

# SUMMARY

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# MESSAGE FROM **THE CEO**

At Jaguar Mining, our commitment to responsible and sustainable mining is a cornerstone of our values and guides everything we do. We strive to build strong relationships in our communities and continuously work to improve our safety practices to protect the health and safety of our employees.

Minimizing our impact on the environment is an important priority and our duty.

We are focused on building trust with our stakeholders.

Last year, we introduced our "Seeds of Sustainability" report, which set in place our culture of accountability. In it, we outlined our commitment to providing more transparency to all of our stakeholders on our responsible mining practices and sustainability performance, and particularly on how we measure against best industry practices.

While this is our second annual sustainability report, we are pleased to be able to report on our performance over the last year, for the first time, in full accordance with the Global Reporting Initiative (GRI), the first globally recognized standards for sustainability reporting.

Against the backdrop of a challenging economic environment in Brazil, we achieved even better results across our operations and in our communities in 2017. We have made excellent progress in several key areas such as safety, the environment and relationships within our communities. These results signal the deep commitment our employees have towards living our values and ensuring Jaguar continues to grow sustainably to create long-term value for all.

As part of our commitment toward transparency and corporate governance, we updated our Code of Ethics and shared this with our employees, emphasizing the importance of fair conduct to further embed good governance.

Created as a direct result of the Sustainability Report is the Company's Seeds of Sustainability Program, which resulted in a series of social initiatives carried out by Jaguar in 2017.

Last year, the Company supported 12 local institutions, promoting the growth and development of the communities where we operate.

While we are currently a junior producing gold mining Company focused on becoming a mid-tier gold producer, we believe our strong social responsibility performance and transparent reporting to our stakeholders positions us well among much larger gold producing companies.

Looking ahead, we encourage all of our key partners to learn more about our initiatives as we build to deliver sustainable and responsible growth. We will continue to operate with our core values in mind to ensure we deliver lasting value to our shareholders, our employees and the people in our communities.

"These results signal the deep commitment our employees have towards living our values and ensuring Jaguar continues to grow sustainably to create long-term value for all."

Rodney Lamond

#### ABOUT THE REPORT

GRI is a organization whose methodology - applied by various corporations and institutions worldwide - allows comparing the evolution of performance indicators within an organization or among different companies of the same sector.

This is Jaguar Mining's second Sustainability Report. This report accurately accounts for the most relevant aspects of the Company's performance and management of economic, environmental and social impacts caused by its operations. This document encompasses all of the Company's operations based on the

guidelines of the **Global Reporting Initiative (GRI)**. The following pages detail Jaguar Mining's value and management model, as well as all operational, social and environmental indicators, disclosing the Company's main results and challenges throughout the period between January 1 and December 31, 2017.

#### Adjusting the Focus

The reporting process is based on mapping and prioritizing material subjects, which reflect the Company's most significant impacts.

The first stage involved an internal assessment, based on existing documents and inquiry forums, in order to identify the most recurrent subjects. Subsequently, leaders from all of the Company's areas conducted an in-depth analysis to assess

each subject's impact on Jaguar Mining's business and the decision-making process. As a result of this process, ten material subjects were prioritized and extensively covered in this report.

These subjects were grouped into three main chapters: People, Environment, and Dialogue and Relationships, featuring Jaguar Mining's main results and challenges in 2017.

# ABOUT THE **PROCESS**

# Identifying subjects

- Analysis of internal documents and inquiry forums, such as climate survey, reporting array, reports from the Diálogo Aberto [Open Dialogue] program, internal newsletters and publications.{1}
- Analysis of industry-specific documents (studies and surveys).
- Media survey focused on the Company and the business.

## Relevance analysis

- Relevance of each subject for the sector, the Company and the stakeholders.
- Relevance of the subject for the organization's leaders.

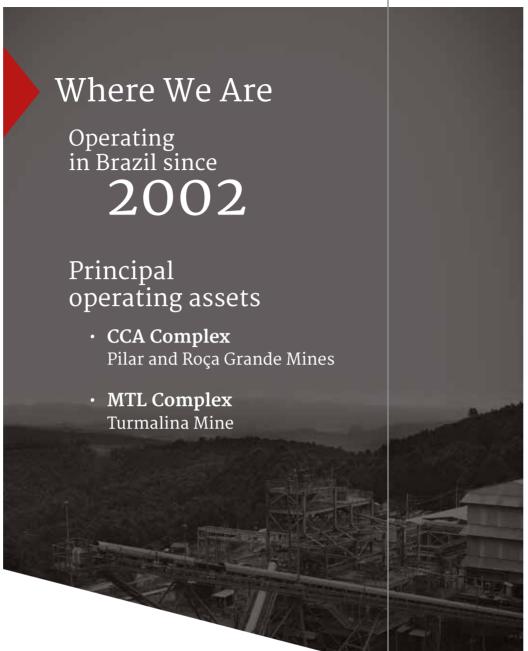
After reviewing, identifying and prioritizing subjects, they were subsequently grouped and validated by the Company's management, which ultimately chose 10 material subjects to be presented in this report.

#### Our Material Subjects

- 1 Job and income generation (positions, local workforce)
- 2 Occupational health & safety
- 3 Staff training
- 4 Compensation and benefits
- 5 Local development and relationships
- 6 Donations, partnerships and sponsorships
- 7 Transportation impacts
- 8 Impacts of ore transportation
- 9 Management of water resourses and safety of tailing dams
- 10 Environmental licensing and legal milestones

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# WE ARE JAGUAR

**CHAPTER 1** 









# CREATING SUSTAINABLE VALUES ACROSS THE ENTIRE PRODUCTION CHAIN

Headquartered in Toronto, Canada, Jaguar Mining operates in gold prospecting, mining and project development. The Company began operating in Brazil in 2002, after acquiring MSOL - Mineração Serras do Oeste Ltda. In 2005, the Company began its operations in the city of Sabará (MG). Throughout the years, the Company acquired mining rights and ultimately expanded its operations in the state of Minas Gerais. In 2017, the principal operating assets were the CCA Complex, which includes the Pilar and Roça Grande Mines, and the MTL

Complex, with the Turmalina Mine.

These assets yielded a combined total of 84,152 ounces of gold in 2017.

Jaguar also has other projects to be implemented in the future, such as the CPA Complex, also in Minas Gerais, which is currently undergoing feasibility studies to resume production over the next few years. In Northeastern Brazil, there is also the Pedra Branca Project in Ceará, and the Centro Gold Project in Maranhão, which will be developed through a joint venture with Avanco Resources.

# MAIN FIGURES IN 2017

Operational Performance*	84,152 oz
Staff	Employees: 1,134 Outsourced: 530
Revenue	Gross: BRL 461,976,706.07 Net: BRL 460,877,337.38
Taxes	BRL 2,310,084.08
Social Investment**	BRL 924,448.00
Environment Funds***	BRL 5,238,650.80



Distributed as follows: BRL 374,674.00 destined to sponsorship and support of socio-cultural, education, environment, job and income generation projects, and BRL 549,774.00 destined to public-private partnerships and infrastructure.

<sup>&</sup>quot;Environment funds include water resource monitoring, environmental offsetting, acid mine drainage, maintenance of decommissioned areas, monitoring of atmospheric emissions, and waste management.



### TIMELINE

~ 2002

Establishment
of Jaguar and
acquisition of
Mineração Serras do
Oeste Ltda. - MSOL.
IPO in the Toronto
Stock Exchange
(Canada)

Beginning of operations at the MTL Complex 2009~

Acquisition of MCT and Gurupi Project kick-off; Interruption of operations at Sabará Jaguar manages all of these ventures guided by the mission of creating and fostering sustainable values, ultimately delivering positive results to shareholders, employees and the communities where we operate.

2012

Interruption of operations at the CPA Complex

2015

Petition for new areas of the Gurupi Project (Centro Gold) and Pedra Branca{j} Project 2017

Sale of the Gurupi Project (Centro Gold); promotion of the new Jaguar culture

2005

Beginning of operations in Sabará

<sup>L</sup> 2007

Beginning of operations at the CPA Complex

2010

Beginning of operations at the CCA Complex

2013 -

Financial restructuring of Jaguar

2016

Establishment of a joint
venture with Avanco
Resources to manage the
Gurupi Project, currently
referred to as Centro Gold
Project; Launch of the new
Jaguar Mining brand, as well
as the new Mission, Vision
and Values

#### CORPORATE GOVERNANCE

Jaguar abides by good corporate governance practices, which is why the Company has a Board of Directors and an Oversight Commission. The Board is the Company's highest authority, comprised of one president and seven directors. The following supporting committees assist the Company's Board of Directors: Governance Committee, Compensation & Nominating Committee, Safety & Environment Committee, Technical & Reserves Committee, and the Audit & Risk Committee.

The last one is composed of three independent members, who ensure the financial statements' integrity, also ensuring that management develops reliable internal controls and provides support for strategic decisions of the Company.

The Internal Audit works independently and reports directly to the Audit & Risk Committee; its main role is to oversee and assess the adequacy of internal controls based on procedures established by management. The area proactively recommends improvements in internal controls based on best market practices. It also investigates reports and ensures compliance with the Code of Ethics.

The Oversight Commission controls the procedures and principles that guide all of Jaguar's processes.

The Oversight Commission is responsible for overseeing and implementing strategic guidelines defined by the Board of Directors, in addition to establishing supporting guidelines to conduct business activities. The Management Committee is comprised of the CEO, the CFO and two Expert Advisors of Geology and Exploration.

Jaguar will continue to act proactively to ensure that its corporate governance practices are guided by ethical standards and best practices of its Board, executives, employees and suppliers.

The Board of Directors is comprised of one chairman and seven directors and is assisted by five supporting committees.

### Board of Directors

Chair

Richard Falconer

Directors

Ben Guenther

**Edward Reeser** 

John Ellis

Luís Ricardo Miraglia

Robert Getz

Rodney Lamond

Thomas S. Weng

#### 2017

- Update of the Code of Ethics based on the antiretaliation policy and the Company's stance against discrimination.
- Broader dissemination of the Code of Ethics among stakeholders.
- Subscription to the Pact for Integrity and Against Corruption of the Ethos Institute

#### Oversight Comission

President & Chief Executive Officer

Rodney Lamond

Chief Financial Officer

Hashim Ahmed

Expert Advisors of Geology and Exploration

Jonathan Victor Hill Jean-Marc Lopez

General Managers of Operation

Luis Antônio Abadi Eric Duarte

General Manager of Supplier and Sustainability

Roberto Piragibe

#### WHISTLEBLOWER CHANNEL

- **(C)** 0800 891 1667
- (a) www.jaguarmining.com.br/denuncia

#### ETHICS AND TRANSPARENCY

#### **Delegating Authority**

Jaguar has a Delegation of Authority policy that establishes guidelines, responsibilities and procedures in order to ensure compliance with Jaguar's approval level matrix. The policy also determines the extent of the employee's liability and authority granted by the Company.

#### Transparency

Jaguar makes publicly available several means of contact, including a website, whistleblower hotline (via telephone and internet), Communities Relationship Channel and a communication tool for Health, Safety and Environment related reports. In order to further guarantee integrity and ethical values, Jaguar signed the Brazilian Business Pact for Integrity and Against Corruption in 2017.





#### Compliance With Laws And Regulations

The Company conducts activities in accordance with the laws and regulations in the countries in which it operates, in addition to complying with its own internal rules, standards and procedures based on best market practices.

Jaguar is also in compliance with the Extractive Sector Transparency Measures

Act (ESTMA). This law meets Canada's international commitments to contribute to global efforts to increase transparency and prevent corruption in the extractive sector through the annual disclosure of payments made to all governments within and outside Canada.

#### Management of Suppliers

Jaguar has a corporate register of suppliers with the objective of evaluating these partners from technical, economic-financial, legal-fiscal, integrity and SMS requirements (Safety, Environment and Health). The register serves as the database to selection

of suppliers in competition proceeding, both the holding Company and their subsidiaries. The evaluation criteria vary according to the criticality of the items, and may include onsite technical evaluations of the candidates.



# GUIDELINES AND CHARTERS OF THE BOARD OF DIRECTORS

#### Code Of Conduct And Ethics

Jaguar's Code of Conduct and Ethics was prepared by the Executive Board and is in accordance with the Company's values and principles. It defines social and environmental responsibilities that encompass all employees, suppliers and other stakeholders. The document offers ways to report and

resolve ethical dilemmas, with transparency, reflecting the organization's mission. In 2017, Jaguar updated the Code of Conduct and Ethics to reinforce anti-retaliation and its position against any kind of discrimination, and enabled all employees to understand these issues.

#### Whistleblower Channel

The Whistleblower Channel is Jaguar's exclusive tool for users to report misconduct and other issues. The channel can be used by employees across all levels, outsourced personnel, communities, shareholders, and even suppliers. Cases of tampering or forging reports and documents, prohibited retrieval of equipment or other corporate property, or using corporate funds for personal gain are some examples of misconduct that

can and must be reported. All reports are recorded and investigated independently, assuring the whistleblower's anonymity. In 2017, Jaguar distributed a printed booklet with information about the Whistleblower Hotline to employees, in a further effort to publicize the channel. The whistleblower channel received 24 reports that year; investigations were conducted and all have been concluded.

#### Corporate Governance Guidelines

- Corporate Governance Guide
- Charter of the Compensation Committee
- · Charter of the Audit & Risk Committee
- · Charter of the Internal Audit
- Charter of the Health, Safety & Environment Committee

#### **Policies**

- · Code of Ethics and Conduct
- Insider Trading Policy
- · Anti-Corruption Policy
- Reporting Policy
- Donations & Sponsorships Policy
- Corporate Policy on Health, Environment, Communities, Employment and Ethics
- Whistleblower Channel

#### Corporate Policy on Health, Environment, Communities, Employment and Ethics

We are committed to conducting our business in an honest and ethical manner. Each of the Company's commitments is conceived and executed in accordance with our values, abiding by all technical requirements and applicable laws, standards and regulations.

We are committed to protecting the health and safety of our employees, the environment, and the communities where we work.

We are engaged to providing a workplace free of discrimination and harassment, where all employees can reach their full potential based on merit and skill. We strive to deal with everyone in a fair and open manner.

We handle all problems in a lawful and proper manner, mitigating impacts and supporting those affected.

Our mandate is to create value for stakeholders, while continually improving our performance as a socially responsible corporation.

We value our reputation and honour the confidence placed in our Company. We take these commitments seriously, and our Board of Directors and Management Committee will make every effort to foster a culture to support and honour them.

All the Jaguar's policies are signed by the Board of Directors and Oversight Comission, and represents the Company's commitment toward responsible management as well as guides all employees in their daily activities.

#### **MISSION**

Create and grow sustainable value for our stakeholders through the application of best practices in mining and our commitment to protect the health and wellbeing of our employees and the environment in the communities where we work.

#### **VISION**

To be a recognized gold mining Company focused on growing sustainable production, delivering on our commitments for excellence, and valuing and developing our employees.

#### **VALUES**



#### Zero Harm

"Zero Harm" to the environment, our employees, and the communities where we work.



#### Dignity and Respect

Equal treatment and opportunity for all employees with transparent processes founded on dignity and respect, and encouraging a sense of ownership.



#### Collaboration

Productive and ethical working relationships, based on transparent and responsive dialogue with surrounding communities and public agencies for the benefit of all stakeholders.



#### Sustainability

Sustainable growth supported by a safe, profitable and socially responsible business while developing long-term resources and assets.



#### Excellence





#### VALORES CAMPEÕES PROGRAM

To further promote the Company's values among employees, Jaguar held the initiative called Valores Campeões (Champion Values) in 2017. The employees themselves voted on colleagues they considered paragons of each value. "The initiative motivated the workers to always give their best to reach their goals," said Breno Rafael de Moura, the heavy machinery operator voted the paragon of Zero Harm. Systems Analyst, Sílvio José de Freitas Júnior, voted the paragon of Excellence, also approved the initiative: "This encourages employees to interact with the Company, bringing them closer to the business culture." Bartolomeu Morais, Maintenance Supervisor voted the paragon of Dignity and Respect, shared his appreciation for his colleagues and reaffirms the importance of this initiative: "It was a huge step to promote the Company's values in a dynamic and creative manner."

When commenting on being chosen the paragon of Collaboration, Administrative Assistant Ilda Franciele Leite Costa said that working at a Company means living alongside people with different opinions, goals, and views of the world. "Learning to accept these differences is crucial to successful teamwork," she said.

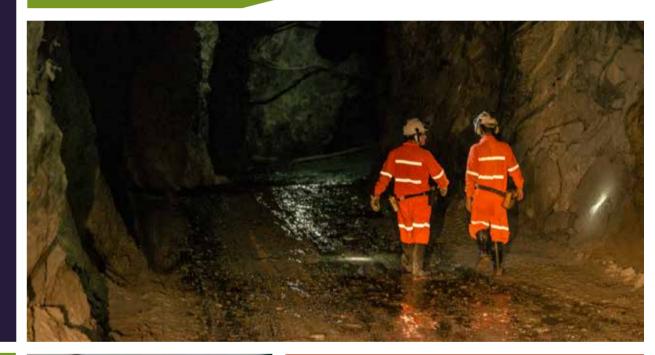
Environmental Analyst Estevão Neto was voted the paragon of Sustainability. "Champion Values was a great initiative from Jaguar, through which the Company was able to reinforce its main goals."

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# OUR OPERATIONS

**CHAPTER 2** 



Jaguar works hard to deliver positive results across all its operations, continually striving to ensure sustainable and ethical practices.

#### Material subjects

- Safety of tailing dams
- Impacts of ore transportation



"The partnership with Jaguar is crucial for us to buy materials and boost project productivity. The Company is very considerate and devoted to us. Being able to maintain the project in 2017 guaranteed steady income for 13 women."

Silvanea Evangelista Cristmos Ferreira

President of the Brumal Association of Weavers

#### **OUR OPERATIONS**

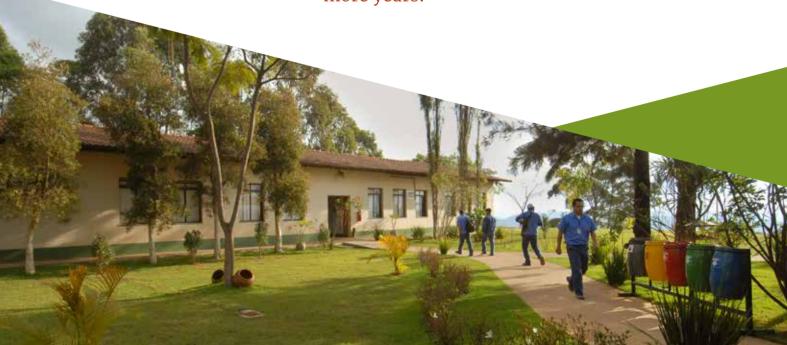
Jaguar's Operating Units are located in the state of Minas Gerais. The CCA Complex is located in the Iron Quadrangle region – which holds some of the largest ore reserves in Brazil – operating in Brumal, district of Santa Bárbara, and Caeté. The Complex's area of influence also covers the municipality of Barão de Cocais. Jaguar also operates in Conceição do Pará, in the

midwestern region of the state, with the MTL Complex, whose area of influence covers the municipality of Pitangui. This chapter provides information on these units and other Company projects. This is where Jaguar operates in a sustainable manner to create value to its stakeholders and generate jobs and income for the state of Minas Gerais and the rest of Brazil.

#### **CCA Complex**

Venture comprised of a processing plant and two mines: Pilar, in Brumal, district of Santa Bárbara; and Roça Grande, in the municipality of Caeté. The CCA Complex also has four decommissioned mines: Camará, Catita, Sabará and Serra Paraíso.

An exploration survey at Pilar Mine shows a substantial surge in mining resources and the operations are expected to continue for at least 20 more years.





#### Roça Grande Mine

Located in Caeté, the Roça Grande Mine has a processing plant that processes all of the ore mined from this mine and the Pilar Mine. The Mine produced 4,668 ounces in 2017. In 2017, the mine boasted 251 dedicated employees, 78% of which live in Caeté. Before closing this report, Jaguar suspended the activities at Roça Grande Mine to focus on new prospecting programs.



#### Pilar Mine

The Pilar Mine produced 34,017 ounces in 2017. All of the material extracted is sent to the Caeté plant for processing. At the end of 2017, the mine had 311 dedicated employees, approximately 89% of which live in the region of Santa Bárbara and Barão de Cocais. Operational excellence was another milestone for the mine in 2017, increasing long-hole stope equipment

performance from 199 to 280 metres per day. The site's electrical and electronic maintenance workshop facilities were also renovated. A prospecting campaign launched in 2017 at the site revealed a substantial increase in ore resources at Pilar, which translates into 20 additional years of operation.

#### MTL Complex

Jaguar's MTL operating unit in the municipality of Conceição do Pará, in the midwestern region of the state, comprises

a processing plant and the Turmalina mine. The venture's area of influence covers the municipality of Pitangui.

#### Turmalina Mine

The Turmalina Mine produced 45,467 ounces in 2017. The ore extracted from the mine is processed in the Complex's plant. The Complex counts a total of 483 employees on site, making it the largest employer in the city of Conceição do Pará, where the Company pays taxes. However, most of its employees (75%) live in the neighboring town of Pitangui.

Throughout the year, the Mine has undergone major upgrades that ultimately boosted productivity, mitigated losses, improved management procedures, cut costs, and resulted in positive operational and environmental indicators.

In addition to the improvements, the year was marked by a huge milestone: the team's hard work made it possible to reverse a geomechanical instability at level 9 – one of the most important production sites of the underground mine – which hindered access to ore extraction points. Rigorous safety measures were implemented at the site to ensure operations were not interrupted and to mitigate impacts in production output.



#### Improvements at Turmalina Mine

- Change in the slot raises opening method, reducing turnaround time and eliminating the need for heavy machinery, which was reassigned to other production activities.
- Systematic long-hole stoping verification, mitigating deviations and equipment losses.
- Improvement in rock filling procedures, which reduced the time to resume mining for remaining ore, increased structural stability, and mitigated costs due to the shorter tailings transportation distance.
- New tool to manage operating parameters converged all operating deviations, parameters and results into a single system. This reduced the data recording and accessing time, in addition to mitigating errors due to excessive data handling.
- Increased reuse of water from the operational process, helping extend the service life of the tailings dam.
- Optimization of expenses, improving overall cash flow management throughout the operation.



"The work of all professionals at Turmalina Mine's Level 9 showcases our team's flexibility and resilience, which managed to mitigate the instability despite major impacts on production plans. In 2018, not only will we have to use the lessons learned in 2017 in the new production fronts, but also plan and implement actions to recover the remaining ore reserve in Level 9."

Luis Abadi
General Manager of Operations

#### Other Assets

#### **CPA Complex**

The CPA Complex is located in the district of Acuruí, municipality of Itabirito – 90 km away from Belo Horizonte. The Complex encompasses five mines: Marzagão, Ouro Fino, Palmital, Rio de Peixe and Santa Isabel. Suspended since May 2012, the Complex is undergoing a feasibility reassessment as part of a care and maintenance program.

#### Gurupi Project (Centro Gold)

In 2017, Jaguar sold its stake on the Gurupi project, no longer managing the venture located in the city of Centro Novo do Maranhão (MA). However, as per the terms of the negotiation, Jaguar will still receive a share of royalties from the project.

#### Pedra Branca Project

Located in the state of Ceará, the Pedra Branca Project and its mining rights encompass 20 exploration licenses. The project is fully owned by Jaguar and its activities are currently decommissioned, since the Company is focusing on its Minas Gerais operations, for strategic reasons. The Company regularly pays all required fees to maintain the licenses and rights for this venture, as per applicable laws.



#### **Tailings Dams**

Jaguar currently has five tailings dams: three in the city of Caeté, one in Conceição do Pará, and one in Itabirito. Despite all supervisory agencies ranking these dams' technical, preservation and safety characteristics as low-risk, Jaguar actively works to ensure the maximum security of these structures.

All five dams undergo daily, weekly and fortnightly inspections at each shift, in accordance with DNPM Decree No. 70.389/2017. In addition, as of 2018, all dams half-yearly by an external Company, which will check the stability of each dam (this procedure was held once a year until 2017). A specialized consulting was also contracted to review all procedures, documents and projects, in order to guarantee even greater reliability in each dam.

Each dam is equipped with a device that pumps water from the supernatant pond to be reused in mine operation processes. This mitigates the risk of overflow and keeps the edge free (height between the water and the top of the embankment crest), as per the dam design. The dams are also equipped with a piezometer system (equipment that measures the height of the water under the embankment), measuring head (to check the free edge), and surface markings (to check embankment movement). When used together, these devices and initiatives guarantee the structure's security, keeping them within the low-risk assessment criteria of supervisory agencies.

However, Jaguar is also prepared to respond in events of risk, as detailed in the Company's Tailings Dam Emergency Response Plan (PAEBM). Among some of the improvements scheduled for 2018 is the performance of simulations and the installation of a warning system to alert communities of potential risks.

#### Overall tailings dam data

	Turmalina Dam	Moita Dam	RG2E Pit	RG2W Pit	Paciência Dam
Location	Conceição do Pará	Caeté	Caeté	Caeté	Itabirito
Type of dam	HDPE-lined - Sealed	HDPE-lined - Sealed	Not HDPE-lined	Not HDPE-lined	HDPE-lined - Sealed
DNPM Class	В	В	С	С	В
Total dam area	124,347 m²	36,862 m²	19,665 m²	23,823 m²	122,829 m²
Current capacity volume	622,000 m <sup>3</sup>	268,000 m³	265,600 m <sup>3</sup>	649,800 m³	1,400,000 m <sup>3</sup>
Embankment height	18 m	19 m	Reuse of Exhausted Pit	12 m	35 m
Crest length	165 m	388 m	-	180 m	167 m



#### Suppliers

Jaguar currently works with 530 outsourced professionals – 85% of whom are male. Out of this total, 70% hold operational positions and 30% hold various administrative positions. The main areas served by outsourced workers are surveillance, cleaning, food, rock drilling, maitenence and ore transportation. Total investment in supplier contracting in 2017 was BRL 245,730,753 – 69% of this total in Minas Gerais alone. In order to promote the social and economic

development of communities where Jaguar works, Jaguar prioritizes the hiring of local professionals and services.

The Company invests in training these professionals and improving these services. Jaguar also requires vendors to follow the same ethical standards, always promoting integrity and assurance of human rights, including those of children and adolescents, when fulfilling legal obligations.

#### Ore Transportation

In 2017, Jaguar carried out a training process along with the Company's drivers, particularly workers responsible for driving trucks in operational areas. All workers were trained to remain courteous even while in traffic, always yielding to other road users. Jaguar also invested in renovating the Rancho Novo community's highway.

The Company made structural works, such as drainage, pavement, curbs, and fences to protect the properties around the highway. The highway is also watered every day to control road dust. In addition, in the CCA Complex, in Santa Bárbara, a wheel washing device for trucks was installed.





# PEOPLE

**CHAPTER 3** 



# People

are the main reason for Jaguar's existence, which is why we treat everyone responsibly and ethically.



#### Material Subjects

- Job and income generation (positions, hiring policy, local workforce)
- Occupational health & safety
- Staff training
- Compensation and benefits

2017

This year, the Company reached the best Safety rates since it began operating in 2006.

#### **PEOPLE**

At Jaguar, we see people as both the main reason and the driving force of our business. The Company believes that, in order to reach all production targets in an ethical and sustainable manner, it must always have a trained, motivated and refreshed team. This principle also generated positive results for our people management indicators in 2017, reducing turnover and absenteeism rates across the board. Another highlight is our commitment towards including women in our operation.

#### **Employees per City**

City	Employees
Belo Horizonte	55
Santa Bárbara	164
Caeté	215
Conceição do Pará	46
Pitangui	364
Barão de Cocais	143
Other cities	147

#### Job and Income Generation

In 2017, Jaguar hired 99 workers -32% less than the total new hires in the previous year. These new professionals were

assigned mainly to the Mine Operation and Maintenance areas.

#### Absenteeism

Jaguar's average absenteeism rate dropped by 0.59% in 2017.

Site	2016	2017
MTL	2.12%	1.46%
ВН	0.55%	0.42%
Pilar	1.53%	0.85%
RG	1.88%	1.41%
СРА	1.17%	0.63%

#### Turnover

Jaguar's average turnover dropped by 1.25% in 2017.

Site	2016	2017
MTL	10.80%	7.50%
Pilar	12.50%	7.61%
RG	9.20%	13.05%
ВН	12.6%	21.23%

#### Employee Profile

Number of employees		Gender (dedicated employees)		Employees with disabilities (PCD)
Dedicated	Outsourced	Men	Women	2/
1,134	530	1,004	130	34





#### Benefits

The main purpose of benefit management is to promote quality of life among employees, working as a tool to attract and retain talent.

#### Medical and Dental Care

Jaguar provides medical and dental plans to all employees and family members.

#### Life Insurance

Jaguar grants group life insurance to its employees, covering 99% of the costs.

#### School Aid

In order to ensure continuous education for children of employees, Jaguar offers an annual allowance for the purchase of school supplies, as per the criteria set out in the Human Resources Policy.

#### Food

Jaguar provides quality food to all employees. All Operating Units are equipped with cafeterias serving several meals every day, featuring a balanced menu developed by nutritionists. The menu also includes a lighter dish option, providing an even healthier alternative to employees.

In addition, snack packs are distributed to employees each shift.

The Company also provides food vouchers to workers in the first pay grade, while workers assigned to locations outside the Complexes receive meal vouchers.

#### **Profit Sharing Program**

The Company did not reach the required targets to pay profit sharing benefits in 2017. In 2018, the program will further

encourage and promote alignment between the focus of employees and the Company's strategic goals.





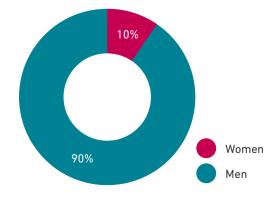
#### Valuing Women

Jaguar is aware of how important it is to focus on valuing and engaging women in the mining sector. Every day, the Company

strives to discuss gender and the role of women in the sector.

Department	% Women	% Men
Management and Administrative	34%	66%
Geology	4%	96%
Mine Maintenance	1%	99%
Metalurgical Plant Maintenance	0%	100%
Mine	4%	96%
Planning	7%	93%
Metalurgical Plant	6%	94%

#### **Leadership Positions**



#### Training and Development

Last year. Jaquar continued to train its staff based on the Company's Training and Development guideline. Jaguar maintained its principal training programs: Internship Program; Learning Program; and Leader Development Program. In addition, Jaguar promotes career development through actions such as internal recruitment, associated to specific and technical training courses for employees in new positions, such as the training program for operators of new equipment. Other development actions are identified through an annual mapping process across each area. In addition to mandatory technical and safety training courses for employees,

the Company also held institutional training courses, such as a refresher course on the Code of Ethics for 100% of the staff, and invested in developing the management skills of its leaders, who took courses and seminars on people management, negotiations, relationships and feedback, among others. In 2018, the Company still employs learning methodologies based on the principles of Andragogy, particularly focusing on adult education, and the 70/20/10 concept, targeting development and learning in organizations.

Through these methods, the Company expects to structure the personnel development strategy as follows:

# Number of training courses per site

Site	Number of courses
MTL	128
Pilar	49
Roça Grande	24
Belo Horizonte	8

- 70% of learning must come from real life experiences and interactions in the workplace, which includes performing tasks and solving problems.
- 20% of learning stems from formal interactions and a focus on learning.
- 10% of knowledge is attained through training, courses, seminars, workshops, and formal reading.



## HEALTH AND SAFETY

People are Jaguar's most valuable assets. The Company always prioritizes the quality of life and wellbeing of its employees, families, service providers, and the communities where it operates. The organization's values reflect this belief. Health and safety procedures focus on promoting health and quality of life in the workplace. The Company lowered the accident rate in recent years and is

constantly improving records and practices in this sense. Jaguar has an integrated management system that promotes open communication across all levels. The health and safety team was expanded to improve operating standards. The new employee training program is extensive and features seasoned professionals who act as mentors, providing hands-on guidance and conducting periodic reviews.

## Loss Prevention Program

Jaguar spares no effort to make its working environments safer, free of occupational accidents or illnesses. The Company thus organizes initiatives and programs targeting safe behavior, and adopts risk-control measures to ensure the physical integrity and health of its employees. The Loss Prevention Program (PPP) is aligned to the Company's internal guidelines and work

safety standards, ensuring that no corporate activity can jeopardize the health and safety of workers. Based on the Program's loss prevention tools, the Company is committed to mitigating accidents and any other event that can harm people, striving to eliminate all risks. In 2017, Jaguar strengthened its existing employee health and safety management tools.

## Safety Audit

To assess the level of compliance to the Loss Prevention Program, quarterly audits are conducted to check all applicable documents and the efficiency of operational processes. The Basic Management Unit (UGB) defines the assessment scope for all PPP tools based on the Annual Planning developed by those in charge of each Unit and approved by management, in

order to gauge performance in health and safety, and identify potential points of improvement. In November 2017, Jaguar conducted an Internal Safety Audit process led by Safety Engineers across all of the Company's units. The audit's results are being used to reinforce team actions and outline a proper plan based on the Company's reality.

## Planned Task Observation (PTO)

One of the PPP development tools implemented to reinforce safe behavior practices is the Planned Task Observation (PTO). This is a method that helps promote safe behavior by observing tasks and identifying deviations of any kind. A technical Occupational Safety expert assists each area's manager and supervisor to observe tasks.

If any deviation, operational shortcut, or other situations that place employees at

risk are identified, the respective activity is immediately interrupted and all personnel involved in this task are instructed to make necessary adjustments in order to resume work activities. Behavioral deviations are recorded and addressed immediately, reinforcing the importance of safety practices through an educational dialogue. Similarly, best practices and safe behaviours are also reinforced and promoted continuously.

# Awareness Training and Campaigns

Jaguar believes that raising awareness is crucial to ensure excellence across safety standards, which is why the Company periodically hosts training courses and campaigns at the units to promote the concepts of occupational health and safety. In order to better train and prepare emergency response teams, training courses are held for all new brigade

members and ambulance drivers, in addition to periodical practical simulations to ensure the entire team performs efficiently in case of an emergency.

We also reviewed practical training courses on mask use, medical air use in shelters, refresher courses on work at heights, electrical services and work in confined spaces.

## Sponsorship

After undergoing an introductory training to learn about the environment's risks and other specific training courses, new hires are monitored by a more experienced professional for 45 days. This monitoring process is known as Sponsorship, where the sponsor observes various aspects, such as the fulfillment of tasks and obligations, professional expectations, motivation and satisfaction, cooperation, focus, practicality, persistence, creativity, and dedication. After this period, sponsors submit a completion of their opinion to the HR department.

## **CIPAMIN Actions**

The members of the CIPAMIN - Internal Commission of Accident Prevention in Mining - actively participate in safety activities, proposing improvements in the workplace and conducting actions that help preserve the life and health of employees. Some of the highlights of CIPAMIN's initiatives in 2017 are the PPE (Personal Protective Equipment) Blitz events, held on service fronts to inspect equipment use conditions and adequacy based on risk

exposure. Employees were instructed about the importance of wearing proper PPEs to prevent potential damages to health and to eliminate the possibility of accidents.

The Internal Mining Accident Prevention Week (SIPATMIN) was held alongside members of CIPAMIN across all Units, raising awareness on loss prevention and actively engaging all employees and leaders.

## Safety Culture Diagnosis

We implemented the Safety Culture Diagnosis project in 2017, in partnership with a specialized Company, in order to improve Safety initiatives and tools. Safety indicators were reviewed and Workshops were conducted during this process. In 2018, we have already conducted safety.

In 2018, we have already conducted safety culture perception surveys across the entire Company. The goal is to understand

how employees learn about key aspects of the Company's daily routine, in addition to establishing initiatives to improve the workplace and preserve life.

The data obtained from this survey will be broken down to enable more accurate strategic planning that will define the attitudes required to reach a mature and rooted safety culture.

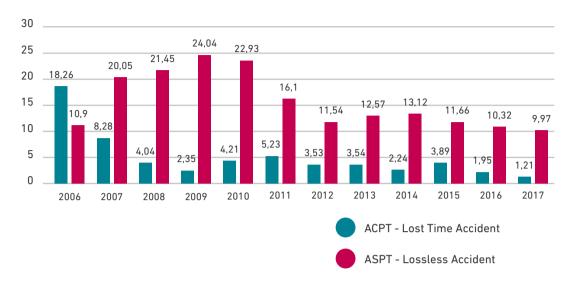
## Work Accident Data

In 2017, the Company reached the best Safety rates since it began operating in 2006. The final Frequency Rate of injuries with work leave was 1.21 and the Severity Rate was 112. Between 2006 and 2016, the average frequency rate was 5.23 – with the highest rate registered in 2006 (18.26) and the lowest rate in 2016 (1.95). In the first

and third quarters of 2017, the frequency rate was zero, but the Company recorded three Injuries with Work Leave (LCPT) in the fourth quarter. These LCPTs increased the frequency and severity rates, but the Company maintained a downward trend in these rates.

In 2017, the Company reached the best safety rates since it began operating in 2006.

## Safety Performance



Classification		omplex Mine	Roça (	omplex Grande ne	MTL Co	omplex	CPA Co	omplex	BH Cor	porate
	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
Injuries with leave	0	0	1	2	2	2	0	0	0	0
Injuries without leave	3	3	6	2	20	25	0	0	0	0
Frequency rate of injuries with leave <sup>1</sup>	0.00	0.00	1.55	3.4	1.88	1.92	0.00	0.00	0.00	0.00
Frequency rate of injuries without leave <sup>2</sup>	4.61	4.59	9.29	3.4	18.84	24.02	0.00	0.00	0.00	0.00

<sup>&</sup>lt;sup>1</sup>Frequency rate of injuries with leave multiplied by 1 million hours, divided by the total hours worked in the period. Including injuries that led to employee work leave (not including First Aid and Medical Treatment Cases).

All accidents and possible injuries are analyzed and the underlying causes are identified to implement corrective actions. Proposed actions include reinforcing safe behaviour within the Loss Prevention Program, always with the goal of promoting a safety culture at Jaguar. In line with improvements in health

and safety programs, Jaguar offers life insurance to its employees and family members. For each incident, probable causes are identified and remediation plans are developed to avoid recurrence, while promoting lessons learned across each unit and enhancing our controls to achieve "Zero Harm."

<sup>&</sup>lt;sup>2</sup>Frequency rate of accidents without leave multiplied by 1 million hours, divided by the total hours worked in the period. Including accidents with injuries that did not result in work leave.

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# 2017

- Implementing atmospheric emission and air quality monitoring systems.
- 111 Water quality fixed points
- · 13
  Noise checkpoints





**CHAPTER 4** 







## Material Themes

- Management of water resources
- Environmental licensing and legal milestones





"Environmental awareness has grown among Jaguar's employees, who now have a better understanding of the subject and even more opportunities to share ideas with the environment team. The Company's environmental management has been steadily evolving, and it is very important that it keeps evolving"

Rayssa Sousa

## **ENVIRONMENT**

Jaguar's mission is to create and grow sustainable value for its stakeholders. That precept is what guides all of the Company's environmental impact management activities and operational control systems. Jaguar is also committed to mitigating potential impacts in the communities where it operates.

## **Environmental Management**

The growing demands of environmental agencies and increasing legal requirements drive Jaguar towards a comprehensive and efficiency management of its environmental obligations. The Company currently has an Environmental Management system in place to meet all of these requirements, focusing on continuously improving processes with potential environmental impacts.

In order to continuously maintain this system, procedures, reports, and inspection sheets, among others, are issued to regulate and record all activities within the system. In 2017, Jaguar generated 689 official documents related to environmental management.

Environmental control systems are part of Jaguar's environmental obligations.

These systems comprise a set of monitoring frequencies, structures, and procedures that provide environmental agencies, Jaguar employees, and the communities surrounding the Company's units a broad repository of data and information that attest the efficiency of controls used by the Company.

## **Environmental Licensing**

The diversity of environmental licenses added to the dynamics of mining activities ultimately generates a considerable number of processes, which cover a wide array of information, topics and requirements. In line with these conditions, Jaguar has a dedicated team that guides and oversees each process and addresses eventual inquiries upon request.

This Jaguar team is responsible for maintaining a close and transparent relationship with environmental agencies, providing any

piece of information required to ensure absolute transparency and details of all processes. Jaguar believes that any technical discussion is positive and clarifying, which is why it maintains open dialogue with all official agency analysts. The Company believes that these dynamics generate well-founded processes, in addition to promoting technical alternatives and new legal interpretations. This allows us to contribute to the development of the environmental licensing system and all stakeholders involved.

Jaguar Mining's activities are authorized by 32 valid environmental licenses.

Valid Licenses	Qty.
Permits	3
Previous Licenses concurrently held with installation licenses (LP+LI)	1
Temporary Operating Permits (TOP)	3
Operating Licenses	11
Environmental Operating Permit	1
Grants/Irrelevant use	13
Total	32

## Water Quality Monitoring

Jaguar monitored water quality across 111 fixed points across all of its units where water quality monitoring is required. The establishment and maintenance of this network are basically built around the potential impact that each Jaguar structure has over the quality of water.

A total of 939 water quality reports were generated in 2017: 373 for surface waters; 352 for wastewater; 102 for underground water; 96 regarding drinkability; and 16 regarding hydrobiological monitoring, which analyzes phytoplankton, zooplankton,

and zoobenthos. All collection and analysis procedures are conducted by third-party accredited laboratories. The definition of elements and thresholds abide by federal and state standards.

The frequency of analyses is determined by the environmental agency. Collections are carried out monthly at most points and decommissioned areas are also covered by the water quality monitoring network, with 33 collection points monitored on a monthly basis.

Jaguar monitored water quality across 111 fixed points across all of its units where water quality monitoring is required.

Monitoring points by complex	2017	2016
MTL Complex	32	21
CPA Complex	30	26
CCA Complex	49	40
Total	111	87

Jaguar maintains an underground water monitoring network comprising piezometers, flowmeters and a weather station.

The network's systematic monitoring generates a substantial database that helps monitor surface water flow and plan the Company's operations, among other aspects. The weather stations collect data on precipitation, air temperature, wind speed and radiation; the piezometers provide readings regarding underground water levels and depth. Surface water

flows are measured in a Parshall flume. The hydrogeological monitoring data is then sorted and consolidated in periodic reports formally submitted to environmental agencies. A total of 588 water level readings and 488 water flow readings were conducted in 2017. In addition to the previously mentioned water resource monitoring processes, Jaguar is involved in state catchment committees in the regions where it operates mines: Rio Pará Committee, Caeté Sabará Committee and Nascentes Committee.

In 2017, a total of 588 water level readings and 488 water flow readings were conducted.

Monitoring by type	2017	2016
Hydrobiological	16	12
Underground	102	62
Drinkability	96	100
Wastewater	352	338
Surface water	373	347
Total	939	859

Monitoring points - Readings by complex	2017	2016
Water level	588	571
Water flow	488	369
Total	1,076	940

## Solid Waste Management

Jaguar's management plan establishes operational guidelines regarding temporary storage and final disposal of solid waste generated in the production process. In line with global guidelines and trends, the Company focuses on mitigating waste generation, process traceability, and material conservation, prioritizing the reuse of waste in processes such as recycling and composting.

A total of 1,193.9 tonnes of waste were sorted, collected and disposed in 2017. In accordance with ABNT Standard No. 10004/2004, 63.6% of the waste generated are classified as class II (non-hazardous non-inert– A, or inert - B), and 36.4% are classified as class I (hazardous).

Waste - Generation by Class (in tonnes)	2017	2016
Class I	392.2	822.9
Class II - A	367.0	464.1
Class II - B	434.8	1,045.4
Total	1,193.9	2,332.4

Waste - By final disposal (in tonnes)	2017	2016
Incineration/Co-processing	9.8	46.9
Biological Treatment	50.1	37.2
Composting	53.6	79.8
Reverse Logistics/Re-refining	67.1	57.0
Recycling/Reuse	418.3	999.0
Landfill	595.1	1,112.4
Total	1,193.9	2,332.4

All production processes are revised regularly based on the guidelines of the 4R Program (Reduce, Recycle, Reuse and Rethink)

The Company handles hazardous waste with special care, sorting this waste at the source, avoiding mixture with other materials, and preventing contamination of reusable waste.

All production processes are revised regularly based on the guidelines of the

4R Program (Reduce, Recycle, Reuse, and Rethink) and the approval of final recipients, strictly in compliance with legal requirements.

Partnerships with hazardous waste processing and recycling companies is encouraged.

## Seismic Monitoring

The purpose of seismic monitoring is to identify vibrations caused by rock blasting with explosives. The results of this monitoring process provide a secure assessment of potential reflexes in the surface.

Three seismographs are installed in strategic points of Jaguar Mining's active mines: Pilar, Roça Grande and Turmalina. Every week, the data generated by the equipment is collected and sorted.

## Wildlife Monitoring

The Land Wildlife Monitoring is carried out during annual dry and rainy seasons, based on environmental conditions. The purpose is to assess potential impacts of the Company's operations on the local wildlife. Items such as diversity, frequency and resilience of species and other wildlife groups are constantly evaluated

by qualified professionals using specific methods. Significant variations in any of these items indicate wildlife disturbances and are further investigated.

The Company held two campaigns in 2017, covering 30 sampling points for mammalian, reptile and amphibian, and bird wildlife.

Monitoring by tipology		2017
Birds		5
Mammalians		16
Reptiles and Amphibians		9
	Total	30

The Land Wildlife Monitoring is carried out during annual dry and rainy seasons.

## Acid Mine Drainage Monitoring

Prevention and control of AMD are a part of Jaguar's continuous environmental management efforts. In currently active units, the Company conducts surveys to establish the AMD generation potential. Under the supervision of expert advisors, underground and surface samples are taken from specific areas of the mines to assess each material's behavior regarding AMD. Samples are sent to a third-party laboratory and undergo static and kinetic testing.

#### Acid Mine Drainage (AMD)

In simple terms, Acid Mine Drainage (AMD) is considered the acidification of waters in a mine. It is generated when rocks with high concentrations of sulphur are oxidized by exposure to water and/or air. In nature, gold is commonly associated with sulphiderich rocks, which are exposed during the mining process. Acid waters facilitate the solubilization of some elements, such as iron, manganese and arsenic, releasing them into the water. AMD is more commonly found in decommissioned mines, since these reactions take some time to occur.



## Air Quality and Atmospheric Emission Monitoring

The purpose of atmospheric emission monitoring is to assess the quality of emissions from fixed sources, as well as the quality of the air in communities where the Company operates. Last year, 12 checkpoints were evaluated and

elaborated new sampling plans to the operational sites.

Jaguar also monitors the emission of the equipment and diesel powered vehicles, to ensure it operates inside the legal limits permit.

#### **Noise Monitoring**

The noise monitoring process began in 2017, the purpose of wich is to check noise levels around the ventures. More than a

legal requirement, the activity is part of the commitment of Jaguar with control and prevention of operations impacts.

Monitring by tipology	2017
Atmospheric Emissions	10
Air Quality	2
Total	12

Monitoring procedures	2017
Environmental Noise	13
Total	13

## Report to Environmental Agencies

Annually, the Company fills in a series of state and federal databases to inform the environmental agencies about the controls developed over the past year. This report includes data on water quality and treated effluents, flow by concession, stability of

the tailing dams, inputs and final disposal of the waste. Jaguar believes that meeting these requirements aligns its management with the premises established by the environmental agencies.

## **Environmental Education**

The Company organized two environmental campaigns for employees and the external public in 2017. The first was held during Environment Week and encouraged workers to record videos with their phones explaining what they are doing to protect the environment at home and at the Company. A contest was held asking students within the community to write an essay on environmental preservation. The other campaign was held on Arbor Day. Employees learned and applied landscaping techniques to renovate

internal environments in each operating unit. In the communities, the Company held a workshop on composting processes. Another major initiative last year was the Participative Socio-Environmental Diagnosis. The purpose was to identify the concerns and needs of communities in which the Company operates regarding environmental education. Based on this diagnosis – which will be concluded in 2018 – Jaguar will develop an Environmental Education Plan for each location.

#### **Environmental Investments**

Category	2017	2016
Water Monitoring	716,355.31 BRL	618,678.00 BRL
Environmental Offsetting	1,402,804.15 BRL	1,492,763.00 BRL
Acid Mine Drainage	155,031.33 BRL	1,387,156.00 BRL
Maintenance of Decommissioned Areas	1,153,529.23 BRL	1,492,763.00 BRL
Atmospheric Emission Monitoring	146,245.86 BRL	0.00 BRL
Waste Management	1,664,684.93 BRL	1,698,689.94 BRL
Total	5.238.650.8	6.690.049.9





Understanding the concerns of our stakeholders is crucial to develop relevant actions and ensure sustainable performance

# DIALOGUE AND RELATIONSHIP

**CHAPTER 5** 

## Material Themes

- Local development and relationships
- Donations, partnerships, and sponsorships
- Indirect economic impacts

# 2017

- Seeds of Sustainability
   Program covering 12
   major social initiatives
   for the locations where
   the Company works.
- Report follow-up remained an important dialogue channel between the Company and communities.
- Social actions reinforced the Company's commitment toward sustainability.







"The partnership with Jaguar is essential to develop our infrastructure and ensure this project is maintained. The choir is the only cultural group in Brumal, featuring people from several different cities, including 25 people, while the advanced instrument course counts 10 people and the music course 8"

Alexandre Luís Lacerda Campos Conductor of the Brumal Encanta project.

## DIALOGUE AND RELATIONSHIP

Jaguar continued to work closely with the communities, building upon its 2016 Sustainability Guideline as the main cornerstone.

Through this Guideline, the Company strives to devise new local development processes by integrating cultural, social, environmental and financial aspects, in addition to valuing tangible and intangible resources in the areas where we operate. Creativity, collaboration and sharing are some of the values that guide Jaguar's relationships and interactions. This is defining how we propose initiatives and engage in the work of entrepreneurs working to improve people's lives in the communities.

Based on this goal, the Company intensified its involvement in local projects, focusing on the needs and interests of community organizations. The Company also refined its dialogue with public authorities

and civil society, ultimately benefiting everyone involved.

All of this effort is evidenced by the results of initiatives proposed by the Company. A good example is the Seeds of Sustainability Program, which is undoubtedly Jaguar's most important social initiative, which was restructured to ensure a more efficient and organized management, helping develop local projects. By increasing the focus on the community's needs, the Company was also able to streamline its initiatives. Enhanced communication channels and daily interactions ultimately led to a more mature and efficient dialogue with our stakeholders.

Amidst this uncertain external scenario, Jaguar turned to organization, focus and creativity to maintain and expand its social projects, ultimately contributing towards achieving the UN's Sustainable Development Goals.





































## Profile of Communities in Minas Gerais

## CCA complex

## CPA complex

	Pilar	Roça Grande Mine	
	Santa Bárbara	Barão de Cocais	Caeté
Area	685.11 km²	342.45 km²	540 km²
Population	27,876	28,442	40,750
MHDI	0.707 (high)	0.722 (high)	0.728 (high)
Per capita income	BRL 535.84	BRL 546.85	BRL 586.16

Paciência Mine		
Itabirito		
544.99 km²		
45,449		
0.730 (high)		
BRL 784.55		

## MTL complex

	Turmalina Mine		
	Conceição do Pará Pitangui		
Area	250.38 km²	570.01 km²	
Population	5,158	25,311	
MHDI	0.700 (high)	0.725 (high)	
Per capita income	BRL 576.00	BRL 535.84	

Demographic data of municipalities based on the 2010 IBGE Census. Source: Atlas of Human Development in Brazil, 2013. Available at: http:// atlasbrasil.org.br/2013/



## RELATIONSHIP MANAGEMENT

In 2017, we continued to follow-up on the reporting channel for communities where we work, streamlining the entire process and establishing an important source of

information to propose actions that actually benefit communities. We received a total of 194 reports, 146 of which have already been addressed and the rest are still in progress.

#### How it works:

Reports received in person, via phone or email are logged into a record system and forwarded to the areas involved for analysis and processing. The Institutional Relations team follows-up on reports from the moment they are submitted and until they are closed.

#### STEP 1

#### **REGISTRATION**

Reports received are registered in the system.

#### STEP 2

#### **FORWARDING**

Upon due analysis, reports are forwarded to the areas involved for resolution

#### STEP 3

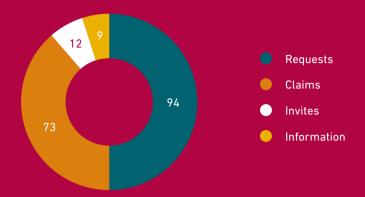
#### CLOSING

Activities are monitored until they are resolved and an answer is sent to the person who submitted the report.

#### **COMMUNICATION CHANNELS**

SHAREHOLDERS	EMPLOYEES	COMMUNITY	PUBLIC AUTHORITIES	PRESS
Events Newsletters Technical Visits Whistleblower Channel Website News Releases Financial Reports Analyst Coverage Presentations, Webcasts, Media Calendar of Events AGM Meeting Materials	Phone Email  Jaguar em Foco - Newspaper Fale Fácil  Whistleblower Channel  Website	Relationship Team Phone Email Newsletters Events Campaigns Open Meetings Whistleblower Channel Jaguar em Foco - Newspaper Website	Relationship Team Phone Email Whistleblower Channel Website	Phone Email Newsletters Whistleblower Channel Press Releases Website

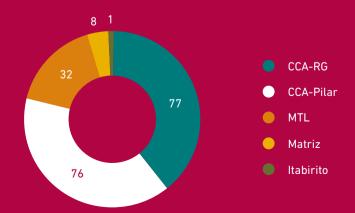
## Report Type



## Reports by Subject



## Reports vs. Site



## PROJECTS AND ACTIONS



Amidst the current economic and political instability, initiatives with long-term results are becoming increasingly important. With that in mind, Jaguar created the Seeds of Sustainability program, which went live in July 2017 after a pilot project launched in 2016. The program currently covers 12 organizations/projects across five municipalities where Jaguar operates, with a total investment of BRL 131,000.00 last year for these projects, that directly benefit approximately 1,500 people. More than merely providing financial support, the Seeds of Sustainability Program promotes the work of local projects and organizations to develop the cultural, socio-environmental and financial aspects of its communities:

#### Environmental

A region's natural heritage can be one of its biggest attractions, both for residents and visitors, who tend to value and care for their legacy.

#### Social

Promotes a broad range of social interactions among different sectors, either from people interested in developing culture, tourism or the environment, articulating different types of resources.

#### Cultural

Identifying, registering and promoting cultural potentials in the region. By promoting its heritage, the region can potentially access public funds assigned to cultural and heritage purposes.

#### **Financial**

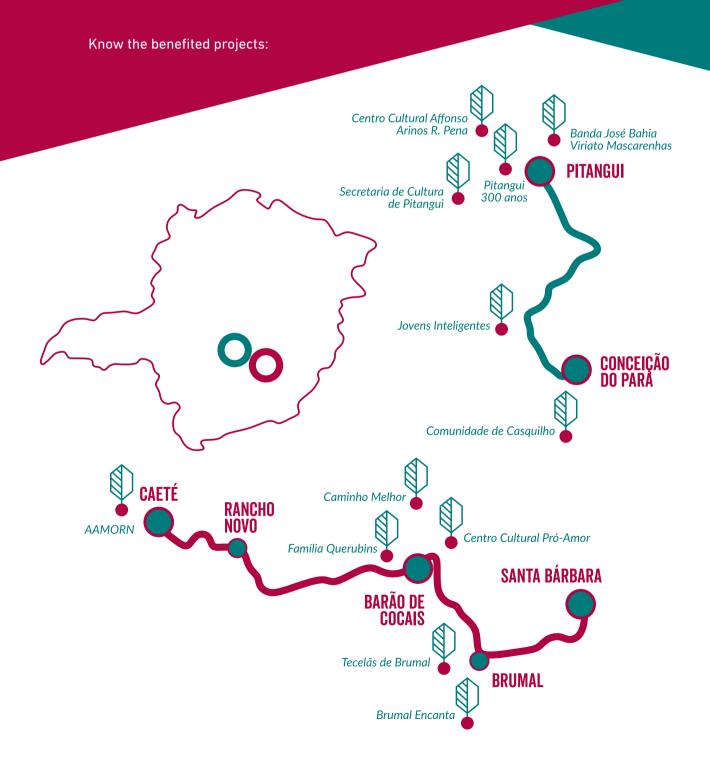
Ability to generate income for participants and the community, both through product and service sales in the region.



#### The Program

- Consulting services provided to participating organizations to develop projects and services.
- Provides training and mediates interactions with local entrepreneurs in incentive and funding mechanisms.
- Helps map, mobilize and reinforce a network of partners for participating initiatives.
- Promotes organizations by establishing communication channels and organizing Partner & Support Networks.

The website www. sementesdasus-tentabilidade.com.br, developed in 2017, provides more details on the program and institutions being funded, as well as new opportunities and potential partnerships.



## Main figures of the Seeds of Sustainability Program

12
entities
participants

2 community diagnosis

562 hours of consulting

6 projects

registered under the State Cultural Incentive Fund

BRL **42.000**,00

of funds secured (guaranteed): 2 projects

5 municipalities (coverage)

6 projects

approved under the State Cultural Incentive Act

18 projects developed

## Commitment in Practice

The Seeds of Sustainability Program allowed participating organizations to make major strides towards restructuring and managing its activities. Through the program's technical support and consulting services, the organizations were able to organize its strategic projects for 2018, diversifying their application processes

to receive funding from several entities in the public and private sectors.

Another important aspect of the project is the Seeds of Sustainability Network, which allows organizations to learn more and constantly access opportunities in their own regions and across Brazil.

## Pró-Amor Cultural Center

The Pró-Amor Cultural Center, in Barão de Cocais, successfully managed to receive funding with the support and guidance of Seeds of Sustainability in 2017. The institution received 42,000 Brazilian reais from FIA (Childhood and Adolescence Found) and the Barão Cocais Court of Justice. The institution works to promote and integrate the community of the São

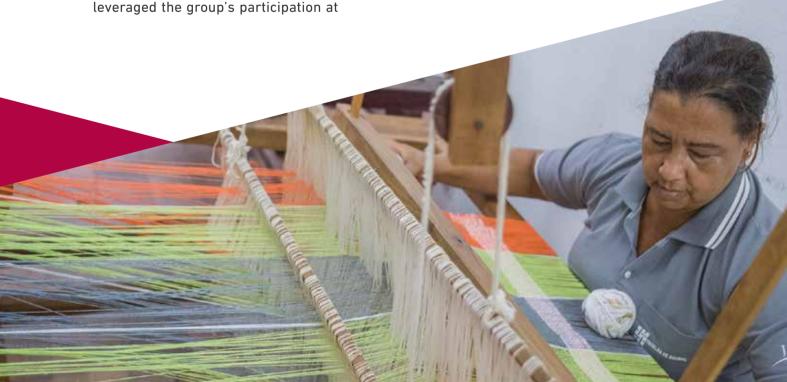
Benedito district through art and culture, through activities such as arts and crafts, ballet, music, theatre, and urban dancing classes. With the recent funding received, Pró-Amor is now preparing to launch new projects to broaden its social reach in 2018, making a difference in the lives of children, teenagers, and the community as a whole.

The institution received 42,000 Brazilian reais from FIA (Childhood and Adolescence Found) and the Barão Cocais Court of Justice

## **Brumal Association of Weavers**

In 2017, Jaguar continued to support the association created by a group of women from the community, who use loom weaving as source of income and instrument of citizenship. One of the main initiatives last year was a sponsorship of 10,000 Brazilian reais for weavers to purchase raw materials and increase production. Jaguar also leveraged the group's participation at

the Multi-sector Fair of Santa Bárbara, sponsoring the local artists' stand. The collection Essências Nativas da Mata Atlântica (Native Essences of the Atlantic Forest) was also launched during the event. The collection was inspired by a colour palette based on the species chosen at the *Clique Árvore* [Tree Click] contest of the Spring Recovery Project.



## Open Dialogue

The Company created the Open Dialogue program in 2017 to share its operating processes and procedures with the community. The action initially began in the Brumal community, in the city of Santa Bárbara. The Company surveyed the residents to identify the most frequently asked questions and created groups of

topics to be addressed. During each event, a Company professional specialized in each topic hosts open meetings with residents to answer their doubts on the topic at hand. Some of the topics discussed in these meetings are water management, environmental licensing, and human resources.

## **Spring Recovery Project**

Jaguar also continued to support this project, created in 2016 by residents of the Brumal community, in Santa Bárbara, whose goal is to recover and preserve 13 water springs on the district's outskirts. In 2017, the Company planted native trees in the permanent spring preservation area outlined in the project, installing and maintaining fences to protect the springs from animal intrusion.

In addition, Jaguar partnered with local

schools to preserve the springs by teaching the importance of vegetation in protecting watercourses. One of the actions in this sense was the *Clique Árvore* [Tree Click] contest, where young participants took photos and selected the top ten native trees in the Brumal region. Investments in 2017 totaled BRL 50,000. In 2018, another BRL 50,000 has been approved for the second phase of the project.





## Rua de Brincar - Jaguar's Play Street

This initiative promotes culture, leisure and citizenship among employees and communities, featuring educational initiatives, music recitals, and a broad range of services. All activities were developed along with residents, local leaders, and city halls.

This initiative is a great opportunity to

strengthen the bond between employees, family members and local residents. In 2017, the Rua de Brincar event was held in June, in the district of Rancho Novo, Caeté, and in December, in the community of Casquilho, Conceição do Pará. More than 800 people benefited from the initiative.

## SPONSORSHIP POLICY

Jaguar's Policy of Social Responsibility for Donations and Sponsorships steers all of the Company's decisions regarding investments in initiatives developed by the Company and third parties. To decide on whether to invest in each initiative, the Company assesses each institution's commitment, as well as each

project's focus on sustainable development and potential legacy to the communities. In 2017, Jaguar invested a total of BRL 924,448.00 in social projects – BRL 374,674.00 in sponsorships and support to local initiatives, and BRL 549,774.00 in infrastructure.

Location	Project/Action	Entity	Area	
Barão de Cocais	Farmers' Meeting	Barão de Cocais City Hall	Business	
Belo Horizonte	EXPOSIBRAM - Brazil-Canada Chamber of Commerce	Brazil-Canada Chamber of Commerce	Business	
	Town anniversary	Casa de Cultura de Caeté Foundation		
	Women's Day	Caeté City Council		
Caeté	Nossa Senhora do Bom Sucesso Festival	Bom Sucesso Parish	Culture	
	Children's Day	Israel Pinheiro Municipal School		
	Rua de Brincar in Rancho Novo	Caeté Children's Center		
		Aurora Júlia Municipal School		
	June Festival	Dr. Isauro Epifânio State School	Culture	
Conceição do Pará		Dimas Fideles Municipal Child Education Center		
	Children's Day	Aurora Julia da Fonseca Municipal School		
	80th Brumal Tournament and Santo Amaro Festival	Brumal Community Association	Culture	
	São Geraldo and Santo Antonio Festivities	André Do Mato Dentro e Arredores Rural Community Association		
	Children's Day at Cecília Duarte Municipal School	Brumal Community Association	Journal	
	"ARS FASCINIUM" Choir	Brumal Community Association		
Santa Bárbara	2 <sup>nd</sup> COMAP Young Entrepreneur Women Cultural Fair	Afonso Pena Municipal School	Education	
	Multi-sector Fair	Santa Barbara Service, Agriculture and Livestock, and Trade Association		
		Brumal Association of Weavers	Business	
	Seeds of Sustainability Award	Brumal Association of Weavers		
	Sewing and Art Project Coordination	Santa Bárbara Social and Economic Development Agency		
	Well adjustments	José Célio dos Santos	Environment	

# GRI CONTENT SUMMARY

Standard Content	Page(s) / Response	External Verification
Strategy and Analysis		
G4-1 Provide a statement from the most senior decision-maker of the organization (such as CEO, chair, or equivalent senior position) about the relevance of sustainability to the organization and the organization's strategy for addressing sustainability.	4-5	not
Organizational Profile		
G4-3 Name of organization.	Jaguar Mining Inc.	not
G4-4 Primary brands, products, and services.	22-28	not
G4-5 Location of the organization's headquarters.	4-5	not
G4-6 Number of countries where the organization operates, and names of countries where either the organization has significant operations or that are specifically relevant to the sustainability topics covered in the report.	6-8, 22-28	not
G4-7 Nature of ownership and legal form.	Jaguar Mining Inc. is a publicly traded holding Company listed on the Toronto Stock Exchange (TSX).	not
G4-8 Markets served (including geographic breakdown, sectors served, and types of customers and beneficiaries).	100% of the production is destined for export while gold is marketed in the United States.	not
G4-9 Scale of the organization, including number of employees; net sales (for private sector organizations) or net revenues (for public sector organizations; Total capitalization broken down in terms of debt and equity (for private sector organizations); quantity of products or services provided.	ector organizations; 6-11, 32-35	
G4-10 Total number of employees by employment contract and gender; total number of permanent employees by employment type and gender; total workforce by employees and supervised workers and by gender; total workforce by region and gender; report whether a substantial portion of the organization's work is performed by workers who are legally.	32-34, 38	not
G4-11 Percentage of total employees covered by collective bargaining agreements.	100%	not
G4-12 Describe the organization's supply chain.	30	not
G4-13 Report any significant changes during the reporting period regarding the organization's size, structure, ownership, or its supply chain, including: changes in the location or in operations, including facility openings, closings and expansions; changes in the share capital structure and other capital formation, maintenance and alteration operations (for private sector).	None	not
Compromisso com Iniciativas Externas		
G4-14 Report whether and how the precautionary approach or principle is addressed by the organization.	Despite not formally adopting the precautionary principle, Jaguar Mining constantly seeks alternatives beyond legal requirements to mitigate the potential impacts of its activities, regularly reviewing all elements that represent a risk to the environment, as well as the health and safety of employees, clients and communities where the Company operates.	not

Standard Content	Page(s) / Response	External Verification	
G4-15 List externally developed economic, environmental and social charters, principles, or other initiatives to which the organization subscribes or which it endorses.	Jaguar Mining subscribes to the Corporate Pact for Integrity and Against Corruption of the Ethos Institute, and also participates in the Pró-etica [Pro-ethics] Program of the Comptroller General of Brazil (CGU) and the Empresa Cidadā [Citizen Company] Program of the Brazilian Federal Revenue Service.	not	
G4-16 List memberships of associations (such as industry information) and national or international advocacy organization.	Jaguar is associated with the Brazilian Mining Institute (Ibram).	not	
Identified Material Aspects an Boundaries			
G4-17 List all entities included in the organization's consolidated financial statements or equivalent documents. Report any entities includes in the consolidated financial statements or relevant documents of the organization which were not covered by the report.	The financial statements of Jaguar Mining Inc. cover all of the holdings companies and are available at https://www.jaguarmining. com/investors/financial-reports/	Jaguar Mining's financial statements were audited by KPMG.	
G4-18 Explain the process for defining the report content and the Aspect Boundaries.	4-5	not	
G4-19 List all the material Aspects identified in the process for defining report content.	4-5	not	
G4-20 For each material Aspect, report the Aspect Boundary within the organization.	4-5	not	
G4-21 For each material aspect, report the Aspect Boundary outside the organization, as follows: report whether the aspect is material outside of the organization; if the aspect is material outside the organization, identify the entities, groups of entities or elements for which the aspect is material. In addition, describe the geographical location where the aspect is material for the entities identified; report any specific limitation regarding the aspect boundary outside the organization.	4-5	not	
G4-22 Report the effect of any restatements of information provided in previous reports, and the reasons for such restatements.	None	not	
G4-23 Report significant changes from previous reporting periods in the Scope and Aspect Boundaries.	None	not	
Stakeholder Engagement			
G4-24 Provide a list of stakeholder groups engaged by the organization.	Jaguar Mining maintains relationships	not	
G4-25 Report the basis for identification and selection of stakeholders with whom to engage.	with employees, clients, shareholders, suppliers, governments, NGOs, professional associations, unions, institutions, communities and civil society through exclusive relationship forums for each of these stakeholders.	not	
G4-26 Report the organization's approach to stakeholder engagement, including frequency of engagement by type and by stakeholder group, and an indication of whether any of the engagement was undertaken specifically as part of the report preparation process.	52-57	not	
G4-27 Report key topics and concerns that have been raised through stakeholder engagement, and how the organization has responded to those key topics and concerns, including through its reporting. Report the stakeholder groups that raised each of the key topics and concerns.	56-57	not	
Perfil do Relatório			

Standard Content	Page(s) / Response	External Verification
G4-28 Reporting period (such as fiscal or calendar year) for information provided.	2017	not
G4-29 Date of most recent previous report (if any).	2017	not
G4-30 Reporting cycle (such as annual, biennial).	Annual	not
G4-31 Contact point for questions regarding the report or its contents.	Masthead	not
G4-32 Report the 'in accordance' option the organization has chosen; report the GRI Content Summary for the option selected; refer to the External Verification.	This report was prepared in accordance with the GRI G4 guidelines, CORE option, as per the contents below.	not
G4-33 Current policy and practice adopted by the organization to submit the information report for external verification.	The 2017 Sustainability Report was not subject to third-party review.	not
Governance		
G4-34 Report the governance structure of the organization, including committees of the highest governance body. Identify any committees responsible for decision-making on economic environmental and social impacts.	12-19	not
G4-38 Report the composition of the highest governance body and its committees.	12-19	not
G4-39 Report whether the Chair of the highest governance body is also an executive officer (and, if so, his or her function within the organization's management and the reasons for this arrangement).	14-15	not
G4-42 Report the highest governance body's and senior executives' roles in the development, approval, and updating of the organization's purpose, value or mission statements, strategies, policies, and goals related to economic, environmental and social impacts.	12-20	not
G4-49 Report the process for communicating critical concerns to the highest governance body.	Leaders and managers present topics deemed critical or very important for Jaguar to the Board of Directors. They are responsible for receiving/identifying, assessing and escalating sensitive issues to be reviewed by the Company's senior management. Such issues may also be submitted through the Whistleblower Channel.	
G4-50 Report the nature and total number of critical concerns that were communicated to the highest governance body and the mechanism(s) used to address and resolve them.	18	not
Ethics and Integrity		
G4-56 Organization's values, principles, standards and norms of behavior such as codes of conduct and codes of ethics	18-20	not
G4-58 Report the internal and external mechanisms for reporting concerns about unethical or unlawful behavior, and matters related to organizational integrity, such as escalation through line management, whistleblowing mechanisms or hotlines	18	not

## SPECIFIC STANDARD DISCLOSURES

Material Aspects	DMAs and indicators	Page(s) / response	Omission	External verification
ECONOMY CATEGORY				
INDIRECT	DMA	not	not	not
ECONOMIC IMPACTS	G4- EC 7 Development and impact of infrastructure investments and services supported.	30-31, 54-57, 60-67	not	not
	DMA	30-31	not	not
PROCUREMENT PRACTICES	G4-EC 9 Proportion of spending on local suppliers at significant locations of operation	30-31	not	not
AMBIENTAL CATEGORY				
	DMA	44-46, 51-52	not	not
WATER	G4-EN 9 Water sources significantly affected by withdrawal of water.	52 Jaguar Mining constantly seeks alternatives to optimize the use of water in its manufacturing process. All units have different water collection sources – all duly authorized by the respective environmental agency.	not	not
	DMA	29, 46, 48	not	not
EFFLUENTS AND WASTE	G4-EN23 - Total weight of waste by type and disposal method.	48-49	not	not
	G4-MM3 - Total amount of overburden, rock, tailings etc.	29	not	not
	DMA	31	not	not
TRANSPORTS	G4-EN29 Significant environmental impacts of transporting products and other goods and materials for the organization's operations, and transporting members of the workforce	31	not	not
	DMA	42-46	not	not
OVERALL	G4-EN31 Total environmental protection expenditures and investments by type.	53	not	not

Material Aspects	DMAs and indicators	Page(s) / response	Omission	External verification
CUDDITED	DMA	30	not	not
SUPPLIER ENVIRONMENTAL ASSESSMENT	G4-EN32 Percentage of new suppliers that were screened using environmental criteria.	100%	not	not
SOCIAL CATEGORY				
EMPLOYMENT	DMA	People Management values and promotes the development of employees and constantly looks to improve the workplace. Compensation and benefits are established in line with industry guidelines. Jaguar Mining abides by all collective bargaining agreements signed with the labour union.		
	G4-LA1 Total number and rates of new employee hires and employee turnover by age group, gender, and region.	32-35		
	G4-LA2 Benefits provided to full-time employees that are not provided to temporary or part-time employees, by significant locations of operation.	36-37		
	DMA	40-43		
OCCUPATIONAL HEALTH AND SAFETY	G4-LA5 Percentage of total workforce represented in formal joint management—worker health and safety committees that help monitor and advise on occupational health and safety programs.	100%		
	G4-LA6 Type of injury and rates of injury, occupational diseases, lost days, and absenteeism, and total number of workrelated fatalities, by region and by gender.	40-45		
	DMA	39		
TRAINING AND EDUCATION	G4-LA9 Average hours of training per year per employee by gender, and by employee category	39		
DIVERSITY AND EQUAL OPPORTUNITY	DMA	38  Jaguar hires its professionals and establishes partnerships based solely on technical criteria, with no distinction as to gender, age, religious or sexual orientation whatsoever.		
	G4-LA12 Composition of governance bodies and breakdown of employees per employee category according to gender, age group, minority group membership, and other indicators of diversity.	38		
SUPPLIER ASSESSMENT FOR	DMA	The supplier selection process follows rigorous legal criteria, such as banning discriminatory practices and slave or child labour.		
LABOR PRACTICES	G4-LA14 Percentage of new suppliers that were screened using labor practices criteria.	100%		

Material Aspects	DMAs and indicators	Page(s) / response	Omission	External verification
NON-DISCRIMINATION	DMA	Jaguar does not tolerate any form of discrimination in its business activities.		
	DMA	54-67		
LOCAL COMMUNITIE	G4-S01 Percentage of operations with implemented local community engagement, impact assessments, and development programs.	54-67 100% of the operations are supported by community engagement programs aimed at local development.		



## Masthead

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#### JAGUAR MINING INC