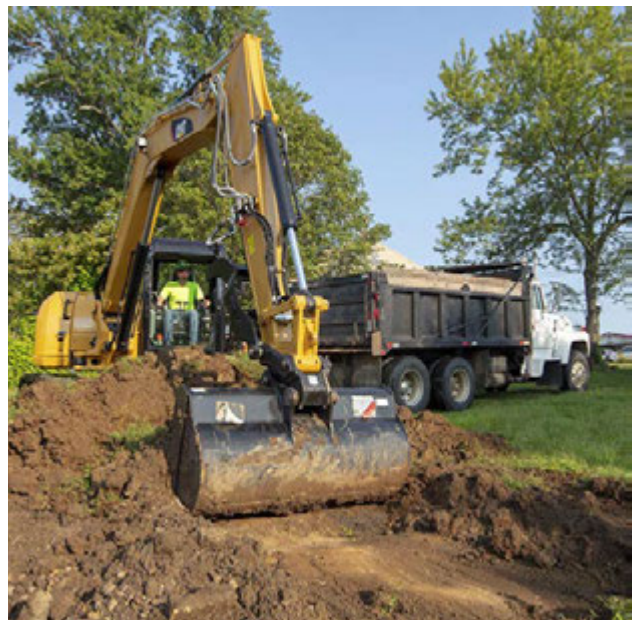
"Direct access to the shipping port already has benefitted local companies, and rail access would enhance our region's flexibility as a logistics hub," said Neaville.



## Remediating the Old Lead Belt

As part of an agreement with the EPA, a subsidiary of Doe Run began remediating 100 residential yards in St. Francois County in 2017. Lead mining has taken place in this region by individuals and various mining companies for more than 300 years. As one of the last major operators in Missouri, Doe Run is assisting regulators to address non-naturally occurring sources of lead in residential soils where we had historic operations.

Doe Run actively supervises the soil removal and replacement in particular yards designated by the EPA and where soil sampling results indicate lead levels in soil above 400 parts per million (ppm), the threshold designated by the EPA for soil remediation.



The process begins with the contractor meeting with the property owner to discuss the work and schedule. Before excavation takes place, all utilities are marked. Next, contractors excavate the property by removing up to 12 inches of soil and conducting further tests to determine if the property is ready for clean soil.

When the yard is ready, clean soil is placed. The final steps include grading the yard and seeding the remediated yard to promote grass growth. A final meeting with the owner to review the work completes the project. Residents incur no costs other than the cost to water their lawns to promote grass growth. Further details on the project can be found on the [EPA's website](#).

“We will work closely with the EPA throughout this project, and hope to reduce inconveniences for homeowners,” Neaville said. “A next phase will address additional yards in the area. Work is expected to be completed in 13 years.”

## Work Outside Missouri

Doe Run also handles the mine remediation of legacy sites in Montana, Kansas and Oklahoma that were owned by predecessor companies. Those sites include the Block P mine in Montana – a federal Superfund site once owned by our predecessor, St. Joseph Lead Company.

Mining began in the area in the late 1800s when prospectors found exposed minerals in Galena Creek. The Block P mine was built alongside the creek to further explore the area. In 2017, we plugged seeps from the underground mine with a specially formulated concrete to prevent mine water from impacting the creek. Water in the mine can react with minerals in the mine and become highly acidic. The work prevented the mine water from impacting the stream, enabling the stream's water to return to normal pH levels.

Finally, we concluded mine site remediation work in Treece, Kansas, in 2017. We capped and vegetated two chat piles left behind by Kansas Exploration, a subsidiary of St. Joseph Lead Company. That work marks the end of Doe Run's eight-year, \$15 million investment remediating the Kansas, Missouri and Oklahoma tri-state area. Local plant species will reclaim the land and turn it into a habitat for plants and wildlife once again.



# Invested in Our Community

---

<https://doerun.com/media/news/invested-in-our-community/>



Doe Run's proud to invest in the communities that are near our operations and home to many of our employees. Doe Run's community support centers on providing educational opportunities, and improving health and safety for our employees and neighbors. Credit: Missouri Department of Natural Resources

Southeast Missouri boasts many beautiful rural communities that our employees call home.

Understanding what residents of those communities have on their mind is important to us, so we regularly survey our neighbors. We use their feedback in our decision-making and community outreach efforts. In 2017, we conducted our third community survey in seven years with residents living near Viburnum, Boss, Herculaneum, Glover and the Old Lead Belt.

"A reoccurring theme of the survey results is concern for quality jobs in the area, and the opportunity they bring to future generations," said Mark Coomes, vice president – human resources and community relations. "Our neighbors want their families to have the ability to get a good job close to home. That's why we are investing heavily in our area's future workforce through education."

In 2017, Doe Run donated \$10,000 to add Project Lead The Way curriculum to the Valley R-VI School District. This four-year science, technology, engineering and mathematics (STEM) curriculum prepares students to solve real-world problems in a collaborative environment. For example, students use lab equipment to run DNA sampling and learn the correlations between genetics and disease.

“Project Lead The Way benefits schools that educate many of our employees’ children,” said Tom Yanske, Doe Run mine services manager, who helped foster the partnership with Valley R-VI. “The new STEM curriculum exposes 65 students in grades 7-12 to critical science-based, problem-solving skills.”

As a professional engineer, Tom understands the value of hands-on STEM learning and has passed that along to his three children who have pursued careers in engineering, information technologies and education. Nearly 20 percent of all current U.S. jobs require STEM skills or training, and that requirement will only increase. STEM careers don’t require advanced degrees in areas like engineering. Nearly half of STEM jobs don’t need a four-year degree, including metal production and mining careers.



Doe Run is committed to educating the next generation of industry leaders about the importance of metals and mining. In 2017, Doe Run donated \$10,000 to add Project Lead The Way curriculum to the Valley R-VI School

“Virtually every job at Doe Run requires some mastery of STEM skills,” said Tom. “For example, our maintenance team applies science daily by using their knowledge of how electricity and hydraulics work to repair machinery. A number of our miners operate loaders with remote controls, similar to remotes used for gaming. STEM thinking provides foundational skills that prepare students for mining careers and other jobs that will evolve with technological advances.”

Garnering positive feedback from both students and parents, Project Lead The Way plans to add a second course at the Valley R-VI high school and expand to the elementary classes in the next two years.

Doe Run also contributed to the following STEM education initiatives in the area in 2017:

- Annually, we provide \$10,000 in scholarships to Missouri University of Science and Technology (Missouri S&T) and Mineral Area College.
- Company employees visit local elementary schools to lead hands-on activities that teach children about the importance of minerals.
- We donated \$50,000 to Missouri S&T for a new Ingersoll Rand R1101 air compressor. The equipment gives students hands-on experience with real tools used in our mines for their drilling and blasting classes.
- We created our Nursing Scholarship Fund to provide a \$1,000 per semester scholarship for students enrolling in the new nursing program at Southwest Baptist University’s (SBU) Salem campus.

---

Our industry continues to grow, with an expected 50,000 new mining employees by 2019, and 2 million manufacturing jobs over the next decade. Doe Run is investing in STEM education in our region so our children are ready for the mining careers and high-tech jobs of tomorrow.

---

## Addressing Environmental Impacts

Our survey also asked community members about how they perceive Doe Run. In our 2012 survey results, we heard that the community expected us to do a better job meeting environmental obligations. Since then, we've made significant investments that improve our environmental impact. Our neighbors now rank our ability to meet our environmental obligations as one of our top three performing areas.

"We've completed a five-year \$73 million upgrade to our water treatment process and made other investments at Resource Recycling to reduce environmental impact," said Mark. "We're proud of how these accomplishments positively impact our people, our community and our shared natural resources."

## Areas for Improvement in 2018

In 2017, our communities helped us identify areas of improvement where we will focus our efforts in the future. Our neighbors want to see Doe Run even more involved in our community. As lead prices declined sharply during the last few years, we scaled back some community outreach.

When lead prices rebounded in 2017, we're again focusing more on community involvement. We are looking at company resources and facilities, which could be repurposed to support access to health care in the Viburnum area, and expanding support of STEM activities in Rolla. We also are continuing to support annual community events, such as Old Miners' Days and Fall Rocks.

The survey feedback also revealed frustration about our property tax appeal in Reynolds County.

The appeal was originally brought on by a more than 30 percent increase in the tax bill for our mining operations.

When we appealed the assessment, it became clear there was not a defined process for valuing our property. We are committed to seeing the appeal to its endpoint in order to have a defined method for property tax valuation. During the appeal process, we continue to pay the full assessed value of the property.

"We are committed to paying our fair share of taxes and are eager to have a definition of how property taxes should be computed rather than continue in an arbitrary process," said Mark. "We would like to see a decision reached as soon as possible for the benefit of the county, its residents and our company, so we can continue to operate here for years to come."



# Investing in Underground Mine Safety

---

<https://doerun.com/media/news/investing-in-underground-mine-safety/>



Nearly 425 Doe Run employees spend their work day approximately 1,200 feet underground. For some, the comfortable 65-degree temperature makes for a perfect work environment. Those who go underground for the first time are often surprised at how vast and open our mines are.

“Our mines are cavernous with roads and large haul trucks driving through them. Equipped with advanced technology, the mines run like small towns,” said Jason England, safety manager at Doe Run’s Southeast Missouri Mining and Milling Division (SEMO). “Our mines are among the safest in the country because we follow best practices in safety and invest in new technology.”

Doe Run works to stay ahead of safety risks and underground mine safety requirements by investing in the next generation of underground mine safety technologies.

---

Doe Run’s underground metal mines have earned 28 Sentinels of Safety Awards, the highest honor for underground mine safety performance. The National Mining Association presented this award to Buick Mine and Mill in 2017.

---



## Fighting Fire with Technology

While underground fires in metallic mines, like Doe Run's mines, are unusual (since our ore does not burn and methane gas is not a byproduct in metallic mines), it is possible for heavy mobile equipment, such as haul trucks and front-end loaders, to overheat underground. In 2017, Doe Run added new, onboard fire suppression systems to use in the event of equipment fires.

"With this new onboard system, in the unlikely event of overheated equipment, an employee simply pushes a plunger to activate the vehicle's fire suppression system," said Jason. "This improves response time and fire suppression efficiency."

Each vehicle with a fire suppression system also has a backup fire extinguisher. In addition, each Doe Run mine is equipped with a fire cart. Doe Run mine rescue teams can use a fire cart to pump 250 gallons of water and fire-retardant foam in the event the onboard system does not extinguish an equipment fire. [Read more about Doe Run's mine rescue teams here.](#)

## Safe Havens Underground

In the event of an underground equipment fire or other emergency requiring sheltering in place, employees can take refuge in underground safety chambers. In 2017, Doe Run spent \$640,000 to install the first eight of 30 planned underground safety chambers.

"Our existing safety chambers had a good track-record of protecting employees in the unlikely event of an incident underground. "These new, steel chambers are the size of a truck trailer, and include all the supplies miners need in the event they have to shelter underground for a period." said Jason.



Inside safety chambers, employees have access to food, water, oxygen and other essentials.

Like our previous safety chambers, these new facilities are equipped with water, oxygen tanks, first aid kits, tools, lights and filtered air. The new shelters also include food, benches and a toilet. The shelters are connected to mine power, and can run on batteries for 48 hours if mine power is lost. Wired phone lines let employees communicate with team members aboveground, and gas detectors monitor air quality. A member of the mine rescue team thoroughly inspects supplies and gas detectors monthly.

As the new chambers come off the production line, they are installed in our mines. A total of 30 chambers will be in place by the end of 2020, at an investment of \$2.4 million.

# Job Training Through Doe Run Internships

---

<https://doerun.com/media/news/job-training-through-doe-run-internships/>



Doe Run internships give students the hands-on training they need for successful careers in the mining and metal production industries. Our interns apply their classroom learning in the mines, mills, recycling plant and corporate offices.

During his internship, Peter Hunter got real-world experience in our underground mines. A mine engineering student from the South Dakota School of Mines & Technology, Peter spent the summer as an underground mining intern at Casteel Mine.

As part of his internship, he installed a new 250-horsepower fan in the north end of the mine.

“I was excited to work on a project that was necessary – not just one that created work for an intern,” Peter said. “When I went down into the mines last summer, I was keenly aware of the importance safety plays underground. I was impressed with how Doe Run makes it a priority at both the surface level and underground.”

The new fan will provide better airflow underground, creating an improved underground environment.

“Mine fans are essential to move fresh air deep into the mines, so miners can safely produce ore and explore deeper ore bodies,” said Bob Bosch, mine superintendent at Casteel Mine and Mill. “We included Peter in this project to help him learn how to manage underground ventilation.”

Historically, Doe Run relied on fans that workers started and stopped manually when they were needed. It was inefficient and took longer to move fresh air into the depths of the mine. The new soft start fan uses a timer to turn on when it’s needed. The fan’s timer shuts off automatically when there are no workers underground. Because the new fan runs more efficiently, it saves around \$17,000 on Doe Run’s electricity costs annually.



**Bob Bosch, mine superintendent at Casteel Mine and Mill**

Peter collaborated with electrical contractors to install the fan and analyzed air readings to evaluate the fan’s performance. The new fan quickly increased quality airflow.

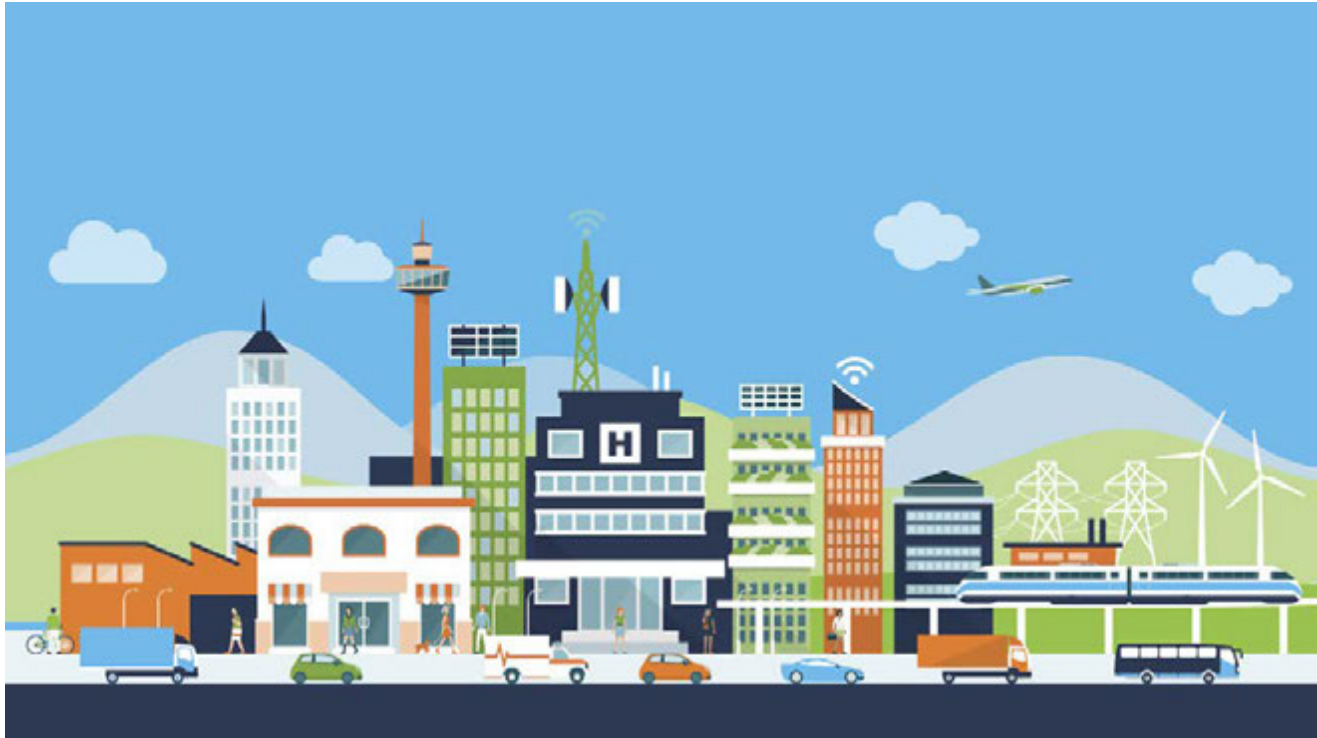
“When I returned to school, I was ahead of my classmates because of the real-world applications I learned during my summer ventilation project,” said Peter.

During his internship, Peter rotated between various teams to learn about the day-to-day activities that make up the mining process, such as high scaling and blasting. Peter also learned to run equipment, like loaders and pillar drills, as part of the full underground mining internship experience.

“I’m originally from Washington state, and I was eager to travel to Missouri and work at Doe Run for my first underground mining internship,” said Peter. “I immediately felt welcomed by the Doe Run team and the community. In fact, many of the employees I worked alongside in the mines also attended the local church I joined. It was interesting to be a part of a community that has been shaped by a long history of mining.”

# Lead Batteries Provide Essential Energy Everyday

<https://doerun.com/media/news/lead-batteries-provide-essential-energy-everyday/>



Lead batteries make up 75 percent of the world's battery market, and the global demand for stored energy is projected to grow from an annual installation size of 6 gigawatts (GW) in 2017 to over 40 GW by 2022, according to a study conducted by IHS Markit.

What's driving this growth? Domestic demand is driven by utility groups seeking to supplement power during peak demand, searching for a greener mix of energy sources and adjusting to a more electrified economy. Global growth is driven by the same demands, as well as remote access to power in developing areas of the world.

Despite the evident demand for stored energy, many policymakers and regulators making decisions on the future of energy storage have little understanding of the present and future role lead batteries will play in meeting tomorrow's energy needs.

With this as the backdrop, the U.S. lead battery industry launched its first communications and educational initiative in 2017 under the direction of the International Lead Association (ILA) and Battery Council International (BCI).



“It’s become increasingly clear that there’s a lack of understanding of the value lead batteries provide modern society and the potential they have to solve future energy requirements,” stated Jerry Pyatt, Doe Run president and CEO. “Research confirmed that policymakers and regulators in the transportation, energy storage, environment and public health sectors do not fully understand the extent to which lead batteries enable our economy, protect communications and data infrastructure, and contribute to a renewable energy future. It was time for our industry to respond.”

The educational initiative built upon earlier research and was developed under the direction of the lead battery industry (including Doe Run), and the management teams of BCI and ILA. The Advancing Lead Battery Communication Initiative (ALBCI) developed educational strategies and tactics around the theme of Essential Energy Everyday.

“We launched the Essential Energy Everyday initiative in fall 2017 with a **microsite** and digital communications campaign targeting policymakers and regulators,” stated Lisa Dry, director of strategic communications, BCI. “The microsite, subsequent videos and other materials included pertinent facts related to the four key attributes of lead batteries.”

- **Essential:** Lead batteries make up 75 percent of the world’s battery market, including starting 270 million cars and trucks in the U.S.
- **Safe:** Unlike newer battery technologies, lead batteries have more than a century of safe use in vital industries, such as transportation, communication, security, marine, nuclear, medical and aviation.
- **Innovative:** Performance improvements in lead batteries are transforming the transportation industry by reducing fuel consumption and CO2 emissions, powering next-generation vehicles (xEVs), and increasing vehicle electrical demands.



- **Sustainable:** Lead batteries have a 99 percent recycling rate, and every new lead battery is comprised of more than 80 percent recycled lead.

In addition to the website, the initiative conducted an economic impact survey of the U.S. battery industry, including lead miners, metal producers, battery manufacturers and recyclers. The study, which was published in January 2018, revealed that the lead battery industry contributes \$28 billion to our economy and employs more than 20,000 people. [Learn more about Essential Energy Everyday here.](#)

# Missouri Vendor Improves Haulage Efficiency

<https://doerun.com/media/news/missouri-vendor-improves-haulage-efficiency/>



Under the previous maintenance schedule, Doe Run's fleet of trucks had an average of 12 annual planned maintenance appointments to change the oil, inspect mechanical components for repair or replacement, check tires and schedule future repairs. These inspections take roughly eight hours to complete, resulting in 96 hours of downtime per truck per year.

"To decrease downtime, we began reviewing our lubricant product choice," said Gene Hites, Southeast Missouri Mining and Milling Division (SEMO) general maintenance manager. "For years, we used less expensive lubrication products in our equipment to reduce immediate costs. However, it became clear that to truly optimize the performance of the haulage fleet, we needed to take a serious look at what lubricant products could improve availability of the fleet."

Doe Run's SEMO operations consulted with an Exxon Mobil lubrication engineer and Wallis Lubricants, a Missouri vendor that develops solutions for mechanical equipment. The lubrication engineer evaluated and provided recommendations to improve the products we use in our equipment. Before working with Wallis, haulage trucks operated for an average of 250 hours in between routine maintenance. With a different lubricant from Exxon Mobil as part of the new maintenance program, haulage trucks operated for 375 hours between inspections without any additional issues. This reduced routine truck maintenance appointments from an average of 12 to 8 per year, which meant

32 more hours of operating time for each of our haulage trucks in 2017. The new maintenance schedule reduces time in the repair shop to allow each truck an opportunity to haul approximately 2.6 million more pounds of ore for crushing and milling each year.

---

**Intense workloads and mining conditions take a toll on commercial equipment, so Wallis and Doe Run continuously monitor and adjust lubricant use to make sure the trucks run at peak performance.**

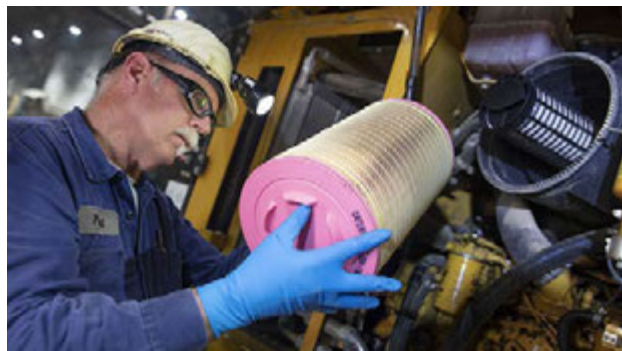
---

“New technologies are always coming out in the lubricant industry. It’s just like your phone. What was cutting edge two years ago is now obsolete,” said Gabe Williamson, business development manager at Wallis. “That’s why we constantly gather data to determine our best next steps.”

By working with Wallis, Doe Run became a Planned Engineer Service account with Exxon Mobil, meaning we are at the forefront of holistically managing our lubrication systems through extensive data collection and goal setting.

“Wallis now reviews maintenance data on other Doe Run equipment,” said Gene. “For our next project, we are working with Wallis to improve grease usage, so more equipment can run longer without maintenance. We will continue to adopt new techniques and products that improve machinery and equipment efficiency.”

The collaboration has positioned Wallis as experts in the mining industry. Based on what they have learned working with Doe Run, the company is helping other mining companies perfect lubricant use.



“It has been a pleasure working with Doe Run,” Gabe said. “The team sets objectives, listens to our recommendations and takes proper documentation of the equipment’s performance. That means we can give them increasingly better solutions. They are an ideal customer and partner because they are open to trying new things to make their process better.”



# The People Behind Doe Run's Water Management

---

<https://doerun.com/media/news/the-people-behind-doe-runs-water-management/>



Samantha Anderson calls Southeast Missouri her home – but that wasn't always the case. Samantha and her husband, who also works at Doe Run, are Tennessee natives who moved to Missouri for their careers.

They were quickly welcomed by their community, and enjoyed how the region's outdoor activity opportunities made it a great place to raise a family. Helping Doe Run protect this region's natural beauty drives Samantha at her job as an environmental manager in the Southeast Missouri Mining and Milling Division (SEMO).

"My husband and I chose to make Southeast Missouri our home because of the sense of community we felt and the natural beauty of the region," said Samantha. "It is here in Missouri that I discovered I have a real passion for environmental stewardship. One of my favorite projects has been working with a small team to develop Doe Run's water management strategy."

Samantha played a critical role in Doe Run's water management program, which includes the construction of five high-tech water treatment facilities at its mines and mills over the past five years. Doe Run completed the final plant in 2017.



---

“For a company with a long history, Doe Run is very innovative with workforce development. We collaborate in ways that you don’t see at larger mining companies. That means we can test our ideas and explore new areas. That’s how I found my love for environmental stewardship.”

– Samantha Anderson, Environmental Manager at SEMO

---

Doe Run invested nearly \$73 million in the water treatment plants. Samantha and the environmental team worked with Woodard & Curran to design and operate each plant – a project that earned Woodard & Curran an Engineering Excellence Award from the Missouri chapter of the American Council of Engineering Companies.

The five plants process approximately 35 million gallons of water a day. A chemical process improves water quality to better than permit levels before the water is released into waterways. The newest plant at West Fork Mine can process approximately 18,000 gallons of water per minute, almost twice the capacity of the other plants. The plant manages daily water output from West Fork Mine and Fletcher Mine and Mill, with the ability to handle much more, even during a heavy rain season.



Doe Run’s water treatment plants like the one shown here, treat mine and mill water to meet water permit limits.

“I’ve experienced tremendous personal and professional growth during my seven years with Doe Run,” said Samantha. “As a company, we want to continue to grow and develop in Southeast Missouri, and we know that comes with a responsibility to be sustainable. Doe Run’s water management strategy is key to meeting our regulatory commitments, while taking care of Earth’s vital resources. Keeping our shared environment clean is important to Doe Run.”

Over the next few years, Samantha and the environmental management team will analyze the performance of the water treatment plants and find potential opportunities for further improvement. The team will also oversee plans to build a larger retention pond at Brushy Creek Mine and Mill. This larger pond will have greater capacity to hold the surplus mill water, as well as rain that falls on the site. The larger pond may also allow for additional settling time for the water before it is treated in the plant.

# Performance Data

<https://doerun.com/sustainability/performance-data/>

## Social

### Workforce Summary

#### 102-8 (G4-10) Number of Employees by Division (Calendar Year)

| (number of employees) <sup>(1)</sup>                  | 2015         | 2016         | 2017         |
|---|--------------|--------------|--------------|
| Southeast Missouri Mining and Milling Division (SEMO) | 800          | 700          | 705          |
| Metals Division (Resource Recycling, Herculaneum)     | 312          | 313          | 322          |
| Corporate Headquarters <sup>(2)</sup>                 | 124          | 130          | 142          |
| Fabricated Products Inc. (FPI)                        | 42           | 41           | 40           |
| <b>Total Number of Employees<sup>(1)</sup></b>        | <b>1,278</b> | <b>1,184</b> | <b>1,209</b> |

#### 2017 Male and Female Employees by Division (Calendar Year)

|                                  | 2015         |            | 2016         |            | 2017         |            |
|----------------------------------|--------------|------------|--------------|------------|--------------|------------|
| (number of employees)            | Male         | Female     | Male         | Female     | Male         | Female     |
| SEMO                             | 733          | 67         | 652          | 48         | 656          | 49         |
| Metals Division                  | 293          | 19         | 296          | 17         | 301          | 21         |
| Corporate Headquarters           | 74           | 50         | 76           | 54         | 87           | 55         |
| FPI                              | 36           | 6          | 35           | 6          | 34           | 6          |
| <b>Total Number of Employees</b> | <b>1,136</b> | <b>142</b> | <b>1,059</b> | <b>125</b> | <b>1,078</b> | <b>131</b> |

#### Number of Employees by Employment Type (Calendar Year)

| (number of positions)            | 2015         | 2016         | 2017         |
|----------------------------------|--------------|--------------|--------------|
| Permanent Hourly Positions       | 898          | 846          | 854          |
| Permanent Salary Positions       | 375          | 331          | 351          |
| Temporary Positions              | 1            | 3            | 0            |
| Contracted Positions             | 4            | 4            | 4            |
| <b>Total Number of Employees</b> | <b>1,278</b> | <b>1,184</b> | <b>1,209</b> |

#### 2017 Male and Female Employees by Employment Type (Calendar Year)

|                                  | 2015         |            | 2016               |                   | 2017         |            |
|----------------------------------|--------------|------------|--------------------|-------------------|--------------|------------|
| (number of employees)            | Male         | Female     | Male               | Female            | Male         | Female     |
| Permanent Hourly Positions       | 874          | 24         | 822 <sup>(2)</sup> | 24                | 832          | 22         |
| Permanent Salary Positions       | 257          | 118        | 232 <sup>(2)</sup> | 99 <sup>(2)</sup> | 242          | 109        |
| Temporary Positions              | 1            | 0          | 1                  | 2                 | 0            | 0          |
| Contracted Positions             | 4            | 0          | 4                  | 0                 | 4            | 0          |
| <b>Total Number of Employees</b> | <b>1,136</b> | <b>142</b> | <b>1,059</b>       | <b>125</b>        | <b>1,078</b> | <b>131</b> |

(1) Employee counts for G4-10 include all categories of employees.

(2) In 2017, the Remediation Department headcount was moved from SEMO division to Corporate Headquarters.

#### 401-1 (LA1) New Employee Hires by Gender (Calendar Year)

Total number<sup>(1)</sup> and rate<sup>(2)</sup> of new employee hires entering employment during the reporting period broken down by gender.

|                                  | 2015      |       | 2016              |       | 2017               |       |
|----------------------------------|-----------|-------|-------------------|-------|--------------------|-------|
|                                  | Number    | Rate  | Number            | Rate  | Number             | Rate  |
| Male                             | 22        | 91.7% | 85 <sup>(3)</sup> | 96.6% | 129 <sup>(3)</sup> | 87.8% |
| Female                           | 2         | 8.3%  | 3 <sup>(3)</sup>  | 3.4%  | 18 <sup>(3)</sup>  | 12.2% |
| <b>Total Number of Employees</b> | <b>24</b> |       | <b>88</b>         |       | <b>147</b>         |       |

- (1) Employee counts exclude hiring and termination of temporary employees. Historically, the majority of the hourly workforce has been drawn from the temporary pool of employees.
- (2) The rate is calculated by dividing the hires by gender by the total number of hires.
- (3) Increased hiring in 2016 and 2017 reflects new hires primarily replacing those who retired or left voluntarily.

#### Employees Leaving by Gender (Calendar Year)

Total number<sup>(1)</sup> and rate<sup>(2)</sup> of employees leaving employment during the reporting period broken down by gender.

|                                  | 2015       |       | 2016       |       | 2017       |       |
|----------------------------------|------------|-------|------------|-------|------------|-------|
|                                  | Number     | Rate  | Number     | Rate  | Number     | Rate  |
| Male                             | 138        | 91.4% | 132        | 86.8% | 109        | 90.8% |
| Female                           | 13         | 8.6%  | 20         | 13.1% | 11         | 9.2%  |
| <b>Total Number of Employees</b> | <b>151</b> |       | <b>152</b> |       | <b>120</b> |       |

- (1) Employee counts exclude hiring and termination of temporary employees. Historically, the majority of the hourly workforce has been drawn from the temporary pool of employees.
- (2) The rate is calculated by dividing the terminations by gender by the total number of terminations.

#### New Employee Hires by Age Group (Calendar Year)

Total number<sup>(1)</sup> and rate<sup>(2)</sup> of new employee hires entering employment during the reporting period broken down by age group.

|                                  | 2015                    |       | 2016                    |       | 2017                     |       |
|----------------------------------|-------------------------|-------|-------------------------|-------|--------------------------|-------|
|                                  | Number                  | Rate  | Number                  | Rate  | Number                   | Rate  |
| 30 or younger                    | 14                      | 58.3% | 47                      | 53.4% | 65                       | 44.2% |
| 31 to 40                         | 3                       | 12.5% | 16                      | 18.2% | 45                       | 30.6% |
| 41 to 50                         | 4                       | 16.7% | 18                      | 20.5% | 26                       | 17.7% |
| 51 and above                     | 3                       | 12.5% | 7                       | 8.0%  | 11                       | 7.5%  |
| <b>Total Number of Employees</b> | <b>24<sup>(3)</sup></b> |       | <b>88<sup>(4)</sup></b> |       | <b>147<sup>(4)</sup></b> |       |

- (1) Employee counts for LA1 exclude hiring and termination of temporary employees. Historically, the majority of the hourly workforce has been drawn from the temporary pool of employees.
- (2) The rate is calculated by dividing hires by age group by the total number of hires.
- (3) Reduced hiring in 2015 reflects the company's adjustment to market conditions.
- (4) New hires primarily replaced those who retired or left voluntarily.

## Employees Leaving by Age Group (Calendar Year)

Total number<sup>(1)</sup> and rate<sup>(2)</sup> of employees leaving employment during the reporting period broken down by age group.

|                                  | 2015       |       | 2016       |       | 2017       |       |
|----------------------------------|------------|-------|------------|-------|------------|-------|
|                                  | Number     | Rate  | Number     | Rate  | Number     | Rate  |
| 30 or younger                    | 14         | 9.3%  | 20         | 13.1% | 18         | 15.0% |
| 31 to 40                         | 30         | 19.9% | 27         | 17.6% | 35         | 29.2% |
| 41 to 50                         | 31         | 20.5% | 29         | 19.0% | 20         | 16.7% |
| 51 and above <sup>(3)</sup>      | 76         | 50.3% | 76         | 50.3% | 47         | 39.2% |
| <b>Total Number of Employees</b> | <b>151</b> |       | <b>152</b> |       | <b>120</b> |       |

- (1) Employee counts for LA1 exclude hiring and termination of temporary employees. Historically, the majority of the hourly workforce has been drawn from the temporary pool of employees.
- (2) The rate is calculated by dividing the terminations by age group by the total number of terminations.
- (3) In 2015, 54% of departures reflect retirement. In 2016, 55% of departures reflect retirement. In 2017, 79% of departures reflect retirement.

*Doe Run continues to strive to accurately measure its environmental, economic and social data. Due to rounding, some percentage totals may not always equal 100 percent, but are accurate.*



## Health and Safety Performance

### 403-1 (LA6) Occupational Safety and Health

#### Employee Blood-Lead Average

The adjusted Occupational Health and Safety Administration's (OSHA) standard for medical reassignment of an employee is 53 micrograms of lead per deciliter of whole blood ("µg/dL").<sup>(1)</sup> Doe Run sets its maximum limit at 30 µg/dL. If any employee has a blood-lead average that reaches 30 µg/dL, they are temporarily reassigned to other work.

| (in µg/dL)   | 2015         | 2016         | 2017        |
|--|--------------|--------------|-------------|
| Southeast Missouri Mining and Milling Division (SEMO), including remediation and demonstration plant | 9.67         | 8.28         | 8.10        |
| Metals Division (Resource Recycling, Herculaneum, Glover) <sup>(2)</sup>                             | 15.01        | 14.83        | 13.35       |
| Corporate Headquarters <sup>(3)</sup>  | N/A          | N/A          | N/A         |
| Fabricated Products Inc. (FPI)   | 7.40         | 7.80         | 7.10        |
| <b>Average</b>   | <b>11.02</b> | <b>10.20</b> | <b>9.59</b> |

#### Employee Blood-Lead Data

Doe Run monitors and reports the number of employees with a blood-lead average greater than 19 µg/dL in the calendar year. The adjusted OSHA standard for medical reassignment of an employee is 53 µg/dL.<sup>(1)</sup> Doe Run sets its maximum limit at 30 µg/dL.

| (# of employees with blood-lead levels >19 ug/dL)                        | 2015       | 2016       | 2017                    |
|--|------------|------------|-------------------------|
| SEMO   | 38         | 23         | 5 <sup>(4)</sup>        |
| Metals Division (Resource Recycling, Herculaneum, Glover) <sup>(2)</sup> | 148        | 134        | 26 <sup>(4)</sup>       |
| Corporate Headquarters <sup>(3)</sup>                                    | N/A        | N/A        | N/A                     |
| FPI  | 2          | 2          | 1                       |
| <b>Total</b>   | <b>188</b> | <b>159</b> | <b>32<sup>(4)</sup></b> |

#### Total Lost-Time Accidents

According to OSHA, lost time is defined as a nonfatal traumatic injury that causes any loss of time from work beyond the day or shift it occurred, or a nonfatal nontraumatic illness/disease that causes disability at any time.

According to the Mine Safety and Health Administration (MSHA), lost time is defined as days which the employee would have worked but could not because of an occupational injury or an occupational illness.

| (number of employees)                                       | 2015      | 2016      | 2017     |
|---|-----------|-----------|----------|
| SEMO (includes Glover)                                      | 3         | 7         | 3        |
| Metals Division (Resource Recycling, Herculaneum)           | 7         | 6         | 4        |
| Corporate Headquarters                                      | 0         | 0         | 0        |
| FPI   | 0         | 0         | 0        |
| <b>Total number of work-related fatalities, companywide</b> | <b>1</b>  | <b>0</b>  | <b>0</b> |
| <b>Total</b>  | <b>11</b> | <b>13</b> | <b>7</b> |

## Total OSHA Recordables and MSHA Reportables

Total OSHA recordables and MSHA reportables are incidents that require lost time, restricted duty, prescription medication, involve broken bones or stitches, involve imbedded matter in the eye, or burns of a defined size and severity.

| (number of incidents)                            | 2015      | 2016      | 2017      |
|--|-----------|-----------|-----------|
| SEMO (includes Glover)                           | 33        | 33        | 21        |
| Metals Division (Resource Recycling, Herculanum) | 44        | 34        | 29        |
| Corporate Headquarters                           | 0         | 0         | 0         |
| FPI  | 0         | 1         | 0         |
| <b>Total</b>                                     | <b>77</b> | <b>68</b> | <b>50</b> |

## Total Case Incident Rate (TCIR)

TCIR is the number of OSHA recordable and MSHA reportable incidents per 200,000 personnel hours worked. OSHA recordables are incidents that require lost time, restricted duty, prescription medication, involve broken bones or stitches, involve imbedded matter in the eye, or burns of a defined size and severity.

| (TCIR rate)                                      | 2015       | 2016       | 2017        |
|--|------------|------------|-------------|
| SEMO (includes Glover)                           | 3.6        | 4.3        | 3.0         |
| Metals Division (Resource Recycling, Herculanum) | 12.2       | 9.7        | 11.26       |
| Corporate Headquarters                           | 0          | 0          | 0           |
| FPI  | 0          | 2.4        | 0           |
| <b>Total Company</b>                             | <b>5.6</b> | <b>5.5</b> | <b>4.18</b> |

- (1) The OSHA General Industry Lead Standard is written in units of  $\mu\text{g}$  of Pb/100g of whole blood. Doe Run reports their blood lead values in  $\mu\text{g}$  of Pb/dL of whole blood, and all values in this report are presented as  $\mu\text{g}/\text{dL}$ . The conversion used is  $1 \mu\text{g}/100\text{g} = 1.05 \mu\text{g}/\text{dL}$ .
- (2) Glover is included in the Metals Division for blood-lead data only due to the nature of their work.
- (3) Employees at corporate headquarters are not required to be tested.
- (4) Significant reductions in blood-lead level  $>19$  resulted from continued focus on employee hygiene and housekeeping procedures, and equipment changes at Resource Recycling.

## 404-1 (LA9) Workforce Training

### Average Hours of Training Per Employee (Calendar Year)

| (number of training hours)                           | 2015         | 2016                       | 2017                         |
|--|--------------|----------------------------|------------------------------|
| Total number of training hours                       | 22,237       | 16,745 <sup>(2)</sup>      | 16,146                       |
| Total number of employees <sup>(1)</sup>             | 1,364        | 1,333                      | 1,208                        |
| <b>Average number of training hours per employee</b> | <b>16.30</b> | <b>12.56<sup>(2)</sup></b> | <b>13.36<sup>(2,3)</sup></b> |

- (1) Total number of employees reflects total number of employees who received training during annual training periods and may not reflect year-end employee counts.
- (2) Training hours for 2016 and 2017 are a conservative estimate due to changes in the training hours recording system.
- (3) In 2017, emphasis was placed on developing new leadership development programs to be executed in 2018.

## Environmental

### 301-1 (EN1) Materials Consumed (Fiscal Year)

#### Units and Substances Key

Metric Ton(s): mt

| <b>Direct/Indirect Source (mt)</b>         | <b>2015</b>   | <b>2016</b>   | <b>2017</b>   |
|--|---------------|---------------|---------------|
| Direct Materials Used                      | 43,084        | 31,489        | <b>34,117</b> |
| Indirect Materials Used                    | 43,711        | 54,043        | <b>48,850</b> |
| <b>Total Materials Used</b>                | <b>86,795</b> | <b>85,532</b> | <b>82,967</b> |
| <b>Renewable/Non-Renewable Source (mt)</b> |               |               |               |
| Renewable Materials Used                   | 101           | 97            | <b>84</b>     |
| Non-Renewable Materials Used               | 86,528        | 85,435        | <b>82,883</b> |
| <b>Total Materials Used</b>                | <b>86,795</b> | <b>85,532</b> | <b>82,967</b> |

### 301-2 (EN2) Direct Recycled Input Materials (Fiscal Year)

#### Units and Substances Key

Metric Ton(s): mt

| <b>Source (mt)</b>  | <b>2015</b>                  | <b>2016</b>                  | <b>2017</b>                  |
|---|------------------------------|------------------------------|------------------------------|
| Slag  | 20,600                       | 13,480                       | <b>12,317</b>                |
| Batteries (mt of Pb)  | 97,582                       | 86,091                       | <b>97,929</b>                |
| Lead-Bearing Material   | 37,582                       | 36,622                       | <b>44,422</b>                |
| Iron-Containing Material  | 13,906                       | 8,812                        | <b>6,643</b>                 |
| <b>Total Materials Used</b>   | <b>169,670<sup>(1)</sup></b> | <b>145,005<sup>(1)</sup></b> | <b>161,311<sup>(1)</sup></b> |
| <b>Percentage of materials used that are recycled input materials</b> | <b>66%</b>                   | <b>63%</b>                   | <b>65%</b>                   |

(1) Overall fluctuation in materials recycled reflects the availability of materials.

### 302-1 (EN3) Energy Consumption (Calendar Year)

#### Units and Substances Key

Gigajoule(s): GJ

| <b>Direct Non-Renewable Energy Source</b> | <b>2015</b>      | <b>2016</b>      | <b>2017</b>                  |
|---|------------------|------------------|------------------------------|
| Coke                                      | 472,232          | 529,612          | <b>452,607<sup>(1)</sup></b> |
| Explosives                                | 28,275           | 24,486           | <b>25,773</b>                |
| Natural Gas                               | 151,726          | 131,663          | <b>110,580</b>               |
| Petroleum Fuel                            | 277,685          | 265,809          | <b>270,620</b>               |
| Propane                                   | 532,992          | 486,552          | <b>506,716</b>               |
| <b>Total Direct Energy Consumption</b>    | <b>1,462,910</b> | <b>1,438,122</b> | <b>1,366,296</b>             |

| <b>Indirect Non-Renewable Energy Source</b> | <b>2015</b>      | <b>2016</b>      | <b>2017</b>      |
|---|------------------|------------------|------------------|
| Electricity                                 | 1,409,784        | 1,434,721        | <b>1,417,864</b> |
| <b>Total Energy Use</b>                     | <b>2,953,694</b> | <b>2,872,843</b> | <b>2,782,034</b> |

(1) Annual variations reflect changes in production requirements year to year.

### 302-3 (EN5) Energy Intensity of All Sources (Calendar Year)

#### Units and Substances Key

Metric Ton(s): mt

Gigajoule(s): GJ

Ore: Ore milled at mining operations

Pb: Lead produced at alloying, casting, and secondary smelting and fabricating operations

| <b>Division</b>                                       | <b>Units</b>      | <b>2015</b> | <b>2016</b> | <b>2017</b>               |
|---|-------------------|-------------|-------------|---------------------------|
| Southeast Missouri Mining and Milling Division (SEMO) | GJ/mt Ore milled  | 0.28        | 0.35        | <b>0.28</b>               |
| Metals Division (Resource Recycling and Herculaneum)  | GJ/mt Pb produced | 9.00        | 10.40       | <b>7.50<sup>(1)</sup></b> |
| Fabricated Products Inc. (FPI)                        | GJ/mt Pb produced | 1.20        | 1.40        | <b>0.90</b>               |

(1) Reduction due to changes in the battery breaker process at Resource Recycling.



### 305-1 (EN15) Total Direct Greenhouse Gas Emissions (Calendar Year)

#### Units and Substances Key

Metric Ton(s) of Carbon Dioxide Equivalent: mt CO<sub>2</sub>e

|   | 2015    | 2016    | 2017           |
|---|---------|---------|----------------|
| Scope 1 (direct emissions of Greenhouse Gases, Carbon Disclosure Project, e.g., direct combustion of fuels) | 154,411 | 144,778 | <b>102,913</b> |

- (1) Overall reduction in 2016 is due to reduced fuel needs due to curtailed production and a warmer winter than usual.  
(2) Reduction in 2017 is due to variable production requirements at Resource Recycling.

### 305-2 (EN16) Total Indirect Greenhouse Gas Emissions (Calendar Year)

#### Units and Substances Key

Metric Ton(s) of Carbon Dioxide Equivalent: mt CO<sub>2</sub>e

|   | 2015    | 2016    | 2017                         |
|---|---------|---------|------------------------------|
| Scope 2 (emissions from direct purchase of energy, e.g., electricity) | 289,612 | 293,131 | <b>319,052<sup>(1)</sup></b> |

- (1) Year over year totals do not show significant change when accounting for accepted methodology practices.

### 305-3 (EN17) Other Relevant Indirect Greenhouse Gas Emissions (Calendar Year)

#### Units and Substances Key

Metric Ton(s) of Carbon Dioxide Equivalent: mt CO<sub>2</sub>e

|   | 2015   | 2016   | 2017                        |
|---|--------|--------|-----------------------------|
| Scope 3 (indirect emissions from transportation and employees' commute, etc.) | 11,275 | 13,197 | <b>20,057<sup>(1)</sup></b> |

- (1) Increase in 2017 is due to increased miles traveled by employees on company business expenses.

### 305-4 (EN18) Greenhouse Gas Emission Intensity

#### Units and Substances Key

Metric Ton(s): mt

Carbon Dioxide Equivalent: CO<sub>2</sub>e

Ore: Ore milled at mining operations

Pb: Lead produced at alloying, casting, and secondary smelting and fabricating operations

| Division  | Units                                | 2015 | 2016 | 2017                      |
|---|--------------------------------------|------|------|---------------------------|
| Southeast Missouri Mining and Milling Division (SEMO) | mt CO <sub>2</sub> e/mt Ore milled   | 0.05 | 0.06 | <b>0.05</b>               |
| Metals Division (Resource Recycling, Herculaneum)     | mt CO <sub>2</sub> e /mt Pb produced | 1.10 | 1.40 | <b>0.80<sup>(1)</sup></b> |
| Fabricated Products Inc. (FPI)                        | mt CO <sub>2</sub> e /mt Pb produced | 0.08 | 0.09 | <b>0.08</b>               |

(1) Reduction in 2017 is due to variable production requirements at Resource Recycling.

### 305-7 (EN21) Significant Air Emissions (Calendar Year)

#### Units and Substances Key

Metric Ton(s): mt

| Source (mt by type and weight)                  | 2015             | 2016             | 2017             |
|---|------------------|------------------|------------------|
| Ammonia (NH <sub>3</sub> )                      | 0.06             | 0.06             | <b>0.12</b>      |
| Antimony (Sb)                                   | 0.00             | 0.00             | <b>0.00</b>      |
| Arsenic (As)                                    | 0.25             | 0.26             | <b>0.29</b>      |
| Cadmium (Cd)                                    | 0.18             | 0.17             | <b>0.19</b>      |
| Carbon Monoxide (CO) <sup>(1)</sup>             | 11,406.00        | 15,497.00        | <b>13,584.00</b> |
| Copper (Cu)                                     | 0.42             | 0.33             | <b>0.22</b>      |
| Hazardous Air Pollutants (HAP)                  | 0.65             | 1.08             | <b>0.94</b>      |
| Lead (Pb)                                       | 5.70             | 5.10             | <b>4.45</b>      |
| Nickel (Ni)                                     | 0.03             | 0.03             | <b>0.03</b>      |
| Nitrogen Oxides (NO <sub>x</sub> )              | 43.00            | 36.00            | <b>40.00</b>     |
| Particulate Matter (PM)                         | 178.00           | 199.00           | <b>151.00</b>    |
| Sulfur Dioxide (SO <sub>2</sub> )               | 25,39.00         | 2,199.00         | <b>2,374.00</b>  |
| Sulfuric Acid (H <sub>2</sub> SO <sub>4</sub> ) | 2.40             | 2.60             | <b>1.82</b>      |
| Volatile Organic Compounds (VOC)                | 9.40             | 8.00             | <b>9.40</b>      |
| Zinc (Zn)                                       | 1.20             | 0.85             | <b>0.67</b>      |
| <b>Total</b>                                    | <b>14,187.00</b> | <b>17,950.00</b> | <b>16,167.00</b> |

(1) Annual variations reflect changes in production requirements year to year.

### 306-1 (EN22) Total Water Discharge (Calendar Year)

#### Units and Substances Key

Parts per billion: ppb

| Source (average ppb/year) <sup>(1)</sup>            | 2015          | 2016               | 2017               |
|---|---------------|--------------------|--------------------|
| Lead  | 132           | 56 <sup>(2)</sup>  | 25 <sup>(2)</sup>  |
| Zinc  | 431           | 336 <sup>(2)</sup> | 231 <sup>(2)</sup> |
| Copper  | 6             | 4 <sup>(2)</sup>   | 3 <sup>(2)</sup>   |
| <b>Total water discharge (million gallons/year)</b> | <b>19,333</b> | <b>19,837</b>      | <b>18,321</b>      |

(1) All data sources represented are reported in average ppb/year to be consistent with permit reporting requirements.

(2) The final of five SEMO water treatment plants was put into operation in August 2017. These plants helped reduce the metals contained in water discharges.

## Environmental Spending

### EN31 Total Fiscal Environmental Spending

|   | 2015                            | 2016                            | 2017                     |
|---|---------------------------------|---------------------------------|--------------------------|
| <b>Total Capital Spending and Operating Expense</b>               | <b>47,991,176<sup>(1)</sup></b> | <b>60,525,088<sup>(1)</sup></b> | <b>48,248,765</b>        |
| Remediation Spending  |                                 |                                 |                          |
| Historic Properties   | 4,299,618                       | 1,065,582 <sup>(2)</sup>        | 4,544,150                |
| Operating Properties  | 8,690,056                       | 8,891,423                       | 5,001,595 <sup>(3)</sup> |
| <b>Total Remediation Spending</b>                                 | <b>12,989,674</b>               | <b>9,957,005</b>                | <b>9,545,745</b>         |
| <b>Total Fiscal Environmental Spending, Including Remediation</b> | <b>60,980,850<sup>(1)</sup></b> | <b>70,482,093<sup>(1)</sup></b> | <b>57,794,509</b>        |

(1) 2015 and 2016 capital and operating costs were updated from previous reports to include operating expenses not previously included and remove the double counting of some expenses.

(2) Remediation spending decreased in 2016 following the completion of major projects on historic properties in Jasper County in 2015.

(3) Remediation spending decreased in 2017 at Herculaneum as the remediation work progresses.

## Economic

### Economic Impact

#### Indicator Key

Numbers within each blue bar represent the quantifiable GRI indicators included in our Level C report. See the full GRI Index for details.

#### 201-1 (EC1) Financial Highlights (Fiscal Year)

| <b>(dollars in thousands)</b>                                   | <b>2015</b>             | <b>2016</b>             | <b>2017</b>                   |
|---|-------------------------|-------------------------|-------------------------------|
| Property Taxes  | \$6,727                 | \$6,818                 | <b>\$6,188</b>                |
| Compensation  | \$131,424               | \$114,005               | <b>\$127,361</b>              |
| Community Investment <sup>(1)</sup>                             | \$197                   | \$211                   | <b>\$182</b>                  |
| Environmental Spending  | \$60,981 <sup>(2)</sup> | \$70,482 <sup>(2)</sup> | <b>\$57,795<sup>(3)</sup></b> |
| Research and Development  | \$1,564                 | \$1,405                 | <b>\$2,095</b>                |
| Royalties to Governments  | \$10,108                | \$7,924                 | <b>\$9,236</b>                |
| Capital Spending (excluding environmental capital expenditures) | \$12,350                | \$24,165                | <b>\$21,371</b>               |

(1) Includes donations, scholarships and tuition reimbursement.

(2) Environmental spending totals for 2015 and 2016 were updated from previous reports to include operating expenses not previously included and remove the double counting of some expenses between divisions.

(3) Decrease in environmental spending is due to the completion of several environmental projects at Southeast Missouri Mining and Milling Division and Metals Division.



# Management Approaches

---

<https://doerun.com/sustainability/management-approaches/>

Read below to learn more about how we manage our social, environmental and economic commitments.

## Social

## Environmental

## Economic

## Social

### Community Engagement

Doe Run operates with the consent of the community. We recognize the importance of their goodwill and the responsibility we have to operate safely, economically, soundly and in an environmentally sustainable manner. Our local communities expect us to be a fair and responsible community member that provides jobs at a fair rate, sources materials from local vendors where possible, supports community organizations, and includes the concerns of the community in our decision-making process.

When we developed our Sustainability Principles, it was important to us that we address being a good neighbor, specifically:

- We will respect community values, priorities and interests in our business decisions.
- We will provide enduring benefits that enhance our communities.
- We will maximize the economic benefits we provide to our stakeholders.

Each of our operations has community engagement plans that guide community outreach, communication and support. We are able to provide both immediate and lasting benefits to the community by:

- Purchasing locally wherever possible.
- Providing supplier procurement programs that help local vendors operate more sustainably.
- Hiring locally where possible, and paying higher-than-average wages.
- Paying royalties to governments and private landholders, as well as our fair share of taxes.
- Supporting educational opportunities through tours, internships, summer jobs, doctoral candidate research projects and academic scholarships.
- Providing donations to local charities that improve the quality of life for people in our communities.

We also aim to share information in a transparent and proactive manner. Although we are a privately held company, we choose to report annually on our social, economic and environmental performance in our Sustainability Report, so community members, customers, legislators and other stakeholders know how we are doing. We also regularly conduct community surveys to determine the interests, concerns and disposition toward our operations of those living nearest to our operations. In this way, we can adjust our community engagement and communications efforts to better meet the community's needs.

By sharing information openly, being an active member and supporter of the community, living in and near the communities in which we operate, and engaging in two-way dialogue we believe we can support the sustainability of the local communities, and produce and deliver our products more efficiently.

## Employment

Doe Run's values – safety, integrity, collaboration, respect, stewardship and sustainability – affirm our organization's culture and commitment to sound and ethical business practices. This starts with how we treat our employees and employee candidates. Our goal is to attract and retain the best employees we can in order to help us achieve our goals, so it is important that we strive to respect and invest in our people, and follow fair labor practices.

Our approach to employment and workers follows the principles of equal employment opportunity and affirmative action in all employment policies and practices, including our recruiting, hiring, compensation, benefits, transfers, training, promotions, social recreation programs, company-sponsored events, and other employment activities. We track and report on employment rates annually, as well as employee health and safety ([see Management Approach to Health and Safety](#)) monthly to ensure we're meeting those principles.

An employee handbook outlines our business code of conduct, hiring practices, time and attendance policies, anti-harassment policies and procedures, compensation and pay practices, benefit and leave policies, and much more for employees. We provide helpful resources, such as the Your Voice 24-Hour Hotline to support all employees if they would like to report anything that might be illegal, unethical or a violation of company policy. We introduce all new employees to these materials during orientation, and regularly review them with employees when and if changes are made to policy, or if a need is identified.

We support a culture of respect, continuous improvement and safety by identifying competencies that are aligned directly to our values and have built them into our talent management practices. We assess and review talent for our critical positions companywide on an annual basis, and offer tools for learning to plan for succession and prepare our workforce for future success. We recognize and respect that every employee has a voice and opinion that matters; diversity in experience, thought and idea is encouraged.

Building a culture that respects and invests in our people is always a strategic priority, but it's increasingly important as the entire mining industry faces a growing demand for talent. Approximately 50,000 new employees are needed to meet demand and replace retiring employees over the next 5 to 10 years. How we attract, build and retain top talent will directly impact our long-term success as a company and an industry. That's why we aim to be viewed as an employer of choice by promoting a culture of safety and environmental compliance, teamwork and collaboration, fairness and consistency, oversight and standardization, communication, and advocacy.

## Health and Safety

We depend on one another to operate safely, to protect each other, the community and the environment. Safety is our most foundational goal and our employees, their families, local communities and the government want to know how we are meeting our safety goals.

Doe Run's approach to employee health and safety includes continual training and protective standards that meet or exceed industry expectations. Training is critical to helping us keep our employees safe and is required to meet certain compliance and regulatory guidelines, as well as to cover essential work-related skills, techniques and knowledge. We ensure that our employees possess the right skills to help our business succeed, and conduct annual refreshers to address changes in guidelines, technology, processes, etc.

As a part of training, Doe Run also provides employee development opportunities, which are important to help employees perform their best, develop new skills and enable the company to thrive. We believe this approach fosters greater employee satisfaction, so that they stay with us, become great at what they do and help others become so, too.

We track our training hours for each employee, along with course titles and dates of completion. This data is collected by the training facilitator/subject matter expert, verified and entered into our training database. Supervisors are responsible for confirming that all employees receive required trainings, annual refreshers and/or continuing education as needed. Each year, employees participate in approximately 16,000 hours of training.

Doe Run also tracks and reports on key health and safety metrics for the mining, milling and lead metal production industries on a monthly and annual basis to identify opportunities for improvement. These include blood-lead levels (the trace amount of lead the body may absorb through exposure), accidents and incident rates. Monthly reports are shared all the way up through the executive level.

Our mining, milling and recycling activities have the potential for employees to be exposed to airborne lead particles. Doe Run employees are trained in proper lead handling and personal hygiene processes to reduce their exposure. Personal protective equipment, like respirators, are worn in areas of exposure, and employees who work in certain areas are required to wash thoroughly and change clothes and shoes before eating or going home each day.

Doe Run's standards for workforce exposure to lead are more stringent than government requirements, and monthly progress is measured to the microgram, one millionth of a gram. Doe Run monitors exposed workers' blood-lead levels and tracks the number of employees with a blood-lead level greater than 19 micrograms of lead per deciliter of whole blood ("µg/dL") in the calendar year at both its Southeast Missouri Mining and Milling Division (SEMO) and Metals Division. Doe Run counsels employees who cross a certain threshold to identify particular areas of exposure, and work on individualized plans to address those areas. Employees who exceed 30 µg/dL are temporarily reassigned to a job area with reduced exposure. By comparison, the adjusted OSHA standard for medical reassignment of an employee is 53 µg/dL.

Safety is a core value. We use a variety of mining and manufacturing industry tools to assist in identifying safety improvement opportunities that involve employees in developing solutions to address them. One example is our Job Safety Analysis program, which encourages employees to evaluate jobs before they begin to identify the safest tools and correct methods to proceed. Employees document that information for coworkers and future employees.

Doe Run has won the prestigious Sentinels of Safety mine safety award 28 times and has operations that have surpassed decades without a lost-time incident. We also have two award-winning mine rescue teams that undergo monthly training and compete in mine rescue competitions to keep skills sharp in case they need to aid employees during a real mine emergency. Safely returning our workers home to their families and loved ones at the end of each day is the ultimate goal of our safety and training programs.

## **Environmental**

### **Emissions**

One of the reasons we report on our environmental performance each year is to be transparent in our environmental impacts, and to keep our neighbors and other stakeholders informed of our efforts to minimize the impact of our operations.

Doe Run's mining, milling and recycling activities have the potential to result in releases to the air, water or land. Our releases are monitored and reported, as appropriate, to regulatory bodies, including the Missouri Department of Natural Resources and the United States Environmental Protection Agency.

We have a number of measures in place to minimize, treat or prevent releases in order to meet permitted levels. For example, water released from our property must meet limits established in facility-specific operating permits. Doe Run has five water treatment plants in the Viburnum Trend that treat and release an average of 34.5 million gallons of water per day. Doe Run utilizes baghouses, ventilation systems and enclosures to manage our emissions and meet standards. The vast majority of our land releases are made up of tailings (the sand-like, non-mineralized portion of ore), which are stored in permitted areas of our property.

We also use an environmental management system that enables us to monitor air emissions and adjust our processes in real time to reduce our impact. To further monitor and improve in this area, we maintain ISO environmental management certifications at all of our active facilities.

### **Energy**

When we created our Sustainability Principles, we considered how Doe Run must be a steward of not only the minerals we extract, but also the energy we use in our operations. Energy consumption is one of our largest operating costs for both the Southeast Missouri Mining and Milling Division (SEMO) and Metals Divisions. Doe Run is one of the largest electricity consumers in Missouri because electric motors run much of our operations, including conveyors, pumps, ventilation fans, rock crushers and hoisting equipment. Total energy consumption includes electricity, fuels (furnace coke, diesel, propane, gasoline), and explosives. Most of the energy consumed is derived from fossil fuels, which produce carbon emissions. Energy usage and costs are tracked and reported monthly for each of the operations. Historically, energy consumption has increased with the expansion of operations over time and is directly proportional to production trends.

To reduce carbon and other emissions, the SEMO Division has adopted 85 percent bio-diesel usage underground. We continue to explore other ways to conserve energy and use cleaner energy options for the good of the environment, society and the bottom line.

In 2016, we formed an energy team with members from both the SEMO and Metals Divisions. The team is charged with evaluating energy efficiency and conservation opportunities. So far, the team has initiated several energy efficiency projects, including LED lighting replacements, installing variable-frequency drives on vent fan motors, and installing shut-off switches on pumps that do not need to run constantly.

The energy team is looking at a number of other projects to manage our energy use, such as bringing a natural gas pipeline to the Viburnum Trend to reduce our propane usage, and switching diesel trucks to run on natural gas and electricity. We also are installing an electric underground hauling system to replace the use of diesel trucks aboveground at one of our sites. Since our mines have declining ore grade, the ability to conserve energy, reduce costs and/or look for alternative energy sources will be important to the future of our mines and the economic value they bring our stakeholders.

## **Materials**

One of our Sustainability Principles is to “minimize the impact of our operations on the environment.” Understanding our direct and indirect input materials, as well as the amount of materials we are able to recycle through our process, helps us measure and manage the resources we consume.

Our stakeholders care about the environment and jobs, so effectively managing natural resources and providing value to the local community by sourcing locally are two examples of why this matters to our stakeholders.

By measuring materials, we can better evaluate things, like purchasing habits, material sourcing and product options, in order to look for opportunities for improvements, such as sourcing more materials locally (which can reduce shipping impacts); choosing alternative materials where possible that may be renewable or have lower environmental impacts.

Doe Run captures this data, which is reviewed by the company’s purchasing group, which evaluates contracts, vendor selection and material options, with the assistance of on-site process owners. Together, this team is able to determine an efficient purchasing path and cost-effective material. Ultimately, measuring our direct and indirect input materials ensures that we purchase materials that deliver value to the organization, support jobs in local communities where possible, and are renewable or have as little environmental impact as is possible and practical.

## **Water**

When we created our Sustainability Principles, we considered how Doe Run must be a steward of not only the minerals we extract, but also the energy and water we use in our operations. Water is particularly important in Southeast Missouri, where many creeks, streams and river tributaries run near our operations. These waterways provide recreation for the community, and responsible use of these resources is important to us, as well as our neighbors.

We measure our water discharge data to track our progress in returning clean water to the environment. At the Southeast Missouri Mining and Milling Division (SEMO), an estimated 35 million gallons of water come in contact with our operations, either naturally flowing through our mines or used in the milling process. We pump water that comes from the mines and mills to large tailings ponds on our property, where lead, zinc and copper particles can settle out of the water. At some



locations, we are able to pump mine water directly to our mills for use in the milling process first, then discharge the process water to the tailings pond.

Five water treatment plants pump water from the tailings ponds and process it using a chemical technology, similar to municipal water treatment plants to remove metals and impurities. Runoff water from storms is also treated at the plants. We monitor the water to ensure it meets permit limits, then discharge it into local streams.

Since overhauling our water management approach with these high-tech facilities, Doe Run has been able to process and discharge water more efficiently and meet more stringent water quality standards. The water treatment plants have also increased our capacity to handle high surges of water in the event of heavy storms.

A water treatment plant is located on-site at the Resource Recycling facility, where water used in the lead battery recycling process is treated to remove metal particles. This plant also treats storm water on the property. Similar plants also operate at Glover and Herculaneum, the other sites that make up Doe Run's Metals Division.

At Fabricated Products, Inc. – a wholly owned subsidiary of Doe Run – we rely on two retention basins to collect rain water runoff at the lead fabrication plant in Casa Grande, Arizona. This reduces the load on the municipal storm water and sewer system.

Additionally, we keep the quality of water in mind when remediating historic mine sites. At some remediation sites, we have rerouted streams or patched the walls of old mines to prevent metals from leaking into the water. We are currently working on a meander system at the Elvins/Rivermines remediation site in Park Hills, Missouri. The system contains water and allows metal particles to settle out of the water before it slowly flows away from the chat piles. We also sometimes cap slag and chat piles, so wind and erosion cannot carry these particles into nearby water sources.

## **Economic**

### **Compliance**

Our activities are subject to a wide range of laws and regulations governing worker health and safety, land use, environmental protections, and many other areas. Compliance in this regulatory environment is crucial to securing our license to operate and protecting our reputation.

Our commitment to conduct business in a manner that adheres to all applicable laws and regulations is stated in our Business Code of Conduct and supported by our policies and standards.

We also participate in key voluntary compliance and reporting programs to demonstrate our commitment to transparency and good governance. Our Environmental Task Management System (ETMS) integrates our environmental tasks into a management system that allows us to track the completion of reoccurring environment tasks, such as sampling events. All our sites undergo third-party certification of our environmental management systems to the internationally accepted ISO 14001 standard.

In addition to internal efforts to verify performance, each regulatory regime in which we operate closely monitors our activities. Sites are frequently inspected by state and national government

agencies that review our operational, health and safety, and environmental performance. Our mines in the U.S. are subject to regulation by the federal Mine Safety and Health Administration (MSHA). MSHA personnel conduct inspections on a regular basis.

Some of these inspections may result in alleged violations, which may result in citations and orders. These citations and orders may result in fines or penalties. We take these alleged violations seriously and work with the issuing agency to informally and formally contest the issued citations.

When we are out of compliance or when a significant event occurs, we commit to transparently disclose and mitigate any impacts.

## Financial Management

Doe Run generates financial value by mining and milling raw materials (concentrates) to produce lead, copper and zinc, and recovering metals (lead) through the recycling of nearly 13.5 million lead batteries each year.

We engage in a rigorous planning process each year in which we allocate the resources generated by the business. During that process, we try to balance our investments in a way that is most fair to all of our stakeholders by reinvesting in our business and employees, protecting the environment, improving the local economy, and providing a return to our investors.

Doe Run takes this approach in order to appropriately allocate resources to each of our priorities, balancing the changing needs of each one. This will allow us to continue serving a valuable role in the community for years to come.

- We strive to ensure that we invest sufficiently in the community, through paying taxes and royalties, donating to local causes, and paying fair wages to employees.
- It is important that we continue to reinvest in our operations to ensure our long-term sustainability.
- We are also committed to the environment we live and operate in, and invest significant resources into monitoring, mitigating and improving our impact on the environment.

As a privately held company, Doe Run is not legally bound to meet the requirements of the **Sarbanes-Oxley Act**. This act was passed by Congress in 2002 to help restore confidence in publicly traded companies after several major corporate and accounting scandals. However, Doe Run has chosen to adopt certain Sarbanes-Oxley requirements that can be applied to privately held companies. These include good documentation procedures, rigorous internal accounting controls based on a proper segregation of duties, and strong internal audits and reviews. We also undergo annual external audits by the accounting firm of **Crowe Horwath LLP**, which adheres to **Generally Accepted Auditing Standards (GAAS)** as established by the **American Institute of Certified Public Accountants**. Our decision to take these steps is consistent with our desire to conduct business ethically and responsibly. Following this control framework also supports our efforts to maintain **International Organization for Standardization (ISO)** certifications at several operating sites.

# Corporate Governance

---

<https://doerun.com/sustainability/corporate-governance/>

The Doe Run Resources Corporation, doing business as The Doe Run Company (Doe Run), is privately held by the New York-based **The Renco Group, Inc.**

As a global supplier of lead, copper, and zinc concentrates and lead metals and alloys, Doe Run is guided by a nine-member executive team. The team consists of the president and chief executive officer, vice president – finance and chief financial officer, vice president – information technology, vice president – law, vice president – sales and marketing, vice president – human resources and community relations, vice president – exploration, research and development, vice president – environmental, health and safety, and vice president – SMO operations. The executive team is 88 percent male and 88 percent Caucasian, and encompasses an age range of 47-69 years. The team includes one female and one person of Hispanic heritage. Their compensation is determined using market-based data and standard industry practices.

These individuals are responsible for setting the business strategy and organizational structure of Doe Run, as well as the company's economic, social and environmental policies, goals, and performance. As a part of our annual profit planning process, the executive team sets company goals including specific sustainability targets. Company projects must align to company goals, and have specific metrics. These company projects and sustainability targets are reviewed a minimum of four times a year. Many of the projects are reported upon in the annual sustainability report, which is prepared by a team of employees across all divisions. The president and CEO, vice president – environmental, health and safety, and vice president – human resources and community relations review and approve Doe Run's annual sustainability report.

Doe Run's Board expects management to keep pace with best practices in corporate governance. To accomplish this goal, Doe Run utilizes a stringent set of corporate governance policies, procedures and practices to ensure that the business is properly directed, administered and controlled. For example:

- As a privately held company, Doe Run is not legally bound to meet the requirements of the **Sarbanes-Oxley Act**. This act was passed by Congress in 2002 to help restore confidence in publicly traded companies after several major corporate and accounting scandals. However, Doe Run has chosen to adopt certain Sarbanes-Oxley requirements that can be applied to privately held companies. These include good documentation procedures, rigorous internal accounting controls based on a proper segregation of duties, and strong internal audits and reviews. We also undergo annual external audits by the accounting firm of **Crowe Horwath LLP**, which adheres to **Generally Accepted Auditing Standards (GAAS)** as established by the **American Institute of Certified Public Accountants**. Our decision to take these steps is consistent with our desire to conduct business ethically and responsibly. Following this control framework also supports our efforts to maintain **International Organization for Standardization** (ISO) certifications at several operating sites. Our Herculaneum site,

Resource Recycling facility and Vancouver, Washington, Fabricated Products Inc., site are certified under ISO 9001 Quality Management program, which verify that strong, quality procedures are in place. Doe Run's Sweetwater Mine and Mill, Fletcher Mine and Mill, Brushy Creek Mine and Mill, Buick Mine and Mill, Casteel Mine, Mine 29 and Resource Recycling facility also hold ISO 14001 certification, which focuses on environmental management. Specifics related to these certifications are included [on our website](#). Doe Run has written procedures and policies in place to ensure the accuracy and completeness of our financial records and the effectiveness of our internal control systems, particularly in such areas as accounting, purchasing, vendor receipts and customer transactions. In addition, the Legal Department reviews contracts for business risks and potential conflicts of interest.

- As a federal sub-contractor, Doe Run adheres to the requirements of the Office of Federal Contracts Compliance Program (OFCCP). In doing so, Doe Run develops an annual affirmative action plan, which supports the principles of equal employment opportunity and affirmative action in all of its employment policies and practices, including recruiting, hiring, compensation, benefits, transfers, training, promotions, social recreation programs, company sponsored events, and in other terms and conditions of employment.
- Doe Run strives to maintain open communication with important audiences both inside and outside the company. As described within the [Reporting Process](#), Doe Run regularly surveys stakeholders through third-party surveys of community stakeholders and employees (conducted most recently in 2017). Through our corporate office, Doe Run provides our operating sites with guidance and education about community engagement. Sites then implement programs based on the specific needs of local communities. These programs include regular community outreach, facility tours, public meetings and ongoing dialogue with local communities. You can share feedback with the company through any of these forums, or by contacting [communityinfo@doerun.com](mailto:communityinfo@doerun.com).
- We also provide our employees with a mechanism by which they can anonymously share issues or concerns via a hotline system managed by an outside third party. Once an employee makes a report, the third-party firm sends an email to the vice president – human resources and community relations, and the vice president – law. Timely investigations are conducted for all reports made to the hotline, with issues of safety given highest priority. Any necessary communication between the reporting employee and the company is handled through the third-party firm to maintain confidentiality.

Potential employees begin learning about the company's expectations, values and sustainability policy from our website and in hiring ads. In addition, the company's Standards of Business Conduct and Company Values, Vision, Mission and Business Strategy are reviewed formally during the onboarding process. Employees also are required to sign an acknowledgment that they have received and understand the Doe Run Employee Handbook and Standards of Business Conduct.

Our core values were redefined in 2011 by the Executive Team, and are reinforced daily in conversations, business processes, and internal and external communications.

We believe we can enhance the quality of life through:

- **Safety:** Protecting one another.

- **Integrity:** Demonstrating transparency and honesty in all we say and do.
- **Collaboration:** Working together with employees, and external stakeholders, to realize shared goals.
- **Respect:** Recognizing that every employee has a voice and opinion that matters; diversity of experience, thought and ideas is encouraged.
- **Stewardship:** Conserving, managing and making the most of the natural resources in our care.
- **Sustainability:** Balancing social, environmental and economic considerations with a relentless focus on improving our processes.

To ensure that we stay current on corporate governance and corporate responsibility trends, we maintain memberships in several industry-related trade associations. These associations support and educate members about such issues as community engagement, environmental stewardship and sustainability. Company leaders hold committee and/or board positions in many of these organizations. Doe Run employs an award-winning project management office (PMO) that utilizes a rigorous process to plan for, manage and evaluate projects. The PMO has quantified improvements in areas such as project completion times and budget accuracy. By utilizing outside resources and proven programs, we help ensure we are looking at, and implementing as appropriate, best practices.

We believe that corporate governance is an evolving process. We are committed to continuous improvement in setting sustainability targets and in our reporting, so we can continue to operate responsibly and with integrity.



# Reporting Process

---

<https://doerun.com/sustainability/reporting-process/>

Based on the Global Reporting Initiative (GRI) definition of materiality, The Doe Run Company (Doe Run) determines what information to include in its Sustainability Report based on a variety of methods, including third-party quantitative and qualitative research, one-on-one conversations, community meetings, tours, and special events. We include progress we have made on projects, processes or challenges that have significant economic, environmental, and social impact (both positive and negative) on our company, our stakeholders, and the industries that depend on lead-based products.

Doe Run initially adopted the GRI framework in 2009 as a response to research that indicated audiences wanted to know more about the company, its efforts to operate safely and its investments to limit its environmental impact. A Sustainability Governance Committee, established in 2012, was charged with implementing programs and processes to further integrate sustainability into Doe Run's operations, including the indicators and processes reported in the Sustainability Report. These functions are now handled and reviewed by the executive team a minimum of four times a year. At the end of the year the executive team assigns a team from across all divisions to collect data and prepare the company's annual Sustainability Report.

Several steps have helped Doe Run senior management and functional managers determine and improve materiality for our Sustainability Reports.

- In 2012, Doe Run conducted extensive quantitative and qualitative research within the Missouri communities in which it operates to improve how it communicates with stakeholders, including through this report. The research identified the major issues facing citizens in the community to be the local economy, job opportunities, environmental responsibility and community involvement.
- In 2014, Doe Run again conducted research within the Missouri communities surrounding its operations to determine any changes to the major issues facing the communities, and inform the reporting aspects material to stakeholders outside our organization. The research indicated that the local economy, job opportunities and environmental responsibility continued to be top concerns to community stakeholders, as well as the safety of Doe Run operations and the company's involvement in the community. In addition, the company has received non-solicited phone calls from across the U.S. from citizens expressing concerns about the closure of the last primary lead smelter in the U.S. and its potential impact on access to lead material for security and outdoor activities.
- In 2015, the Sustainability Governance Committee and Doe Run's general managers identified the main challenges, accomplishments and progress within the company, including the business restructure and progress on environmental projects, workforce safety and the global market's impact on business decisions.
- Most recently, Doe Run conducted another round of community research in spring 2017. Respondents were asked to evaluate the company in the same areas identified in the 2012 and 2014 research. Once again, community members ranked jobs, wages and the economy as the most important issues facing the region. They expressed concerns about Doe Run's tax appeal

in Reynolds County and a perception of declining community involvement from the company. The responses also showed an improvement in Doe Run's ability to meet its environmental obligations.

- Based on these years of insights, Doe Run prioritized which aspects and data indicators are material both inside and outside the organization, and should be the focus of the 2017 report:
  - Community involvement at all operations
  - Employee health and safety at all operations
  - Environmental capital investment and performance, which relates to all operations
  - Workforce data for all operations
  - Direct economic impact from all operations and indirect economic impact from operations and supply chain

## Identification and Selection of Stakeholders

Based on input and continued dialogue with our employees, communities, industry groups and regulatory bodies, we've determined our stakeholders consist of the following: community groups and leaders; property owners; neighboring residents; current and retired employees; local, state and federal government; business groups; nearby schools; and industry organizations.

## Stakeholder Groups

### Community Groups and Leaders

---

#### Key Interests and Concerns

Seek information related to local jobs, taxes and other support.

#### Engagement Methods

- Conducted community surveys in 2012, 2014 and 2017.
- Provide feedback mechanism via annual Sustainability Report.
- Maintain ongoing engagement through a number of community events.
- Maintain involvement in various community organizations, including Viburnum Economic Development Area Corporation, Viburnum Lions Club, Washington County Chamber of Commerce, Salem Chamber of Commerce, Sustaining Partners of Salem (The Community Resource Center), Reynolds County Rotary Club, Dent and Reynolds County Relay for Life, local school district organizations, and community sports teams.
- Share company updates via news releases and annual Sustainability Report.
- Provide free tours annually during Old Miners' Days.

## **Property Owners and Neighboring Residents**

---

### **Key Interests and Concerns**

Seek information related to the potential impact of Doe Run's operations on their land, such as environmental precautions, traffic, noise, etc. Also interested in employee safety.

### **Engagement Methods**

- Conducted community surveys in 2012, 2014 and 2017.
- Communicate directly with nearby residents if a situation arose.
- Share company updates via news releases, local newspaper and radio interviews, and annual Sustainability Report.
- Provide free tours annually during Old Miners' Days.

## **Current and Retired Employees**

---

### **Key Interests and Concerns**

Seek information about business goals, operational performance, employee training, and health and safety.

### **Engagement Methods**

- Conducted employee surveys in 2012, 2014 and 2017.
- Hold regular employee meetings with managers.
- Established cascading flow to share information with employees through managers, and to surface feedback from employees.
- Publish quarterly employee newsletter mailed to homes to share company updates.
- Hosted Retiree Pancake Breakfast in 2014 and 2016.

## **Local, State and Federal Government and Regulatory Agencies**

---

### **Key Interests and Concerns**

Both groups seek information about operational performance, specifically around environmental impact and health and safety. Local and state government is also deeply interested in the company's economic impact, including jobs and taxes.

### **Engagement Methods**

- Hosted Doe Run Day at the Capitol to interact with legislators in Jefferson City, Missouri, in 2015, and again in March 2017.
- Regularly invite elected and regulatory officials to tour operations.

- Participated in a survey for the federal Government Accountability Office, to help the U.S. Senate Committee on Energy and Natural Resources understand the impact of federal policy on the industry.
- Post online annual sustainability reports with detailed data on environmental, health and safety performance.
- Meet regularly to address legacy issues and ongoing operations with Missouri Department of Natural Resources, EPA Region 7, and Natural Resources Trustees.

## **Business Groups**

### **Key Interests and Concerns**

Seek information related to the company's economic impact in the area, including supplier partnerships.

### **Engagement Methods**

- Maintain involvement with local business groups, including Viburnum Economic Development Area Corporation, Viburnum Lions Club, Washington County Chamber of Commerce and Salem Chamber of Commerce.
- Share company updates via news releases and the annual Sustainability Report.

## **Nearby School Districts and Colleges**

### **Key Interests and Concerns**

Seek information related to funding that benefits schools. Also seek information to inform and educate students to mining and minerals, and training for students who want to enter the mining profession.

### **Engagement Methods**

- Maintain ongoing partnerships with local colleges, including the Missouri University of Science and Technology and Mineral Area College, including donations toward key programs.
- Provide financial support for STEM-related education in local schools, including Valley R-VI school district's Project Lead The Way.
- Offer minerals education programs at local school districts.
- Offer internships and job training.
- Engage in informal conversations with teachers and administrators through involvement in mineral education workshops, backpack donation programs, Career Days and other partnerships with schools.
- Share company updates via news releases and the annual Sustainability Report.

## Industry Organizations

### Key Interests and Concerns

Seek information and best practices related to economic, environmental and social performance.

### Engagement Methods

- Hold Board or Executive Committee positions on:
  - International Lead Association (ILA); Association of Battery Recyclers (ABR); Battery Council International (BCI); The Advanced Lead Acid Battery Consortium (ALABC); Society for Mining, Metallurgy & Exploration (SME)
- Assist industry organizations with initiatives to further the industry.

Open communications with our internal and external stakeholders helps us share achievements and challenges. It also helps Doe Run understand what actions and information our stakeholders need from us. We strive to maintain open communication with stakeholders both inside and outside the company. Our Sustainability Reports and our online survey are two channels for this communication.

To share feedback with Doe Run, contact [communityinfo@doerun.com](mailto:communityinfo@doerun.com), and please consider answering a few questions via our [online survey](#).



# GRI Index

<https://doerun.com/sustainability/gri-index/>

This report contains Standard Disclosures from the GRI Sustainability Reporting Guidelines. A list of the reported Standard Disclosures is listed below. All information is fully disclosed, unless otherwise indicated.

## Strategy and Analysis

|               |  |                            |
|---------------|--|----------------------------|
| 102-14 (G4-1) | <b>Statement from the most senior decision-maker of the organization</b> | <b>Letter from the CEO</b> |
|---------------|--|----------------------------|

## Organizational Profile

|                |   |   |
|----------------|---|---|
| 102-1 (G4-3)   | <b>Name of the organization</b>   | The Doe Run Resources Corporation/DBA<br>The Doe Run Company  |
| 102-2 (G4-4)   | <b>Primary brands, products, and services</b>   | <b>What We Do</b>   |
| 102-3 (G4-5)   | <b>Location of the organization's headquarters</b>  | St. Louis, Missouri, United States  |
| 102-4 (G4-6)   | <b>Countries where the organization operates</b>  | United States (Missouri, Arizona and Washington)  |
| 102-5 (G4-7)   | <b>Nature of ownership and legal form</b>   | The Doe Run Resources Corporation is a corporation, which is an indirect subsidiary of The Renco Group, Inc.  |
| 102-6 (G4-8)   | <b>Markets served</b>   | Primary customers served include battery manufacturers in the U.S.; concentrates are sold globally.<br><b>What We Do</b>  |
| 102-7 (G4-9)   | <b>Scale of the reporting organization</b>  | <b>What We Do</b><br><b>Financial Highlights</b><br>As a private company, net sales, net revenue and total capitalization is proprietary information and viewed as business confidential. |
| 102-8 (G4-10)  | <b>Total workforce by employment type, employment contract, and region, broken down by gender</b> | <b>Workforce Summary</b>  |
| 102-41 (G4-11) | <b>Percentage of total employees covered by collective bargaining agreements</b>                  | Only 0.17 percent of employees are covered under collective bargaining agreements.  |

|                |   |  |
|----------------|---|--|
| 102-9 (G4-12)  | <b>Organization's supply chain</b>  | Doe Run partners with its local vendors to create a more sustainable supply chain and support local economic vitality where possible. Its supplier practices guided more than \$172 million in spending to Missouri-based suppliers in 2017, representing 42 percent of Doe Run's overall supplier spending.   |
| 102-10 (G4-13) | <b>Significant changes during the reporting period</b>  | <b>Letter from the CEO</b>   |
| 102-12 (G4-15) | <b>Externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses</b> | The Doe Run Company, through its membership with the International Lead Association, subscribes to the principles of the <b>Shared Lead Action 21 Program</b> . We aim for the safe production and use of lead now and in the future while safeguarding human health and limiting operational impact on the natural environment. In addition, many of Doe Run's operations have achieved and maintain ISO certifications to minimize our environmental impact. |
| 102-13 (G4-16) | <b>Memberships of associations or organizations</b>   | The Doe Run Company participates on the boards and/or committee activities for a variety of industry organizations, including:<br><b>International Lead Association</b><br><b>Battery Council International</b><br><b>Advanced Lead Acid Battery Consortium</b><br><b>Association of Battery Recyclers</b><br><b>Society of Mining, Metallurgy and Exploration</b>   |

## Identified Material Aspects and Boundaries

|                |  |  |
|----------------|--|--|
| 102-45 (G4-17) | <b>Entities included in the organization's consolidated financial statements or equivalent documents</b> | All Doe Run entities have been reported.<br><b>What We Do</b>  |
| 102-46 (G4-18) | <b>Process for defining report content</b>   | <b>Reporting Process</b>   |
| 102-47 (G4-19) | <b>Material aspects identified for defining report content</b>   | <b>Reporting Process</b>   |
| 103-1 (G4-20)  | <b>Aspect boundaries inside the organization</b>   | All Doe Run entities have been reported. All sizeable economic, environmental and social impacts are included either in the stories or the data. |

|                |  |                               |
|----------------|--|-------------------------------|
| 103-1 (G4-21)  | <b>Aspect boundaries outside the organization</b>  | <b>Reporting Process</b>      |
| 102-48 (G4-22) | <b>Restatements of information provided in previous reports, and the reasons for such</b>            | <b>Environmental Spending</b> |
| 102-49 (G4-23) | <b>Report significant changes from previous reporting periods in the Scope and Aspect Boundaries</b> | None                          |

## Stakeholder Engagement

|                |   |                          |
|----------------|---|--------------------------|
| 102-40 (G4-24) | <b>List of stakeholder groups engaged by the organization</b>                       | <b>Reporting Process</b> |
| 102-42 (G4-25) | <b>Basis for identification and selection of stakeholders with whom to engage</b>   | <b>Reporting Process</b> |
| 102-43 (G4-26) | <b>Approach to stakeholder engagement</b>   | <b>Reporting Process</b> |
| 102-44 (G4-27) | <b>Key topics and concerns that have been raised through stakeholder engagement</b> | <b>Reporting Process</b> |

## Report Profile

|                       |  |   |
|-----------------------|--|---|
| 102-50 (G4-28)        | <b>Reporting period</b>                                    | 2017 Calendar (Fiscal year reporting is noted where appropriate.)   |
| 102-51 (G4-29)        | <b>Date of most recent previous report</b>                 | Published in August 2017  |
| 102-52 (G4-30)        | <b>Reporting cycle</b>                                     | Annual  |
| 102-53 (G4-31)        | <b>Contact point</b>                                       | <a href="mailto:corporateinfo@doerun.com">corporateinfo@doerun.com</a>  |
| 102-54 102-55 (G4-32) | <b>In Accordance with Guidelines and GRI Content Index</b> | This report contains Standard Disclosures from the GRI Sustainability Reporting Guidelines. The GRI content index is outlined on this page. |

## Governance

|                |  |                             |
|----------------|--|-----------------------------|
| 102-18 (G4-34) | <b>Governance structure of the organization</b>  | <b>Corporate Governance</b> |
| 102-19 (G4-35) | <b>Process for delegating authority to address economic, environmental and social topics</b> | <b>Corporate Governance</b> |
| 102-20 (G4-36) | <b>Position responsible for economic, environmental and social topics</b>                    | <b>Corporate Governance</b> |

|                |   |   |
|----------------|---|---|
| 102-22 (G4-38) | <b>Composition of the company's highest governing body</b>  | <b>Corporate Governance</b> (Partially Disclosed) |
| 102-23 (G4-39) | <b>Indicate whether the Chair of the highest governance body is also an executive officer</b>   | No  |
| 102-26 (G4-42) | <b>Report the highest governance body's and executives' roles in developing, approving and updating the organization's purpose, mission, strategies, policies and goals related to sustainability</b> | <b>Corporate Governance</b>                       |
| 102-32 (G4-48) | <b>Highest position that formally reviews and approves the sustainability report</b>  | President and CEO                                 |

## Ethics and Integrity

|                |   |                    |
|----------------|---|--------------------|
| 102-16 (G4-56) | <b>Organization's values, principles, standards and norms of behavior</b> | <b>Core Values</b> |
|----------------|---|--------------------|

## Economic

|                |  |   |
|----------------|--|---|
| 201-1 (G4-EC1) | <b>Direct economic value generated and distributed</b>                                 | <b>Financial Highlights (Partially Disclosed)</b>   |
| 203-1 (G4-EC7) | <b>Development and impact of infrastructure investments and services supported</b>     | <b>Invested in Our Community<br/>Historic Mine Remediation: Preparing for the Future</b>  |
| 204-1 (G4-EC9) | <b>Proportion of spending on local suppliers at significant locations of operation</b> | In 2017, Doe Run supported Missouri businesses by spending more than \$172 million with 744 Missouri vendors. This accounts for 42 percent of total company spending.<br><b>Missouri Vendor Improves Hauling Efficiency</b> |

## Environmental

|                 |   |                                  |
|-----------------|---|----------------------------------|
| 301-1 (G4-EN1)  | <b>Materials used by weight or volume</b>                             | <b>Environmental Performance</b> |
| 301-2 (G4-EN2)  | <b>Percentage of materials used that are recycled input materials</b> | <b>Environmental Performance</b> |
| 302-1 (G4-EN3)  | <b>Energy consumption within the organization</b>                     | <b>Environmental Performance</b> |
| 302-3 (G4-EN5)  | <b>Energy intensity</b>   | <b>Environmental Performance</b> |
| 305-1 (G4-EN15) | <b>Direct greenhouse gas (GHG) emissions (Scope 1)</b>                | <b>Environmental Performance</b> |

|                 |  |  |
|-----------------|--|--|
| 305-2 (G4-EN16) | <b>Energy indirect greenhouse gas (GHG) emissions (Scope 2)</b>  | <b>Environmental Performance</b>   |
| 305-3 (G4-EN17) | <b>Other indirect greenhouse gas (GHG) emissions (Scope 3)</b>   | <b>Environmental Performance</b>   |
| 305-4 (G4-EN18) | <b>Greenhouse gas (GHG) emissions intensity</b>  | <b>Environmental Performance</b>   |
| 305-7 (G4-EN21) | <b>NOX, SOX, and other significant air emissions</b>   | <b>Environmental Performance</b>   |
| 306-1 (G4-EN22) | <b>Total water discharge by quality and destination</b>  | <b>Environmental Performance</b>   |
| 307-1 (G4-EN29) | <b>Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations</b> | Doe Run paid no (\$0) fines for noncompliance with environmental laws and regulations in 2017. |

## Category: Labor Practices and Decent Work

|                |   |  |
|----------------|---|--|
| 102-8 (G4-LA1) | <b>Total number and rates of new employee hires and employee turnover by age group, gender and region</b>   | <b>Workforce Summary</b> (Partially Disclosed)             |
| 403-1 (G4-LA6) | <b>Type and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region and by gender</b> | <b>Health and Safety Performance</b> (Partially Disclosed) |
| 404-1 (G4-LA9) | <b>Average hours of training per year per employee by gender and employee category</b>  | <b>Workforce Training</b> (Partially Disclosed)            |

## Society

|                |  |  |
|----------------|--|--|
| 413-1 (G4-SO1) | <b>Local community engagement, impact assessments, and development programs</b>  | All operations implement a localized community engagement plan.<br><b>Invested in Our Community</b>                |
| 419-1 (G4-SO8) | <b>Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations</b> | In 2017, Doe Run paid approximately \$105,728 in fines and non-monetary sanctions related to laws and regulations. |

## Product Responsibility

|                |   |  |
|----------------|---|--|
| 419-1 (G4-PR9) | <b>Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services</b> | Doe Run paid no (\$0) significant fines for noncompliance concerning provision and use of products and services in 2017. |
|----------------|---|--|