



THE DOE RUN COMPANY

2015 Sustainability Report

2015 Doe Run Sustainability Report

 sustainability2015.doerun.com/

Business Highlights

250,000

Southeast Missouri Mining and Milling Division produces approximately 250,000 tons of lead concentrates annually.

160,000

Resource Recycling has the capacity to recycle and recover nearly 160,000 tons of refined lead and lead alloys from more than 13.5 million recycled lead-acid batteries annually.

30,000

Fabricated Products Inc. manufactures 30,000 tons of lead products annually.

Facts About Lead

Battery Recycling

More than 99 percent of lead batteries in the United States are recycled, compared to aluminum cans at 55 percent. ¹

Automobiles

One billion vehicles worldwide rely on lead-based batteries to start their engines and power their electronics. ²

Renewable Energy

Lead-based batteries store renewable energy sourced from wind turbines and solar panels before going into the electric grid.

1. U.S. Environmental Protection Agency

2. International Lead Association

Message from the CEO

 sustainability2015.doerun.com/introduction/message-from-the-ceo/

Environmental Performance

Mining and metal production are vital to the health of the U.S., global economies and modern society. Doe Run is committed to promoting environmental compliance and stewardship throughout the organization. In 2015, company employees received more than 22,237 training hours on subjects, including the environment and workplace safety. The company also tracked and completed more than 25,000 environmental, health and safety tasks through its Enterprise Task Management System (ETMS). Read more about our [environmental commitments](#) or browse our [data tables](#).

Our Employees

Workplace safety is our highest value, and our subsidiary [Fabricated Products Inc. \(FPI\)](#) reached 1.5 million hours without a lost time accident in 2015 and achieved a perfect safety record for 16 years. While we celebrate these safety achievements, we also mourn when accidents impact our team. In January 2015, Doe Run's mining operations tragically experienced a fatality at one of our mines and we lost a trusted and highly respected coworker and friend. We worked with federal authorities to understand what caused this accident and to ensure all precautions for safety are taken to best protect our employees.

One precaution we focus upon is reducing employee exposure to lead. In 2014, lead manufacturing and mining companies across the industry introduced voluntary targets to reduce workforce lead exposure. The U.S. Occupational Safety and Health Administration requires that employees of lead industry companies be removed and reassigned from their jobs if their blood-lead levels exceed 50 micrograms per deciliter ($\mu\text{g}/\text{dL}$) on a six-month average. Doe Run voluntarily reassigns employees if they reach blood-lead levels of 30 $\mu\text{g}/\text{dL}$.¹

Doe Run has taken a protective approach by proactively monitoring employees' blood-lead levels on a monthly basis versus a quarterly or annual basis if they exceed our threshold. Our target for 2015 was to reduce the number of employees at each location who surpassed the threshold of 19 $\mu\text{g}/\text{dL}$. We achieved that target at our Southeast Missouri Mining and Milling (SEMO) Division and FPI, but missed our target at our Resource Recycling and Herculaneum operations. Read more about [our progress](#).

Global Outlook

In 2015, global demand for lead grew at a lower level than anticipated as China's economic growth slowed. The result was lower prices for base metal commodities, including lead. Doe Run adjusted to the cooling global economy by postponing non-essential projects, reducing overtime where possible and, unfortunately, by [reducing our workforce](#). These decisions, though difficult, enabled the company to manage through a challenging time without some of the more drastic measures taken by other companies in the industry.

Despite the lower commodity pricing, the long-term outlook for lead, copper and zinc is promising. Since the closure of the Doe Run primary smelter in 2013, the company has diversified its customer portfolio in the global market and has settled into its new business model as a global leader in exported lead concentrates. The change to the company's business model also impacted company spending with Missouri vendors as materials related to primary metal production were no longer required. The smelter closure also impacted U.S. metal imports and in 2015, the U.S. imported record levels of lead metal. The majority of lead imports are utilized in motive and stationary batteries, and advances in battery technologies provide a promising outlook for lead-based batteries for use in hybrid electric cars and renewable energy storage. Both markets are expected to experience strong growth. So, although lower

metal prices may prevail for a longer period, we believe recovery of metal prices will take place in late 2016. With the measures we have put into place, we are well-poised for a market recovery.

The Reputation of Lead

As a member of several trade associations, Doe Run is a staunch advocate for open communication with stakeholders and for greater understanding on how to use and reuse lead in a safe manner. Most people do not realize that lead-based batteries start nearly one billion vehicles every day. A day without lead would mean a day without modern transportation, without medical radiation therapies, without security screening and much more. Improved communication efforts on the value of lead and greater education on the proper handling of lead are necessary to build a better understanding among the public and policymakers.

As the largest lead mining company in the U.S., Doe Run has taken an active role in working alongside state and federal government to help legislators learn more about our industry. In April 2015, Doe Run employees hosted a “Doe Run Day” at the Missouri State Capitol building. Employees staffed tables with information on Missouri minerals, battery recycling, mining and remediation, and visited each state legislator’s office to share information on our industry. The event successfully opened dialogue about the important role mining plays for Missouri’s economy, and the company intends to repeat the effort every couple of years.

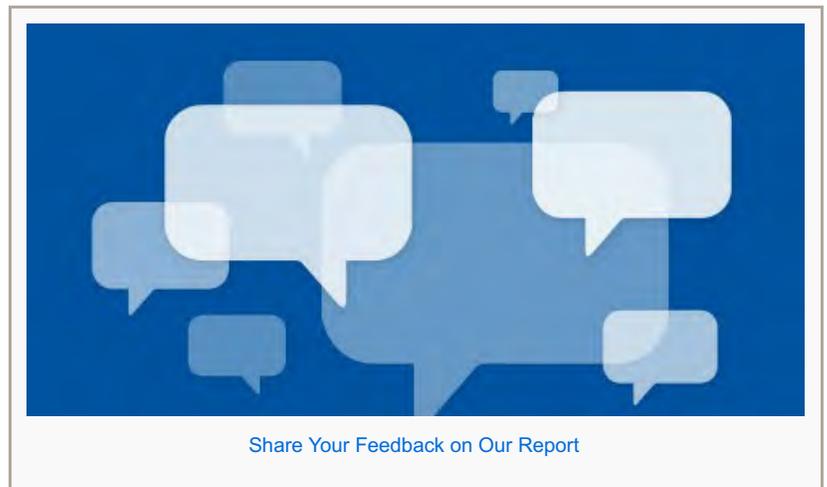
At the federal level, Doe Run was invited by the U.S. Office of Accountability to respond to its Critical Materials Supply Survey regarding U.S. access to critical materials that may have a strong value to our economy and national security. Doe Run responded by explaining the importance of lead metal to the U.S. economy and to U.S. domestic and international security. For example, lead is used to start all motive vehicles, provide emergency power for mission-critical equipment, and for medical and military applications, all of which directly support our nation’s defense.

Share Your Thoughts

We understand that we operate with the consent of the public. Your views are important to us. Please consider answering a few questions on our [online survey](#) or email me at the below address.

These are challenging times as we strive to earn and retain the trust of our stakeholders, adjust to changing regulations and political influences, and work to use fewer resources to return greater value. We must continue to challenge ourselves and our industry through education and collaboration, so that all mining companies across the globe are using best practices to improve recoveries, provide economic vitality and reduce impacts.

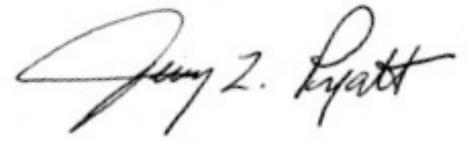
Sincerely,



Jerry L. Pyatt

President and Chief Executive Officer

corporateinfo@doerun.com

A handwritten signature in black ink that reads "Jerry L. Pyatt". The signature is written in a cursive style with a large initial "J" and "P".

¹ Blood-lead levels are the trace amount of lead the body absorbs through exposure.

Organizational Profile

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The Doe Run Company manages the various components of the lead lifecycle, and also provides lead metals, alloys and lead concentrates to companies globally.

Based in St. Louis, The Doe Run Company (Doe Run) is a privately held natural resources company and a global provider of lead, copper and zinc concentrates and lead metals and alloys. Dedicated to environmentally responsible mining operations and metal production, Doe Run operates one of the world's largest single-site lead recycling centers, located in Boss, Missouri. Doe Run and its subsidiaries deliver products and services necessary to provide power, protection and convenience. Doe Run has operations in Missouri, Washington and Arizona.

Our Business Divisions

Southeast Missouri Mining and Milling Division

The lifecycle of lead starts with exploration, which has helped to identify and locate the six underground mines of the Southeast Missouri Mining and Milling Division (SEMO). Here, ore containing lead (galena), zinc (sphalerite) and copper (chalcopyrite) is located, blasted, hauled, crushed and hoisted to the surface, then concentrated at Doe Run's four mills. In southeastern Missouri's Viburnum Trend, mining and milling has taken place for more than 50 years and produces approximately 250,000 tons of lead concentrates annually.

Doe Run's SEMO Division also includes the Glover facility as of late 2013. A portion of the site, which ceased operations as a primary lead smelter in 2003, functions as a warehouse and transloading facility.

Steve Batts, Vice President – SEMO Operations

semoinfo@doerun.com



Metals Division

Doe Run's Resource Recycling facility has served metals customers and the battery manufacturing industry as one of the world's largest single-site lead recycling centers since opening in 1991. Resource Recycling has the capacity to recycle and recover nearly 175,000 tons of refined lead and lead alloys from more than 13.5 million recycled lead-acid batteries annually. Other recycled materials include ammunition, lead-bearing glass and lead-based paint chips.

In late 2013, Doe Run closed its Herculaneum primary smelting operations. The company continues to operate its refinery, strip mill, and alloying and casting operations at the Herculaneum site to produce unique lead alloy products. With the closure of the smelter, Doe Run's Primary Smelting Division was combined with its Resource Recycling Division to better serve customers as the Metals Division.

Bruce Chamberlain, Operations Manager
rrdinfo@doerun.com



Fabricated Products Inc.

Fabricated Products Inc. (FPI) is a wholly owned Doe Run subsidiary. FPI's Vancouver, Washington, location primarily produces lead oxide for the manufacturing of lead-acid batteries. Lead metal fabrication takes place at the Casa Grande, Arizona, location. The facility produces sheet lead for roofing; lead shielding to block sound waves, X-rays and nuclear radiation; storage containers for radioactive waste; lead anodes for copper and zinc electrowinning; bullet materials; and specialty extruded shapes. Annually, FPI manufactures 30,000 tons of lead products.

Dave Olkkonen, General Manager
fpiinfo@doerun.com



Map of Operations



Safety at the Core

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Sixteen years is a long time to maintain a record of no lost-time accidents. Just ask Fabricated Products Inc.'s (FPI) facility in Casa Grande, Arizona. Employees there have worked 1.5 million hours with no lost-time accidents, totaling more than 1.5 million consecutive safe hours at its two locations.

"If you would have told me 15 years ago, when we had one full year under our belt, that 16 years later we'd still be adding to this record, I doubt I would have believed it," said Tim Rango, sales, human resources and safety manager for FPI, a subsidiary of Doe Run specializing in metal fabrication. "But today, knowing our team and the culture we have here, I believe we have what it takes to continue our record long into the future."

FPI's Casa Grande facility fabricates lead and lead alloy products, while the facility in Vancouver, Washington, produces lead oxides for the battery industry.

"FPI employees work in an environment with mechanical equipment, mobile equipment, and heavy suspended loads of hot or molten materials. It is critical that we have strong safety processes in place to protect our employees, keep our operations running smoothly and provide quality products to our customers," says Mark Yingling, vice president – environmental, health & safety at Doe Run. "Our FPI employees have created an exemplary culture of safety, and we congratulate them for their commitment to keeping each other safe year over year."

When asked what the key has been to such a safe environment, Dave Olkkonen, general manager, says it starts with hiring for the right fit. "Our first step is to find employees who share our common values of safety and respect for one another. We want to be a good fit for them, and they have to also share in our commitment to our safety performance. It is understood that we must always find a way to do a job safely, or we won't do it at all.

"The division rewards employees with a lunch celebration when they achieve good results. We invite employees to ask our leadership team questions anytime they have questions or suggestions," Olkkonen said. "By promoting communication, we're fostering a level of respect and team work that carries over into the workday. We watch out for one another."

Working Safely Protects Lives, Jobs and the Community

Just ask Steve Rhoades, general supervisor at Resource Recycling, Doe Run's secondary lead smelter located in southeastern Missouri. In 2015, Doe Run's Resource Recycling facility invested in new measures to keep both employees and the environment safer.

"Our people are what keep us in business, and our community allows us to operate, so it's critical that we take steps to work safely and protect our employees and neighbors," said Rhoades.

Doe Run took a big step in improving air quality in 2015 with a \$1.2 million ventilation project that reduces exposure to potential airborne lead particles at Resource Recycling's metal refinery. In order to reduce the potential for fugitive emissions from the refinery and other process buildings, the facility's operations are enclosed in negative pressure buildings. Negative pressure is produced by large ventilation fans that draw the air in through ductwork and eventually through baghouses, which collect lead particles and other airborne materials before releasing the air outside.

"We are always working to lower employee exposure to airborne lead," said Bruce Chamberlain, operations manager, Metals Division. "Doe Run made [several improvements](#) in this area, and the ventilation is a part of that success. We set our levels for employees well below the government requirements, and in 2015 our average blood-lead level for Metal Division employees was 15.01 micrograms per deciliter (µg/dL). We focus on this for continuous

improvement and establish metrics to help us continue the path of reduced exposure.”

The project construction took place over eight months and includes a 250-horsepower fan that can draw between 110-120 thousand cubic feet of air per minute. Missouri-based Lee Mechanical fabricated and installed the system.

Safety Measures

One of Doe Run’s core values is being safe – protecting one another. This means a commitment from the company to continually invest in safety programs and equipment to protect employees and neighbors, and a commitment from employees to operate safely and watch out for fellow co-workers.

Safety Gloves

Employees protect their hands by wearing different types of gloves based on the task to be completed.



Climbing Harness

Climbing harnesses are used by employees to ensure work conducted at elevation is completed safely.

Ventilation Fan

In 2015, the company invested in a \$1.2 million ventilation project at the Resource Recycling facility.



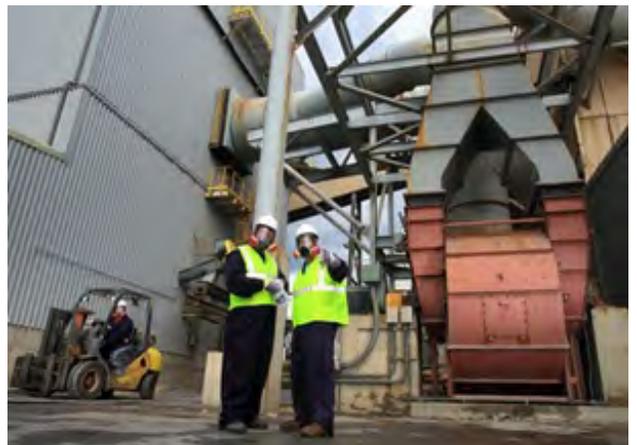
Behind the Numbers

Total Case Incident Rates, Lost Time Accidents, Blood-Lead Levels. What do they have in common? Lower is better when it comes to employee safety.

“There are various ways to measure progress in keeping employees safe,” said Justin Province, environmental, health & safety (EHS) manager. “In our industry, we routinely work with large equipment and around molten metal. Clear safety processes and open communication among employees helps us create a safe, productive environment. We must always maintain our focus and dedication to safety.”

Doe Run [tracks and reports](#) on blood-lead levels (the trace amount of lead the body may absorb through exposure), accidents and incident rates monthly and annually in each of the above categories, and in 2015 the company identified several areas for focused improvement.

“We are always monitoring our health and safety numbers, and identifying ways to make adjustments to improve safety at our facilities,” said Yingling.



Throughout 2015, Doe Run analyzed the safety performance

numbers and the related incidents. In many cases, these lost time accidents involved soft tissue injuries, like deep bruises, muscle pulls or sprains, that take time to heal. While these types of injuries are common among any type of industrial job, Doe Run wanted to assess what changes could be made to minimize accidents like these.

“We are fortunate to have a knowledgeable and experienced workforce,” said Yingling. “Being too familiar with a job can sometimes lead to overconfidence. It’s important to stay alert and look out for potential dangers through continued assessment.”

Doe Run reassessed its performance against the mining industry’s [CORESafety®](#) Program, which the company first introduced in 2013. Building on the company’s progress, EHS team members conducted a companywide assessment in each of the program’s 20 key areas. Following assessment, the CORESafety team determined they would focus primarily on these categories: collaborating and communication, risk management, change management, assurance, and management systems coordination.

The central CORESafety team focused on collaboration and communication first to engage more employees in the process. The initial team of more than 75 employees (across all locations, divisions and, including, both hourly and salary staff) discussed how Doe Run could foster stronger two-way communication about safety issues. Location teams meet monthly to share ideas, research solutions and, when appropriate, present suggested improvements to division leadership teams so that any necessary corrective measures are taken.

One of the specific areas of focus was hand safety. “After investigating past incidents related to hand burns, the CORESafety team researched alternative hand protection products and identified a different glove that better protects employees,” stated Province. “After introducing the new glove and processes for the casting area, the number of hand-related injuries has greatly reduced.”

Separately, the team also responded to employee suggestions to research cooling gear for those who work closest to the furnaces. The company purchased the new gear, which keeps employees cooler and more comfortable.

Success one microgram at a time

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. In 2015, the average blood-lead levels companywide declined to 11.02 micrograms per deciliter ($\mu\text{g}/\text{dL}$) and the number of employees who recorded a blood-lead level of greater than 19 $\mu\text{g}/\text{dL}$ also declined from 223 to 188.

“Doe Run proactively reassigns workers who have a blood-lead level of 30 $\mu\text{g}/\text{dL}$ to a job area with reduced exposure,” stated Mark Yingling. “That’s 20 points less than the standard set by the Occupational Health and Safety Administration (OSHA) for medical reassignment.” Yingling attributes the success to concerted efforts at each division. “We also counsel employees who cross a certain threshold to identify particular areas of exposure, and work on individualized plans to address those areas.”

Certifications and Achievements

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Doe Run's success depends on achieving high standards for its operations and safety. Certifications and awards are measures of the company's progress.

Third Mine and Mill Earns ISO Certification

In 2015, a third Doe Run mine and mill operation – Brushy Creek Mine and Mill – completed its ISO 14001:2004 certification for environmental management. Developed by the [International Organization for Standardization \(ISO\)](#), the ISO 14001:2004 certification helps companies set operational goals and maintain an environmental management system.

“Continuous improvement is a way of life when it comes to environmental stewardship,” said Samantha Anderson, environmental programs manager at Doe Run. “Completing the ISO certification process helps the company develop a framework to analyze the environmental challenges we face, and then identify areas where we can implement consistent practices across our operations, and fine-tune processes that may be specific to an individual mine or mill.”

Brushy Creek Mine and Mill achieved ISO certification over a six-month period, which included a rigorous on-site assessment from a third-party ISO registrar to refine the site's procedures and enhance environmental performance.

During the ISO certification process, Doe Run audited the efficiency and potential environmental impact of current operations at Brushy Creek Mine and Mill. Then, the team developed a management system to reduce environmental impact and set specific targets and timelines for improvement.

- Increase materials recycling by 5 percent.
- Reduce hazardous waste by 5 percent.
- Construct a water treatment plant, which was completed in 2014. Read more about Doe Run's [water management](#).
- Complete an HVAC geothermal heating project for the site. Read more about this new [energy-efficient system](#).

“Third-party auditing of our progress is one of the most valuable features of ISO,” said Anderson. “Quarterly auditing by an internal team and an annual audit conducted by a third party helps us track our progress against the ISO 14001 standard. Outside auditors assist us by looking at our programs with a fresh perspective and sharing information on the latest industry trends.”



Brushy Creek Mine and Mill ISO Certification
Brushy Creek Mine and Mill completed ISO 14001:2004 certification for environmental management.

At Brushy Creek Mine and Mill, internal teams identified several solutions to everyday operational obstacles as part of the ISO auditing process. For example, the underground crew noted that traditional sticker labels for containers sometimes disintegrated in the damp environment, which could create confusion about what is stored inside. Employees researched alternative methods to label containers underground, ultimately moving to durable, color-coded zip ties that could withstand the environment.

“Changing the label system was a simple solution, and it makes a big difference in how we work,” said Anderson.

The experience that the environmental and mine operation teams gained during the previous ISO certification audits at the company’s Sweetwater Mine and Mill and Fletcher Mine and Mill made for a more efficient certification process at Brushy Creek Mine and Mill. The team’s knowledge ultimately reduced the process by several months.

In 2016, Doe Run’s Buick Mine and Mill will be implementing some of the environmental management best practices developed at the other facilities to prepare for the ISO certification process in 2017. Casteel Mine and No. 29 Mine will also undergo ISO certification in 2017.

“Pursuing certifications like ISO help us in our goal to meet our commitment to remain good stewards of the resources we share with our stakeholders and communities of interest,” said Anderson.

Doe Run’s Resource Recycling facility has held an ISO 14001:2004 certification since 2003. Additionally, Herculaneum, Resource Recycling and Fabricated Products Inc.’s (FPI) Vancouver, Washington, facilities maintain ISO 9001:2008 certification for quality management systems.

Mine Rescue Achievements

Maintaining a safe workplace requires a team effort, and Doe Run reinforces safety and emergency preparedness through regular employee training. In 2015, Doe Run employees completed 16,687 safety-related training hours. The mine rescue teams also complete eight additional hours of training monthly and participate annually in mine rescue competitions to keep their critical safety response skills sharp.

In July 2015, Doe Run’s Maroon mine rescue team earned the overall champion title at the Northern Regional Mine Rescue Contest. The event tested 10 mine rescue teams’ abilities to handle emergency situations underground.

Other 2015 accomplishments of the mine rescue teams include:

- The Maroon Team won best in state at the Missouri Mine Rescue Association Contest held in Rolla, Missouri.
- The Gray Team finished in third place in the team technical competition at the Southeast Regional Mine Rescue Contest in Maysville, Kentucky.
- At the same competition in Kentucky, the Gray Team’s captain, Wayne Marlin, earned first place in the written team trainer test.

While mine rescue contests are competitive events, participants value each team’s commitment to safety above all else. In 2015, Doe Run’s Denny Dickerson was inducted into the Missouri Mine Rescue Hall of Fame for his many years of service as a skilled mine rescuer. He was nominated by another mine rescue team Doe Run regularly faces in competition.

FPI Reached 1.5 Million Safe Hours

Doe Run’s dedication to safety extends to its manufacturing operations. FPI, which manufactures lead-based products, achieved 1.5 million hours without a lost time accident in 2015. This achievement represents more than 16 years of safe work at FPI’s Casa Grande, Arizona, facility and 10 years of safe work at its facility in Vancouver, Washington. This achievement demonstrates how each team plays a critical role in fulfilling Doe Run’s commitment to safety. Read more about Doe Run’s [employee safety programs](#).

National Communication Recognition

Doe Run received an APEX Award for Publication Excellence from The Business Communications Report for its [2014 sustainability report website](#). The award is based on excellence in graphic design, editorial content and overall communications effectiveness. This is the fourth time Doe Run has earned APEX recognition for its annual sustainability report.

Health and Safety Performance

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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").⁽²⁾ 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)	2013	2014	2015
Southeast Missouri Mining and Milling Division (SEMO), including remediation and demonstration plant	10.37	9.78	9.67
Metals Division (Resource Recycling, Herculaneum, Glover) ⁽³⁾	N/A	15.20	15.01
Primary Smelting Division (Herculaneum, Glover)	14.51	N/A	N/A
Resource Recycling	15.59	N/A	N/A
Corporate Headquarters ⁽¹⁾	N/A	N/A	N/A
Fabricated Products Inc. (FPI)	7.78	7.74	7.40
Average	12.17	11.49	11.02

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's standard for medical reassignment of an employee is 53 µg/dL.⁽²⁾ Doe Run sets its maximum limit at 30 µg/dL.

(# of employees with blood-lead levels >19 ug/dL)	2013	2014	2015
SEMO	93	74	38
Metals Division (Resource Recycling, Herculaneum, Glover) ⁽³⁾	N/A	148	148
Primary Smelting Division (Herculaneum and Glover)	99	N/A	N/A
Resource Recycling	130	N/A	N/A
Corporate Headquarters ⁽¹⁾	N/A	N/A	N/A
FPI	0	1	2
Total	322	223	188

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.

(number of employees)	2013	2014	2015
SEMO (includes Glover)	2	2	3
Metals Division (Resource Recycling, Herculaneum)	N/A	4	7
Primary Smelting Division	2	N/A	N/A
Resource Recycling	4	N/A	N/A
Corporate Headquarters	0	0	0
FPI	0	0	0
Total number of work-related fatalities, companywide	0	0	1
Total	8	6	11

Total OSHA Recordables and MSHA Reportables

Total OSHA recordables and Mine Safety and Health Administration (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)	2013	2014	2015
SEMO (includes Glover)	17	23	33
Metals Division (Resource Recycling, Herculaneum)	N/A	35	44
Primary Smelting Division	29	N/A	N/A
Resource Recycling	21	N/A	N/A
Corporate Headquarters	1	0	0
FPI	1	1	0
Total	69	59	77

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)	2013	2014	2015
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SEMO (includes Glover)	1.8	2.6	3.6
Metals Division (Resource Recycling, Herculanum)	N/A	9.3	12.2
Primary Smelting Division	11.0	N/A	N/A
Resource Recycling	6.7	N/A	N/A
Corporate Headquarters	1.1	0	0
FPI	2.5	2.3	0
Total Company	4.1	3.9	5.6

(1) Employees at corporate headquarters are not required to be tested.

(2) The OSHA General Industry Lead Standard is written in units of μg of Pb/100g of whole blood. Doe Run reports their blood-lead values in μg of Pb/dL of whole blood, and all values in this report are presented as $\mu\text{g}/\text{dL}$. The conversion used is $1 \mu\text{g}/100\text{g} = 1.05 \mu\text{g}/\text{dL}$.

(3) Glover is included in the Metals Division for blood-lead data only due to the nature of their work.

Workforce Summary

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G4-10: Number of Employees by Division (Calendar Year)

(number of employees) ⁽¹⁾	2013	2014	2015
Southeast Missouri Mining and Milling Division (SEMO) ⁽²⁾	895	883	800⁽⁴⁾
Primary Smelting Division (Herculaneum and Glover) ⁽³⁾	85 ⁽³⁾	N/A	N/A
Resource Recycling ⁽³⁾	302	N/A	N/A
Metals Division (Resource Recycling and Herculaneum) ⁽³⁾	N/A	355	312⁽⁴⁾
Corporate Headquarters ⁽²⁾	114	143	124⁽⁴⁾
Fabricated Products Inc. (FPI)	40	42	42
Total Number of Employees⁽¹⁾	1,436⁽³⁾	1,423	1,278⁽⁴⁾

2015 Male and Female Employees by Division (Calendar Year)

(number of employees)	2013		2014		2015	
	Male	Female	Male	Female	Male	Female
SEMO ⁽²⁾	817	78	812	71	733⁽⁴⁾	67⁽⁴⁾
Primary Smelting Division ⁽³⁾	80	5	N/A	N/A	N/A	N/A
Resource Recycling ⁽³⁾	279	23	N/A	N/A	N/A	N/A
Metals Division ⁽³⁾	N/A	N/A	331	24	293⁽⁴⁾	19⁽⁴⁾
Corporate Headquarters ⁽²⁾	69	45	86	57	74⁽⁴⁾	50⁽⁴⁾
FPI	35	5	36	6	36	6
Total Number of Employees	1,280	156	1,265	158	1,136⁽⁴⁾	142⁽⁴⁾

Number of Employees by Employment Type (Calendar Year)

(number of positions)	2013	2014	2015
Permanent Hourly Positions	962	969	898

Permanent Salary Positions	430	427	375
Temporary Positions	37	20	1
Contracted Positions	7	7	4
Total Number of Employees	1,436	1,423	1,278⁽⁴⁾

2015 Male and Female Employees by Employment Type (Calendar Year)

(number of positions)	2013		2014		2015	
	Male	Female	Male	Female	Male	Female
Permanent Hourly Positions	938	24	944	25	874	24
Permanent Salary Positions	301	129	296	131	257	118
Temporary Positions	34	3	18	2	1	0
Contracted Positions	7	0	7	0	4	0
Total Number of Employees	1,280	156	1,265	158	1,136⁽⁴⁾	142⁽⁴⁾

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

(2) In 2013 and 2014 (respectively), the Exploration and R&D Department, and Environmental and Continuous Improvement Department counts moved from SEMO to Corporate.

(3) In 2014, the Metals Division was officially created to include the Herculaneum refinery and Resource Recycling, and the Glover facility was moved to SEMO.

(4) Lower counts reflect a workforce reduction and retirements.

LA1: New Employee Hires by Gender (Calendar Year)

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

	2013		2014		2015	
	Number	Rate	Number	Rate	Number	Rate
Male	39	66.1%	91	89.2%	22⁽³⁾	91.7%
Female	20	33.9%	11	10.8%	2⁽³⁾	8.3%
Total Number of Employees	59		102		24	

(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 total number of hires in the reported calendar year by the total number of employees as of December 31.

(3) Reduced hiring in 2015 reflects the company's adjustment to market conditions.

Employees Leaving by Gender (Calendar Year)

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

	2013 ⁽³⁾		2014		2015	
	Number	Rate	Number	Rate	Number	Rate
Male	212	91.0%	102	91.1%	138⁽⁴⁾	91.4%
Female	21	9.0%	10	8.9%	13⁽⁴⁾	8.6%
Total Number of Employees	233		112		151⁽⁴⁾	

(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 total number of terminations in the reported calendar year broken down by gender.

(3) This reflects the workforce reduction following the December 2013 closure of the Herculaneum smelter.

(4) Higher counts reflect a workforce reduction and retirements.

New Employee Hires by Age Group (Calendar Year)

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

	2013		2014		2015	
	Number	Rate	Number	Rate	Number	Rate
30 or younger	27	45.8%	48	47.1%	14⁽³⁾	58.3%
31 to 40	12	20.3%	27	26.5%	3⁽³⁾	12.5%
41 to 50	10	16.9%	16	15.7%	4⁽³⁾	16.7%
51 and above	10	16.9%	11	10.8%	3⁽³⁾	12.5%
Total Number of Employees	59		102		24⁽³⁾	

(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 total number of hires in the reported calendar year by the total number of employees as of December 31.

(3) Reduced hiring in 2015 reflects the company's adjustment to market conditions.

Employees Leaving by Age Group (Calendar Year)

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

	2013 ⁽³⁾	2014	2015
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	Number	Rate	Number	Rate	Number	Rate
30 or younger	46	19.7%	20	17.9%	14	9.3%
31 to 40	49	21.0%	22	19.6%	30	19.9%
41 to 50	67	28.8%	25	22.3%	31	20.5%
51 and above	71	30.5%	45	40.2% ⁽⁴⁾	76	50.3% ⁽⁴⁾
Total Number of Employees	233		112		151	

(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 total number of terminations in the reported calendar year by the total number of employees as of December 31.

(3) This reflects the workforce reduction following the December 2013 closure of the Herculaneum smelter.

(4) In 2014, 28% of departures were due to retirement. In 2015, 54% 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.

Workforce Training

 sustainability2015.doerun.com/workforce-training/

LA9: Average Hours of Training Per Employee (Calendar Year)

(number of training hours)	2015
Total number of training hours	22,237
Total number of employees	1,364 ⁽¹⁾
Average number of training hours per employee	16.30

Average Hours of Training Per Employee by Gender (Calendar Year)

(number of training hours)	2015
Male	16.55
Female	14.20

Average Hours of Training Per Employee By Employee Category (Calendar Year)

(number of training hours)	2015
Hourly employees	17.01
Salaried employees	14.64

(1) Total number of employees reflect total number of employees who received training during annual training periods and may not reflect year-end employee counts.

Treating Missouri Waterways with Care

 [sustainability2015.doerun.com /treating-missouri-waterways-care/](https://sustainability2015.doerun.com/treating-missouri-waterways-care/)

Doe Run's water management approach is simple: If it falls on our operations or is part of our processes, it's our responsibility to manage. Water plays a vital role in the company's mining, milling and recycling operations – and it is also vital for recreational activities and the economies of the communities where Doe Run operates.

"It's important that we care for this valuable resource by minimizing our operations' impact on the water at our properties" said Mark Yingling, vice president – environmental, health and safety. "We have invested millions of dollars collecting and treating water at our properties."

Doe Run invested \$13.2 million in 2015 to increase its water management capacity by building a water treatment plant at Buick Mine and Mill. The company partnered with engineers at Woodard Curran to build the facility – the second of five planned water treatment plants for its mines and mills. Read about the [first plant](#) at Brushy Creek Mine and Mill.

The plant's [flocculation and chemical precipitation technology](#) helps the company meet water permit limits more efficiently. Previously, water at the Buick Mine and Mill site was pumped to the tailings storage facility, where metals and other impurities settled out of the water to meet permit limits before being released to Struthers Creek via a meander system. The new plant relies on a process similar to municipal water treatment plants to collect and treat water that comes in contact with Doe Run's operations. After treatment, the water released meets the permit limits.

"Buick Mine is one of our larger mines, which means we have a higher volume of naturally occurring water to manage here than at some of our other sites," said Amber Nipper, water treatment specialist at Doe Run's Southeast Missouri Mining and Milling (SEMO) Division. "To accommodate the additional treatment needs, we built the Buick plant on a much larger scale."

When operating at full capacity, the plant can process up to 10,000 gallons of water per minute. By comparison, a similar, though smaller scale, plant at Brushy Creek Mine and Mill treats 4,000 gallons per minute. This additional capacity means Doe Run is prepared for high rain fall at the site, because any storm water flow must also be collected and sent to the plant for treatment before it can be released.

"Missouri weather can be unpredictable, and we often experience very wet springs, falls and winters, as we did in 2015. In addition, the amount of water we encounter underground in the mines can vary based on the area we are actively mining," said Samantha Anderson, environmental programs manager at SEMO. "We were very deliberate in designing a plant that can operate reliably and flexibly in even the most challenging conditions."

The company also created a basin to collect and retain storm water at No. 29 Mine in 2015. To learn about other 2015 environmental improvement projects at Doe Run, read [Fulfilling Environmental Commitments](#).

In 2016, Doe Run will build two additional water treatment plants. A plant at Sweetwater Mine and Mill will manage water collected from the site. The new plant in Viburnum will treat process waters from Casteel Mine and No. 29 Mine, as well as storm water from nearby tailings sites. A fifth and final water treatment plant is planned for 2017.

Charting a New Course for West Fork Stream

In 2014 and 2015, Doe Run's water management efforts included redirecting a portion of the West Fork Stream that ran across company property, due to a land depression that occurred in the stream and subsequent decrease in the stream's water flow. Doe Run requested and received permission from the U.S. Army Corps of Engineers and the Missouri Department of Natural Resources to create a new channel for the stream in order to protect its flow.

“The West Fork Stream flows across our property and downstream to other property owners, so it was very important for us to work collaboratively with our neighbors, county commissioners and regulators as we addressed this issue,” said Yingling. “Together, we determined that we needed to reroute a 2,350-foot portion of the West Fork Stream to preserve its flow.”

With a team of contractors, regulators and state organizations, the company engineered a new channel for West Fork Stream, located approximately 400 feet from the original channel, during summer 2014. Regulatory agencies, including Missouri Department of Natural Resources, Missouri Geological Survey and U.S. Army Corp of Engineers, provided oversight and support throughout the process. In total, Doe Run invested approximately \$1 million in the project.

“The new channel performed even better than expected,” said Yingling. “Within a few days, fish began swimming around the rocks covering the floor of the new creek channel, and aquatic plants started growing after just a few weeks. In our talks with local property owners, we heard that they are pleased with the creek’s performance and with the native plants we planted alongside the banks to stabilize the channel.”

Doe Run hopes to receive final approval from the U.S. Army Corp of Engineers and Missouri Department of Natural Resources to make the channel permanent by summer 2016. The company will fill cracks in the old channel with clay, and revegetate it with water-friendly plants. It will serve as a flood plain in the event that the new channel overflows during heavy rainfall.



Fulfilling Environmental Commitments

 sustainability2015.doerun.com/environmental-commitments/

In 2015, Doe Run improved efficiency and reduced the environmental impact of its Southeast Missouri Mining and Milling Division (SEMO) operations by investing in two environmental projects. These projects helped fulfill the company's environmental commitments as part of an [agreement](#) with the state of Missouri and the Environmental Protection Agency (EPA).

“Doe Run is delivering on the promises we made to our local communities to improve our shared environment,” said Jerry Pyatt, Doe Run president and CEO. “Since reaching the agreement in 2010, we have invested more than \$2 million in a series of environmental improvement projects at our SEMO facilities, as well as at several schools throughout southeastern Missouri. These investments support our continued promise to operate our business in a sustainable manner, minimize our impact and benefit our communities.”

Projects Harnessing Natural Resources

Not only does Doe Run mine the valuable metallic minerals in southeast Missouri, the company also relies on natural resources like water to support and, in some cases, improve operations. In 2015, Doe Run implemented an alternative way to heat and cool buildings by tapping into geothermal energy, and thereby reduce its impact to the environment.

Doe Run installed geothermal heating, ventilation and air conditioning (HVAC) systems to improve energy efficiency at Brushy Creek Mine and Mill's surface building – which houses offices and employee change rooms – as well as the SEMO central office in Viburnum. The geothermal systems rely on the Earth's constant temperature and a closed-loop system that recirculates water through heat pumps to improve efficiency. Electric compressors and the pumps help control the temperature of air that heats or cools the buildings. Using 25 percent to 50 percent less electricity than conventional heating or cooling systems, these systems also reduce carbon dioxide and greenhouse gas emissions.

In the winter, the water flowing through these pipes absorbs heat from the Earth and circulates it through a heat pump, where it warms air that is blown through the HVAC system to heat the building. In the summer, the heat pump draws heat from the building into the water pipes. The cooler water absorbs the heat from the air, and cooled air is sent back into the building. Employees can control the temperature of the building by using thermostats.

“While we experience hot summers and cold winters above ground, the temperature a few feet below the earth's surface remains relatively consistent, approximately 60 degrees Fahrenheit,” said Eric Van De Mark, civil engineer and project manager at Doe Run. “The geothermal HVAC systems harness that constant temperature for more efficient temperature control. By tapping into this renewable energy source, we're decreasing our overall energy use, environmental impact and spending.”

Doe Run invested \$1 million in this project, and worked with Microgrid Energy of St. Louis, Lee Mechanical of Park Hills, Missouri, and Ridge Runner of Salem, Missouri, to install the geothermal HVAC systems.

Many of Doe Run's other environmental investments in 2015 focused on water management. [Learn more here.](#)

Projects Managing Natural Resources

This year also marked the completion of a four-year, \$23 million process to construct concentrate enclosure systems at all four of Doe Run's mill facilities as part of the environmental commitments of the 2010 agreement. The enclosures store the lead concentrate that results from Doe Run's milling process. The lead concentrates are

eventually transported around the globe to be processed into lead metal and alloys.

Doe Run invested approximately \$8.4 million to construct the final lead concentrate enclosure and baghouse at Fletcher Mill in 2015.

“Each of the facilities filter air within the enclosure and use a negative-pressure ventilation system to minimize the potential of emissions as a result of lead concentrate handling,” said Van De Mark. “The lead concentrate enclosures help us maintain the quality of our lead concentrates by protecting them from wind, rain and snow, and also reduce potential fugitive emissions. We have since seen improvements in our [air monitoring](#).”

A Path Forward

Doe Run continues to manage other environmental projects as part of the 2010 consent decree, including implementation of [environmental management systems](#) at several of its mines and mills, and [remediation of the Herculaneum smelter property](#). While Doe Run has completed a significant portion of its agreement, the company is committed to exploring new ways to continue reducing its impact and improving its operations.

Community Projects

Doe Run invested in several other projects from 2012-2014 that brought environmental improvements to schools in the communities in which it operates as part of the agreement.

Solar Panels

Doe Run invested \$500,000 in the installation of solar panels and energy-efficiency upgrades at Herculaneum High School, which are projected to save the school more than \$44,000 annually.

School Bus Retrofits

The company issued grants totaling \$300,000 to seven Missouri school districts. These grants funded upgrades to retrofit diesel-powered school bus engines that can reduce exhaust emissions by up to 90 percent. Missouri-based Central States Bus Sales Inc. helped perform the improvements.

School Lab Cleanouts

Doe Run also contributed \$200,000 to help local schools safely dispose of chemical waste from science labs and darkrooms.

On Track with Reclamation

 sustainability2015.doerun.com/on-track-with-reclamation/

When St. Joseph Lead Company, the predecessor to Doe Run, constructed a railroad line through Herculaneum in 1890, the company probably never imagined that those same tracks would help a new Mississippi River shipping facility prosper 125 years later.

Doe Run and its predecessors built and expanded the infrastructure that established and grew the town of Herculaneum – by river, rail and road. That same river and rail access now supports the expansion of new industry for the area through the Riverview Commerce Park LLC (RCP) shipping facility, and fulfills part of Doe Run's plans for the closure and repurposing of the company's primary smelter location. RCP capitalizes on the existing infrastructure to ship materials downriver.

"The railroad line plays a critical role in transporting materials to RCP. In fact, our rail access helped us double our shipping capacity in 2015," said Mark Denton, project manager at RCP.

Expansion to the infrastructure at the river's edge also increased RCP's capacity to accommodate more shipments and improve the efficiency of operations. The port doubled in size with the construction of a second loading dock and a new barge fleet staging area where barges can park. RCP began using the staging area in spring 2015, and opened the second loading dock in spring 2016.

"Our smelting operations were a major economic driver in Herculaneum, so we are pleased that our work to remediate and repurpose the property helped bring new industry to the area," said Chris Neaville, asset development director for Doe Run. "As we continue the reclamation process at the Herculaneum smelter property, we hope to identify additional ways the land can benefit local businesses and the community."

Remediation of the 18-acre port site took place with oversight from the Missouri Department of Natural Resources (MDNR) Voluntary Cleanup Program and EPA Region 7. The remediation included installing a three-foot-thick cap layer of soil and rock across the property, which was completed in 2015. RCP has submitted the completion report for the site to MNDR and is awaiting final approval for the work.

Other reclamation work at the Herculaneum site in 2015 included moving a large amount of slag (a glassy, sand-like material leftover from smelting) situated on the north end of the property to a new slag storage area at the south end of the property. When work is completed at the site, the storage area will be capped with soil to protect the slag from rain or wind. Slag remediation is expected to be completed in 2020. While Doe Run's refinery and strip mill will continue to operate, plans are underway to dismantle the plant's furnace buildings in 2017, clearing the way for more new economic opportunities in Herculaneum.

Additional Reclamation Progress

There have been thousands of lead mines in Missouri over the centuries. Doe Run works to improve the environment through remediation of historic lead mining sites. By implementing these clean-up projects, Doe Run continues to be good stewards of our land and minerals. In total, Doe Run invested more than \$63 million in environmental spending, including remediation, in 2015.

- **Jasper County:** In 2015, Doe Run completed remediation at three historic lead sites operated by a former subsidiary, Kansas Explorations, Inc. at Jasper, Isherwood and Snapp. These efforts included excavation of soil and mine waste, and replanting native vegetation at the properties. The company also piloted an innovative way to successfully recover metals from tailings, which may be useful in future remediation projects. Doe Run will provide ongoing maintenance at the Snapp and Isherwood sites to ensure that plants

are growing and address any erosion that occurs. A private land owner is evaluating the opportunities to repurpose the Jasper site, located alongside the highway, for commercial real estate development.

- **Glover:** Doe Run continued efforts to dismantle this former smelter, which currently serves as a transloading facility. In 2015, crews removed two baghouses from the Glover facility, and received approval from MDNR to cap the slag pile. Construction on this cap will be completed in 2016.



Environmental Spending

sustainability2015.doerun.com/environmental-spending/

EN31: Total Fiscal Environmental Spending

	2013 ⁽¹⁾	2014 ⁽¹⁾	2015
Total Capital Spending and Operating Expense	68,690,187	63,420,053	50,189,445
Remediation Spending			
Historic Properties	6,072,400	5,533,608	4,299,618
Operating Properties	3,616,110	4,901,332	8,690,056
Total Remediation Spending	9,663,510	10,434,939	12,989,674
Total Environmental Spending, Including Remediation	78,353,697⁽¹⁾	73,854,992⁽¹⁾	63,179,119

(1) Spending for the Herculaneum smelter facility closure has been included starting in FY2015. 2013 and 2014 have been adjusted from previous reports.

Environmental Performance

sustainability2015.doerun.com/environmental-performance/

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.

EN1: Materials Consumed (Fiscal Year)

Units and Substances Key

Metric Ton(s): mt

Direct/Indirect

Source (mt)	2013	2014	2015
Direct Materials Used	189,379	57,120 ⁽¹⁾	43,084⁽¹⁾
Indirect Materials Used	93,056	60,394 ⁽¹⁾	43,711⁽¹⁾
Total Materials Used	282,435	117,514⁽¹⁾	86,795⁽¹⁾

Renewable/Non-Renewable

Source (mt)	2013	2014	2015
Renewable Materials Used	96	115	101
Non-Renewable Materials Used	282,339	117,399 ⁽¹⁾	86,528⁽¹⁾
Total Materials Used	282,435	117,514⁽¹⁾	86,795⁽¹⁾

(1) Overall reductions in the 2014 and 2015 totals reflect reduced production due to the closure of the Herculaneum smelter.

EN2: Direct Recycled Input Materials (Fiscal Year)

Units and Substances Key

Metric Ton(s): mt

Source (mt)	2013	2014	2015
Slag	107,134	14,036	20,600
Batteries (mt of Pb)	99,919	82,860	97,582
Lead-Bearing Material	51,796	33,621	37,582

Iron-Containing Material	17,427	15,142	13,906
Total	276,276	145,659⁽¹⁾	169,670⁽²⁾
Percentage of materials used that are recycled input materials	49%	55%	66%

(1) Overall reduction in the 2014 total is due to the closure of the Herculaneum smelter.

(2) Overall fluctuation in materials recycled is a reflection of the availability of materials.

EN3: Energy Consumption (Calendar Year)

Direct Non-Renewable Energy Source

Units and Substances Key

Gigajoule(s): GJ

Source (GJ)	2013	2014	2015
Coke	1,324,399	509,071 ⁽¹⁾	472,232
Explosives	27,265	29,289	28,275
Natural Gas	389,103	218,910 ⁽¹⁾	151,726⁽¹⁾
Petroleum Fuel	312,426	321,992 ⁽²⁾	277,685⁽³⁾
Propane	617,412	587,933	532,992
Total	2,670,605	1,667,196^(1,2)	1,462,910^(1,3)

Indirect Non-Renewable Energy Source

Source (GJ)	2013	2014	2015
Electricity	1,542,863	1,489,964	1,490,784
Total Energy Use	4,213,468	3,157,160	2,953,694

(1) Overall reductions in the 2014 and 2015 totals are due to the closure of the Herculaneum smelter.

(2) Increase is due to increased water pumping efforts, longer haul routes, and increased production for the Southeast Missouri Mining and Milling Division.

(3) Decrease reflects increased fuel efficiency and decreased production at Southeast Missouri Mining and Milling Division.

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

Division	Units	2013	2014	2015
Southeast Missouri Mining and Milling Division (SEMO)	GJ/mt Ore milled	0.26	0.29	0.28
Metals Division (Resource Recycling and Herculaneum)	GJ/mt Pb produced	11.0	9.2 ⁽¹⁾	9.0⁽¹⁾
Fabricated Products Inc. (FPI)	GJ/mt Pb produced	1.1	1.2	1.2

(1) Overall reductions in the 2014 and 2015 totals are due to the closure of the Herculaneum smelter.

EN15: Total Direct Greenhouse Gas Emissions (Calendar Year)

Units and Substances

Metric Ton(s) of Carbon Dioxide Equivalent (mt CO₂e)

	2013	2014	2015
Scope 1 (direct emissions of Greenhouse Gases, Carbon Disclosure Project, e.g. direct combustion of fuels)	300,800	159,400 ⁽¹⁾	154,411⁽¹⁾

(1) Overall reduction in the 2014 and 2015 totals is due to the closure of the Herculaneum smelter.

EN16: Total Indirect Greenhouse Gas Emissions (Calendar Year)

Units and Substances

Metric Ton(s) of Carbon Dioxide Equivalent (mt CO₂e)

	2013	2014	2014
Scope 2 (emissions from direct purchase of energy, e.g. electricity)	315,700	304,700 ⁽¹⁾	289,612^(1,2)

(1) Overall reduction in the 2014 and 2015 totals is due to the closure of the Herculaneum smelter.

(2) Overall reduction in the 2015 total is due to lower production rates in Herculaneum.

EN17: Other Relevant Indirect Greenhouse Gas Emissions (Calendar Year)

Units and Substances

Metric Ton(s) of Carbon Dioxide Equivalent (mt CO₂e)

	2013	2014	2015
Scope 3 (indirect emissions from transportation and employees' commute, etc.)	14,900	13,500 ⁽¹⁾	11,275^(1,2)

(1) Overall reduction in the 2014 and 2015 totals is due to the closure of the Herculaneum smelter.

(2) Reduction in 2015 is primarily related to reduced travel budgets.

EN18: Greenhouse Gas Emission Intensity

Units and Substances Key

Carbon Dioxide Equivalent: CO₂e

Ore: Ore milled at mining operations

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

Division	Units	2013	2014	2015
Southeast Missouri Mining and Milling Division (SEMO)	mt CO ₂ e/mt Ore milled	0.05	0.05	0.05
Metals Division (Resource Recycling and Herculaneum)	mt CO ₂ e/mt Pb produced	1.5	1.2 ⁽¹⁾	1.1⁽¹⁾
Fabricated Products Inc. (FPI)	mt CO ₂ e/mt Pb produced	0.07	0.08	0.08

(1) Overall reductions in the 2014 and 2015 totals are due to the closure of the Herculaneum smelter.

EN21: Significant Air Emissions (Calendar Year)

Units and Substances Key

Metric Ton(s): mt

Source (mt by type and weight)	2013	2014 ⁽²⁾	2015
Aluminum (Al)	0.01	0.00	0.00
Ammonia (NH ₃)	0.26	0.11	0.06
Antimony (Sb)	0.14	0.01	0.00
Arsenic (As)	3.93	0.26	0.25
Cadmium (Cd)	0.88	0.19	0.18
Carbon Monoxide (CO)	18,000	10,181	11,406⁽³⁾
Cobalt (Co)	0.02	0.00	0.00
Copper (Cu)	0.69	0.39	0.42
Hazardous Air Pollutants (HAP)	1.28	0.79	0.65
Lead (Pb)	35.3	8.6	5.7
Nickel (Ni)	0.15	0.04	0.03
Nitrogen Oxides (NO _x)	227	136	43
Particulate Matter (PM)	217	188	178
Sulfur Dioxide (SO ₂)	21,702	1,649	2,539⁽³⁾
Sulfuric Acid (H ₂ SO ₄)	2.9	2.5	2.4
Volatile Organic Compounds (VOC)	11.6	9.4	9.4
Zinc (Zn)	3.5	1.1	1.2
Total	40,206	12,178⁽²⁾	14,187

(1) Difference in yearly figures reflects process changes at Resource Recycling.

(2) Overall, 2014 fugitive air emission reductions are related to the closure of the Herculaneum smelter, and Secondary Lead Smelting MACT updates at Resource Recycling.

(3) An updated emissions factor was used to calculate carbon monoxide and sulfur dioxide emissions in 2015.

EN22: Total Water Discharge (Calendar Year)

Units and Substances Key

ppb: parts per billion

Source (average ppb/year) ⁽¹⁾	2013	2014	2015
Lead	151	124	132
Zinc	698	444	431
Copper	7	6	6
Total water discharge (gallons/year)	16,709,359,732	14,348,918,834	19,332,828,453

(1) All data sources represented are reported in average ppb/year to be consistent with permit reporting requirements. Previous reporting cycles reported this information in kg/year. Data has been converted for previous years to reflect the change in reporting methodology.

Detective Work 1,200 Feet Underground

sustainability2015.doerun.com/mine-exploration/

Successful mining starts with strong investigative skills and sound interpretation skills. “We are using data to help create a picture of what’s underground, long before we ever sink a mine shaft and cut a drift (underground tunnel),” said George Moellering, exploration manager at Doe Run’s Southeast Missouri Mining and Milling (SEMO) Division. “It’s a lot like putting together a puzzle without knowing in advance what the end image looks like.

“We collect data from core samples¹ and historical geological information known about an area, and then begin interpreting that data to provide us with a picture of what we believe is taking place underground. Based on the data, we estimate tonnage and the ore grade². If it appears the grade and tonnage provide a reasonable economic return, we begin developing the area for mining.”

Determining Economic Value

Before a new ore body is determined to have sufficient economic value to mine, several teams evaluate criteria, including ore grade, the distance from existing mined areas to the ore body, elevation and costs to reach the ore body.

As a company, Doe Run maintains a core library dating back to approximately 1949 when predecessor St. Joseph Lead Company explored what is today known as the Viburnum Trend. The library contains samples from more than 10,000 surface drill holes. The successful exploration and subsequent mining of this area of southeast Missouri has earned the Viburnum Trend a global reputation as the second-largest lead mining district in the world.

In 2012, the company began its review process for completing mining in this area of the Brushy Creek Mine. As part of their protocol, Doe Run reviews all past surface and underground prospecting data (both log books and core samples) and checks in with work crews to discuss any significant underground mineral observations to ensure that valuable mineralization will not be stranded and unattainable. During this process, the mine geology group noted copper mineralization had been observed in sections of the mine floor during the mining crew’s final pass through the area.

The review processes identified the core log entries from 1981, which supported the initial rationale for mining the area.

Doe Run’s Core Room

Measuring Core Samples

Core samples are cylinder mineral samples generally 1-5” in diameter drilled out of an area to determine the geologic and chemical makeup.

Examining Mineral Make-up

The core room contains samples from more than 10,000 surface drill holes. Geologists use bright lights and magnifying glasses to carefully examine samples.



Archiving Data

Doe Run maintains a core library dating back to approximately 1949. Geologists log the minerals identified in each sample to inform future drilling.

“Our mine geologists reviewed the core samples that indicated six ore runs were originally identified in the area of the Brushy Creek Mine,” said Moellering. “Five of those ore runs represented the upper zone of the Bonneterre Formation, which we had been mining for decades. The sixth ore run on the core sample represented a new zone on a previously unmined level of the mine, some 100 feet below our mined areas, near the Lamotte sandstone.”

This sixth run, indicated in the core sample, was ignored over the years because a series of surface exploration drilling did not suggest strong mineralization. Furthermore, once mining in the upper portion of the Bonneterre Formation took place, surface drilling to the lower ore zone was not possible and underground jackhammer drilling methods were not capable of reaching the lower ore zone.

Separately, these two puzzle pieces seemed insignificant, but when placed together in context, they revealed something completely different.

Based on these two findings, the historic core logs and newly observed mineralization, the mine team began underground exploration with a diamond drill in August 2012. And over the next several months, crews drilled 48 holes that indicated mineralization existed from the floor of the last mining pass at 122 feet elevation all the way to 35 feet below sea level. In some places, the mineralization was 150 feet thick. Most surprising, from a geological standpoint, was that the highest grade ore was located at the point of contact between the bottom of the Bonneterre Formation and the Lamotte sandstone.

As a result of the exploration, 11 separate areas (known as ore blocks) were identified as prospects. The final tonnage for the combined blocks was estimated at more than 430,000 tons of lead, zinc and copper ore with an ore grade about three times the mineralization traditionally found in the area.

It took development crews approximately eight months to develop this unique mining zone in order for mine crews to gain access to the ore.

“Getting to this ore body created some challenges,” said Randy Hanning, mine operations manager. “This is the first ore body next to the Lamotte sandstone, which was a new situation for us. The sandstone is pretty porous as opposed to our traditional mine horizons that are in dolomite, a much harder and more stable host rock.” To compensate, crews made modifications to the mine design in order to respond to the mine conditions and ore grade.

Addressing ventilation requirements at that depth also required a different approach with the mine crews drilling a 125-by-6-foot opening through the roof of the new area to the floor of the previous area to improve ventilation. Expedited advancements by the development crew to the lower zone allowed production from the area to begin in June of 2014. The extra effort has paid off with high mineralization of galena (lead), sphalerite (zinc) and chalcopyrite (copper).



“Unlike our extraction in the Bonneterre zone, where we have long understood the pattern and elevation of the ore, the Deep Ore Zone mineralization at Brushy Creek is located at a greater depth – nearly sea level – and the mineral content from one mining advance to the next is less predictable,” explained Chris Hogan, Brushy Creek Mine geologist. “So far, we have been successful in recovering nearly 100,000 tons of this resource between June 2014 and the end of 2015, but we still have only a portion of the puzzle put together for this area, so we believe we have a long way yet to go. This is what makes exploration so rewarding, and is what extends the life of our mines.”

- (1) Cylinder mineral samples, generally 1 to 5 inches in diameter, drilled out of an area to determine the geologic and chemical makeup.
- (2) Ore grade is based on the concentration of minerals found in the ore or host rock.

Growing Partnerships Through Responsible Forestry

 sustainability2015.doerun.com/responsible-forestry/

Doe Run's commitment to be responsible with the resources in its care extends from the minerals mined underground to the land above. As part of this promise, Doe Run oversees more than 70,000 acres of land, including 35,000 acres of forests located around its operations in several counties in southeast Missouri.

"Many people see timber as a non-renewable resource because trees are removed in the process. This couldn't be further from the truth," said Dave Patterson, forester at Doe Run. "In fact, part of responsible forestry is harvesting some trees to give other growing trees room to thrive. Some trees can be harvested every year into the foreseeable future to provide timber-based products and valuable jobs when a forest is sustainably managed."

In 2015, Doe Run-managed forests provided approximately 3 million board feet of timber used to create forest products, such as railroad cross ties, hardwood flooring, steel mill blocking, pallet material and cabinets. One company even uses the timber to make barrels for wine and spirits right here in Missouri.

Doe Run Partnerships Grow Missouri's Economy (EC9)

In 2015, Doe Run supported Missouri businesses by spending more than \$153 million with 632 Missouri vendors. This accounts for **43 percent** of total company spending.

[Read more](#) about how the lead market influences Doe Run's spending.

Doe Run's Vision for Sustainable Forestry

Sustainable forestry means taking responsibility for the overall health of the ecosystem. Doe Run divides its forests into stands – sections of land up to 40 acres where trees and soil have similar characteristics. Forestry experts closely monitor the growth and health of each stand, and approximately every 15 to 20 years, Doe Run hires local loggers to harvest trees in a particular stand. A sawmill in Boss, Missouri, cuts those logs into green lumber, which is then purchased by local operations, such as a flooring plant and pallet-making company.

Harvesting trees in this systematic way allows Doe Run to provide timber to local partners, while also maintaining the ecological balance of the land. The surviving trees then have enough room in nutrient-rich soil to grow big and strong.

"When determining where to harvest, we take into consideration factors like the natural topography, soil, erosion patterns, water quality and the wildlife that live in that ecosystem of the forest," said Patterson. "From there, we identify whether some trees need to be thinned out so stronger trees can grow to maturity. We also evaluate if we need to plant additional trees to help that ecosystem flourish. Doe Run's goal for our responsible forestry is to work with mother nature and not disrupt the natural balance of our land."

If an area of the forest needs to be replanted, crews plant the appropriate tree species to thrive in that environment. As of 2015, Doe Run has replanted approximately 600,000 seedlings throughout its forested land in southeast Missouri.

The Power of Missouri White Oak

White, black and red oak make up approximately 75 to 80 percent of Doe Run's harvested timber. Most of the timber harvested from Doe Run's forests supports products at a number of local companies. White oak in particular is highly desired for barrel making, which makes it a valuable local resource for [Independent Stave Company](#), the

world's largest supplier of staved barrels for wine and spirits, based in Lebanon, Missouri.

"White oak trees grow slowly, which means they have more rings when they are harvested," said Justin Nichols, log procurement manager at Independent Stave. "The rings in older trees are important in cooperage, or barrel making, because they provide a deeper flavor as the spirits or wine soak into the barrel. White oak's chemical complexity offers a multitude of options for creating different flavors.

Doe Run serves as one of Independent Stave's top ten suppliers of white oak timber. In 2015, Independent Stave purchased more than 200,000 board feet of white oak from Doe Run to craft barrels for wineries and distilleries around the world.

"We do not harvest any of our own timber. We rely on more than 2,000 Missouri suppliers to provide the white oak we need," said Nichols. "Our partnership with Doe Run helps us provide customers with high-quality barrels, and supports jobs right here in Lebanon."

From Bark to Barrels

Cooperage, or barrel making, is a multi-step process that can take three to six months to complete. Because Independent Stave's white oak barrels are highly desired to age some of the finest wines and spirits around the world, each barrel is closely inspected prior to distribution to ensure high-quality standards are met.

Step 1

Sawmills cut logs into vertical planks called staves. White oak staves contain a natural substance called tyloses that makes the wood watertight.



Step 2

The staves are formed into a barrel shape by applying heat, steam and pressure. Metal hoops hold the staves in the curved shape.

Step 3

The inside of a completed barrel is toasted to create a blackened surface called char. Charring releases sugar in the wood that provides unique flavors for wine and whiskey stored in the barrel.





Financial Highlights

sustainability2015.doerun.com/financial-highlights/

EC1: Financial Highlights (Fiscal Year)

(dollars in thousands)	2013	2014	2015
Property Taxes	\$7,345	\$7,368	\$6,727
Compensation	\$156,470	\$144,202	\$131,424
Community Investment ⁽¹⁾	\$243	\$157	\$197
Environmental Spending ⁽²⁾	\$78,354	\$73,855	\$63,179⁽³⁾
Research and Development	\$2,315	\$1,803	\$1,564
Royalties to Governments	\$10,156	\$10,565	\$10,108
Capital Spending (excluding environmental capital expenditures)	\$15,324	\$24,089	\$12,350⁽²⁾

(1) Includes donations, scholarships and tuition reimbursement.

(2) Spending for the Herculaneum smelter facility closure has been included starting in FY2015. 2013 and 2014 have been adjusted from previous reports.

(3) Capital investment was reduced in 2015 due to the low metal price environment.

Corporate Governance

 [sustainability2015.doerun.com /governance/corporate-governance/](https://sustainability2015.doerun.com/governance/corporate-governance/)

The Doe Run Resources Corporation, doing business as The Doe Run Company (Doe Run), is privately held by the New York-based [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; vice president – environmental, health and safety; and vice president of SEMO operations. The executive team is 88 percent male and 88 percent Caucasian, and encompasses an age range of 45-70 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 with input from a Sustainability Governance Committee led by the vice president – environmental, health & safety. In this role, the vice president – environmental, health & safety, along with the president and chief executive officer and the vice president – human resources & community relations, review and approve Doe Run's annual sustainability report. The Sustainability Governance Committee designates a team of employees to compile data and content for the 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 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 9000 programs, 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, and Resource Recycling facility also hold ISO 14001 certification, which focuses on environmental management. Specifics related to these certifications are included in our full GRI report. 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 subcontractor, 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 in 2012 and 2014). 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.

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 & 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 reporter 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 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

 sustainability2015.doerun.com/governance/report-parameters/

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 minimize its environmental impact. A Sustainability Governance Committee, established in 2012, is 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. The committee chair also approves the material topics, content and indicators chosen for the reports.

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 continue 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 addition, the Sustainability Governance Committee and Doe Run's general managers identified the main challenges, accomplishments and progress within the company in 2015, including a reduction in workforce, progress on environmental projects, workforce safety and the global market's impact on business decisions.
- Doe Run then prioritized which [GRI aspects and data indicators](#) were material both inside and outside the organization to focus on in the 2015 report:
 - Environmental capital investment and performance, which relates to all operations
 - Workforce data for all operations
 - Direct and indirect economic impact
 - Community involvement
 - Employee health and safety at all operations

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; regulatory agencies; and [industry organizations](#).

Community groups and leaders

Key Interests and Concerns

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

Engagement Methods

- Conducted community surveys in 2014 and 2012.
- Maintain ongoing engagement through a number of community events, including Old Miners' Days and Fall Rocks.
- Maintain involvement in various community organizations, including the Viburnum Economic Development Area Corporation, Salem Chamber of Commerce, Washington County Chamber of Commerce, The Salem TCRC (The Community Resource Center), Missouri University of Science and Technology, Mineral Area College, and various volunteer programs and donations to local charitable organizations, school districts and sports clubs.
- Share company updates via news releases.

Property owners and neighboring residents

Key Interests and Concerns

Seek information related to the 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 2014 and 2012.
- Communicate directly with nearby residents if a situation arose.
- Share company updates via news releases and local newspaper and radio interviews.

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 communications survey in 2014 and 2012.
- 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.

- Provide free tours annually on Old Miners' Days.
- Hosted Retiree Pancake Breakfast in 2014.

Local, state and federal government

Key Interests and Concerns

Seek information about operational performance, specifically around environmental impact and health and safety. Local and state government is 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.
- Sit on Lead Industry Task Force in Missouri to help inform legislators about the lead mining industry.
- Regularly invite local and state legislators 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.
- Testified before the U.S. House Natural Resources Committee Subcommittee on Energy and Mineral Resources in 2014.

Business groups

Key Interests and Concerns

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

Engagement Methods

- Hold current board positions for the Regional Business Council and St. Louis Regional Chamber.
- Hold board position in the Associated Industries of Missouri.
- Maintained membership in the Missouri Chamber of Commerce in 2015.
- Share company updates via news releases.

Nearby school districts and colleges

Key Interests and Concerns

Seek information related to funding, including local taxes and donations that benefit schools. Also seek information to expose 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 Institute for Science and Technology and Minerals Area College, such as donations toward key programs.
- Offer minerals education programs at local school districts.
- Offer internships and job training.
- Share company updates via news releases.

Regulatory agencies

Key Interests and Concerns

Seek information related to company's performance against environmental and health and safety regulations.

Engagement Methods

- Submit annual reports with detailed data on environmental, health and safety performance.
- Meet regularly to discuss current performance and the state of the business, and to address legacy issues with Missouri Department of Natural Resources, Region 7 EPA and Natural Resources Trustees.

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:
 - ILA; ABR; BCI; ALABC; Mining Industry Council; 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, and please consider answering a few questions via our [online survey](#).

GRI Index

 sustainability2015.doerun.com/governance/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

G4-1

Statement from the most senior decision-maker of the organization

[Message from the CEO](#)

Organizational Profile

G4-3

Name of the organization

The Doe Run Resources Corporation/DBA The Doe Run Company

G4-4

Primary brands, products, and services

[Organizational Profile](#)

G4-5

Location of the organization's headquarters

St. Louis, Missouri, United States

G4-6

Countries where the organization operates

United States (Missouri, Arizona and Washington)

G4-7

Nature of ownership and legal form

The Doe Run Resources Corporation is a corporation, which is an indirect subsidiary of The Renco Group.

G4-8

Markets served

Primary customers served include battery manufacturers in the U.S.; concentrates are sold globally.

[Organizational Profile](#)

G4-9

Scale of the reporting organization

[Organizational Profile](#)

[Financial Highlights](#)

As a private company, net sales, net revenue and total capitalization is proprietary information and viewed as business confidential.

G4-10

Total workforce by employment type, employment contract, and region, broken down by gender

[Workforce Summary](#)

G4-12

Organization's supply chain

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 \$153 million in spending to Missouri-based suppliers in 2015, representing 43 percent of Doe Run's overall supplier spending.

G4-13

Significant changes during the reporting period

[Letter from the CEO](#)

G4-15

Externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses

The Doe Run Company, through its membership with the International Lead Association, subscribes to the principles of the [shared Lead Action 21 program](#). We aim to ensure the safe production and use of lead now and in the future while safeguarding human health and minimizing 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.

G4-16

Memberships of associations or organizations

Identified Material Aspects and Boundaries

G4-17

Entities included in the organization's consolidated financial statements or equivalent documents

All Doe Run entities have been reported.

[Organizational Profile](#)

G4-18

Process for defining report content

Reporting Process

G4-19

Material aspects identified for defining report content

Reporting Process

G4-20

Aspect boundaries inside the organization

All Doe Run entities have been reported. All sizeable economic, environmental and social impacts are included either in the stories or the data.

G4-21

Aspect boundaries outside the organization

Reporting Process

G4-22

Restatements of information provided in previous reports, and the reasons for such

Environmental Spending

G4-23

Report significant changes from previous reporting periods in the Scope and Aspect Boundaries

None

Stakeholder Engagement

G4-24

List of stakeholder groups engaged by the organization

Reporting Process

G4-25

Basis for identification and selection of stakeholders with whom to engage

Reporting Process

G4-26

Approach to stakeholder engagement

Reporting Process

G4-27

Key topics and concerns that have been raised through stakeholder engagement

Reporting Process

Report Profile

G4-28

Reporting period

2015 Calendar (Fiscal year reporting is noted where appropriate.)

G4-29

Date of most recent previous report

Published in August 2015

G4-30

Reporting cycle

Annual

G4-31

Contact point

corporateinfo@doerun.com

G4-32

In Accordance with Guidelines

This report contains Standard Disclosures from the GRI Sustainability Reporting Guidelines.

Governance

G4-34

Governance structure of the organization

[Corporate Governance](#)

G4-35

Process for delegating authority to address economic, environmental and social topics

[Corporate Governance](#)

G4-36

Position responsible for economic, environmental and social topics

[Corporate Governance](#)

G4-38

Composition of the company's highest governing body

[Corporate Governance \(partially disclosed\)](#)

G4-39

Indicate whether the Chair of the highest governance body is also an executive officer

No

G4-42

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

[Corporate Governance](#)

G4-48

Highest position that formally reviews and approves the sustainability report

President and CEO

Ethics and Integrity

G4-56

Organization's values, principles, standards and norms of behavior

[Core Values](#)

Specific Standard Disclosures

Economic

G4-EC1

Direct economic value generated and distributed

[Financial Highlights \(Partially Disclosed\)](#)

G4-EC7

Development and impact of infrastructure investments and services supported

[On Track with Reclamation](#)

G4-EC9

Proportion of spending on local suppliers at significant locations of operation

In 2015, Doe Run supported Missouri businesses by spending more than \$153 million with 632 Missouri vendors. This accounts for 43 percent of total company spending.

[Growing Partnerships Through Responsible Forestry](#)

Environmental

G4-EN1

Materials used by weight or volume

[Environmental Performance](#)

G4-EN2

Percentage of materials used that are recycled input materials

[Environmental Performance](#)

G4-EN3

Energy consumption within the organization

[Environmental Performance](#)

G4-EN4

Energy consumption outside of the organization

[Environmental Performance](#)

G4-EN5

Energy intensity

[Environmental Performance](#)

G4-EN15

Direct greenhouse gas (GHG) emissions (Scope 1)

[Environmental Performance](#)

G4-EN16

Energy indirect greenhouse gas (GHG) emissions (Scope 2)

[Environmental Performance](#)

G4-EN17

Other indirect greenhouse gas (GHG) emissions (Scope 3)

[Environmental Performance](#)

G4-EN18

Greenhouse gas (GHG) emissions intensity

[Environmental Performance](#)

G4-EN21

NO_x, SO_x, and other significant air emissions

[Environmental Performance](#)

G4-EN22

Total water discharge by quality and destination

[Environmental Performance](#)

G4-EN29

Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with environmental laws and regulations

Doe Run paid no (\$0) significant fines for noncompliance with environmental laws and regulations in 2015.

G4-EN31

Total environmental protection expenditures and investments by type

[Environmental Spending](#)

Labor Practices and Decent Work

G4-LA1

Total number and rates of new employee hires and employee turnover by age group, gender and region

[Workforce Summary \(Partially Disclosed\)](#)

G4-LA6

Type and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities by region and by gender

[Health and Safety Performance \(Partially Disclosed\)](#)

G4-LA9

Average hours of training per year per employee by gender and employee category

[Workforce Training](#)

Society

G4-SO1

Local community engagement, impact assessments, and development programs

All operations implement a localized community engagement plan.

[Fulfilling Environmental Commitments](#)

G4-SO8

Monetary value of significant fines and total number of non-monetary sanctions for non-compliance with laws and regulations

In 2015, Doe Run paid approximately \$164,000 in fines and non-monetary sanctions related to laws and regulations.

Product Responsibility

G4-PR9

Monetary value of significant fines for non-compliance with laws and regulations concerning the provision and use of products and services

Doe Run paid no (\$0) significant fines for noncompliance concerning provision and use of products and services in 2015.

Glossary

 sustainability2015.doerun.com/governance/glossary/

Advanced Lead Acid Battery Consortium (ALABC): An international research and development consortium dedicated to enhancing the capabilities of the lead-acid battery to ensure its competitiveness in various energy storage markets. Doe Run is a founding and current member of ALABC.

Alloy: A mixture of metals.

ASARCO Inc.: A former lead mining and smelting company that operated in Missouri, from which Doe Run purchased some properties.

Baghouse: A type of ventilation system used to control air emissions and reduce dust to improve environmental performance.

Behavior Based Safety (BBS): A system used internationally, often by manufacturing industries, that uses demonstration, one-on-one observation and job feedback to recognize safe behaviors and explore behavioral reasons for unsafe acts.

Chat: A gravel-like waste product from the milling/mining process used before froth flotation was developed in the 1920s. Chat contains minor amounts of lead, zinc and other metals.

Concentrate: A term used to describe the product created after raw ore is milled, then physically separated from waste rock (tailings).

Electrocoagulation: A water treatment process that removes metal particles from water using electrical currents.

Electrowinning: In a specialized tank, a current is passed from inert carbon-based anodes through a liquid leaching solution, which contains dissolved metal. The electrical current causes the metal to be deposited onto cathodes, where it is later harvested.

Emissions⁽¹⁾: The gases and particles put into the air or emitted by various sources.

Environmental Protection Agency (EPA)⁽¹⁾: The national federal agency whose mission is to protect human health and safeguard the natural environment.

Flocculation: A water treatment process in which chemicals encourage metal particles to cluster together to settle out of the water.

Galena: Lead sulfide, the most common type of lead ore.

International Organization for Standardization (ISO): The world's largest developer of international standards, including standards for environmental management and product quality and safety.

Job Safety Analysis (JSA)⁽²⁾: A multi-step safety process that encourages employees to evaluate a job to identify potential hazards and determine safe job procedures. Employees document the information for coworkers and future employees.

Lead⁽³⁾: A soft, malleable, dense metallic element that is extracted chiefly from galena. It is also found in ore with zinc, silver and copper.

Milling: The process that extracts much of the desirable mineral from ore through screening, crushing and grinding.

Mine Safety and Health Administration (MSHA) ⁽⁴⁾: The federal enforcement agency responsible for the health and safety of miners.

Missouri Department of Natural Resources (MDNR): The Missouri governing body that provides assistance, education and guidance in the use and protection of Missouri's natural resources.

Missouri Enterprise: An organization that provides business, technical and manufacturing optimization services for Missouri businesses.

Occupational Safety and Health Administration (OSHA) ⁽²⁾: The federal agency charged with enforcing safety and health legislation, specifically for the workplace.

Ore: A naturally occurring mineral containing a valuable constituent (as metal) for which it is mined and worked.

Parts Per Trillion (ppt): A measure of concentration used to easily compare environmental situations. One ppt is 1 part in 1,000,000,000,000.

Primary Lead: Lead metal produced from extracted lead-bearing ore. Primary lead is sometimes called virgin lead.

Remediation: Activities conducted to restore sites impacted by mining and mineral processing by removing the materials and stabilizing the surface, or by encapsulation. Also called reclamation.

Secondary Lead: Lead produced from recycling lead-bearing material.

Smelting⁽³⁾: The process of reducing lead-bearing material into metallic lead in a furnace. The end result is refined lead.

St. Joe Shovel: The world's first electric shovel for mining, which was designed by engineers at St. Joseph Lead Company.

St. Joseph Lead Company: A Doe Run predecessor company operating in southeast Missouri.

Tailings: Ground-up, sand-sized rock that is the byproduct of milling and mining; often called the "tail end" of the mining process.

Source of Definitions:

(1) EPA

(2) OSHA

(3) International Lead Association

(4) MSHA