



MINERA SAN CRISTÓBAL S.A.

# Building a **Future**

SUSTAINABILITY REPORT  
**2018**

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**MINERA SAN CRISTÓBAL S.A.**



**Building a  
Future**

**SUSTAINABILITY REPORT  
2018**



Wila Khara tailings deposit  
360° Photo

# Building a Future







## SUSTAINABILITY REPORT 2018



MINERA SAN CRISTÓBAL S.A.

# INDEX of contents



2018





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## **WE VALUE YOUR COMMENTS** (102-53)

We value our stakeholders opinions regarding our 2018 Sustainability Report. For more information, questions or comments, please contact:

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Open pit operations



MINERA SAN CRISTÓBAL S.A.



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# About Minera San Cristóbal (102-1)

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Roger Ibañez



## 1.1 Message from the President and the Vice President & General Manager <sup>(102-14)</sup>

**Dear readers,**

We are pleased to share with you the 2018 Sustainability Report of Minera San Cristóbal S.A. (MSC), an instrument that allows us to convey information, previously verified by an internationally accredited firm, about our performance in the environmental, social and financial spheres.

In this fourth version of our report we want to emphasize sustainable development as a fundamental and cross-cutting aspect to the organization, which is part of the corporate strategy as well as of our way of thinking and acting that is complemented by the concerns and needs of the different stakeholders with whom we interact. It is operationalized through the Management System based on three pillars: knowledge, commitment and continuous improvement, which allow us to achieve business results with efficient, participatory and collaborative work dynamics and continue ***“Building Future”*** for the region where we operate, the department of Potosí and the country as a whole.

One important result within this perspective was the admission of MSC as a member of the International Council on Mining and Metals, ICMM, an international organization that brings together 27 mining and metals companies globally that seeks to strengthen social and environmental performance and aims at ensuring respect for and confidence in the mining and metals industry thanks to the responsibility with which it operates and its contribution to sustainable development.

As in previous years, in 2018 we continued to improve our operational efficiency and as a result of the collective effort of all employees making up the company, the **Wood Mackenzie** report of 2018 ranked Bolivia as the second most productive country in open pit zinc mines in the world.

Minera San Cristóbal, confirming its leadership in the national mining sector, has made significant contributions in taxes and royalties to the country, the department of Potosí and the municipality of Colcha K. This is confirmed in official reports from different state institutions, highlighting that MSC contributes over 60 percent of the royalties coming from the department of Potosí.

Minera San Cristóbal constantly seeks to extend the life of the mine through the optimization of the available mineral, adjusting its production parameters, costs and market values and introducing new technologies that





contribute to this goal. It is in this spirit that we acquired Grade Engineering technology developed in Australia by CRCORE Optimising Resource Extraction, the results of which have made it possible to enhance efficiency and ensure the cost reduction required to maintain sustainability of the company, in addition to achieving the following advantages: we increased the feed grade; the energy demand tends to go down since 100 percent of the selected mineral is below 19 micro millimeters; and the life of the mine has been extended by using discarded tailings.

The safety and health of our employees are of the utmost importance to Minera San Cristóbal. Therefore, in 2018 our performance in Industrial Safety was the result of having achieved a preventive culture through programs and continuous improvement.

Among the tasks carried out in the year and that are aligned with the principles of the ICMM, the following OHS programs have been reformulated: awareness-raising and socialization of our “**Golden Rules**”, improvements in the monitoring and controls of industrial hygiene results, strengthening and awareness-raising about the road safety measures.

We should also highlight that the Industrial Hygiene program, implemented over the last five years, aims to ensure that the occupational risk agents to which our employees may be exposed, are identified, evaluated and controlled through: monitoring and measurement, respiratory protection, hearing conservation, evaluation of the Personal Protective Equipment (PPE), radiation protection and risk communication. In the sphere of health, Minera San Cristóbal has implemented the following programs: occupational health, medical care and emergencies, health prevention and promotion; aimed at health care, prevention and promotion.

As a result of the implementation of these health and safety programs in 2018, no occupational diseases were identified and no fatalities were reported.

Regarding our environmental performance, in compliance with current regulations and quality and environmental standards, MSC develops and applies best practices in its production operations to prevent, mitigate and remedy possible impacts. Thus, no environmental incidents were reported to the competent environmental authority.

For Minera San Cristóbal water use is a relevant issue, which is why we have taken actions for operational improvement and to optimize efficiency. In 2018 the average rate of water consumption per tonne treated was 0.51. An average of 19,815 cubic meters of water per day was recovered from the tailings deposit recirculation



system, reducing the rate of groundwater extraction. This contributes to sustainability of the aquifers and reduces the operational costs. In total, 7.23 million cubic meters of water were recovered, accounting for 44 percent of the water used in the process. Due to its high degree of salinity, the water from the aquifers is not apt for human, animal or irrigation.

As part of good environmental practices and in view of the need to improve the tailings discharge system in the mining operation, a central platform has been built at the Wila Khara tailings deposit. One of the benefits of the construction of this platform is that it provides the possibility to improve the recovery of water for recirculation to the plant and optimize the tailings disposal space.

With reference to social performance, we believe that it is important to underline that Minera San Cristóbal maintains its commitment to socio-economic development of the communities near the mining operation, providing technical and financial assistance to the sustainable development projects of the Consultative Council Los Lipez San Cristóbal. In 2018, interinstitutional agreements were signed with the municipalities of Colcha K and San Agustín to support the project for asphaltting the Puente Río Grande - Cruce Laguna Colorada highway, which will be of great benefit for development of the communities of the region.

In order to realize the different productive and social projects of the strategic plan of the Consultative Council Los Lipez San Cristóbal, strategic alliances were formed with different organizations that coordinate and interact with each other in social, economic and environmental fields.

To date, 113 ventures have been set up in different aspects of community-based tourism thanks to the coordinated work with the Consultative Council Los Lipez San Cristóbal, the Foundation for Development Cooperation and Promotion of Assistance Activities (CODESPA), Conservation International Foundation, the Municipal Government of Colcha K, the Local Tourism Association Pueblos Mágicos de Los Lipez and the authorities of the communities of San Cristóbal, Culpina K, Vila Vila and Río Grande.

We have continued with the comprehensive llama and vicuña management and use project, through a strategic alliance with the Municipality of Colcha K, the Canadian Cooperation, Conservation International Foundation, the Consultative Council Los Lipez San Cristóbal and the Camelid Producers Association (APROSAC).





In 2018, organization of the Regional Association of Vicuña Producers at the Municipal Level (ARMAVI-CK) was consolidated with twelve vicuña producing communities.

In order to improve the production of certified organic quinoa under a productive chain approach that was adopted in previous years, in 2018 actions were taken to contribute to improving the producers' income in coordination with the Association of Agricultural Producers of the Community of Culpina K (APRACCUK) and the Municipality of Colcha K.

With regard to alternative education and in coordination with the vice ministry responsible for this area, in 2018 we granted certificates to 368 people in the fields of quinoa, camelids, gastronomy, handicrafts and dressmaking. We also certified 137 people as basic technicians in the mentioned categories, and 77 people as assistant technicians in camelids and gastronomy.

In the area of health of the communities surrounding the project, the authorities of the Departmental Health Service (SEDES) of Potosí issued Certificates of Accreditation to the health centers in the communities of San Cristóbal and Culpina K, for having complied with the standards and evaluation parameters laid down by the National Health Quality Program (PRONACS). These centers have the necessary infrastructure for inpatients. In this way, the improved quality of the provision of health services in both centers is made public and evident.

Finally, we once again reaffirm that what we achieved in 2018 is the result of the effort, commitment and contribution of our team; we therefore wish to express our appreciation for each and every one of the people working at Minera San Cristóbal. The performance reflected in this Sustainability Report projects our company's commitment to continue with a transparent, solid, innovative business management committed to sustainable development.

Sincerely,

A blue ink signature of Dave Assels, consisting of a stylized, flowing line.

**Dave Assels**  
Vice President and General Manager  
Minera San Cristóbal S.A.

A blue ink signature of Mitsuhiro Hirano, written in Japanese characters (平野 光洋).

**Mitsuhiro Hirano**  
President  
Minera San Cristóbal S.A.



## 1.2 Our company (102-3, 102-4)

Minera San Cristóbal S.A. (MSC) (102-1) is a Bolivian mining company which has been a fully-owned subsidiary of the Japanese Sumitomo Corporation since March 2009.

# Vision

To be a world class Bolivian mining company.



## Mission

Develop a model mining operation through safe operations, at low cost, with innovative technology, with social commitment and respect for the environment, that creates value to the shareholders, the employees, the region in which it operates and the country.

## Values

- Trust
- Integrity
- Teamwork
- Honesty
- Professionalism
- Continuous Improvement
- Mutual Respect
- Transparency
- Commitment to Safety, the Environment and Corporate Social Responsibility

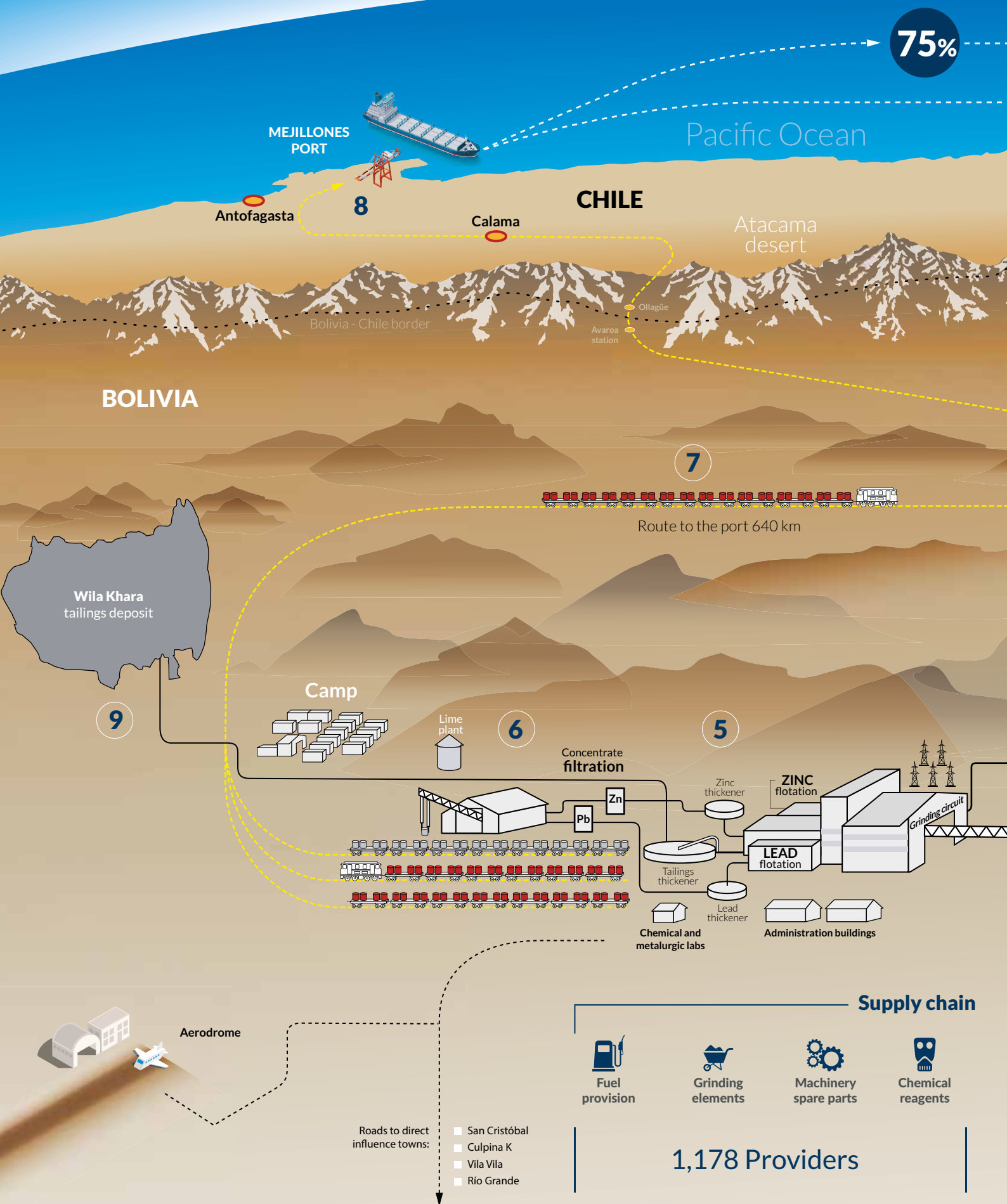
## Location

The San Cristóbal mine, which is our only operation (102-7), is located in the province of Nor Lípez, municipality of Colcha K in the department of Potosí (102-4), and has administrative offices in the cities of La Paz and Potosí (102-3). Considered the most important mining venture of Bolivia, we operate by combining use of the latest technology with permanent training of our employees, strict health and industrial safety controls, preservation of the environment and sustainable development, contributing to development of the region in which we operate, the department of Potosí and the country as a whole.





# OUR COMPANY





Asian smelters (102-6)

25%

European smelters (102-6)

#### MAIN INDUSTRIES:

- Steel
- Brass
- Transport
- Construction alloys
- Consumer goods
- Electrodomestics and engineering

Iquique

Arica

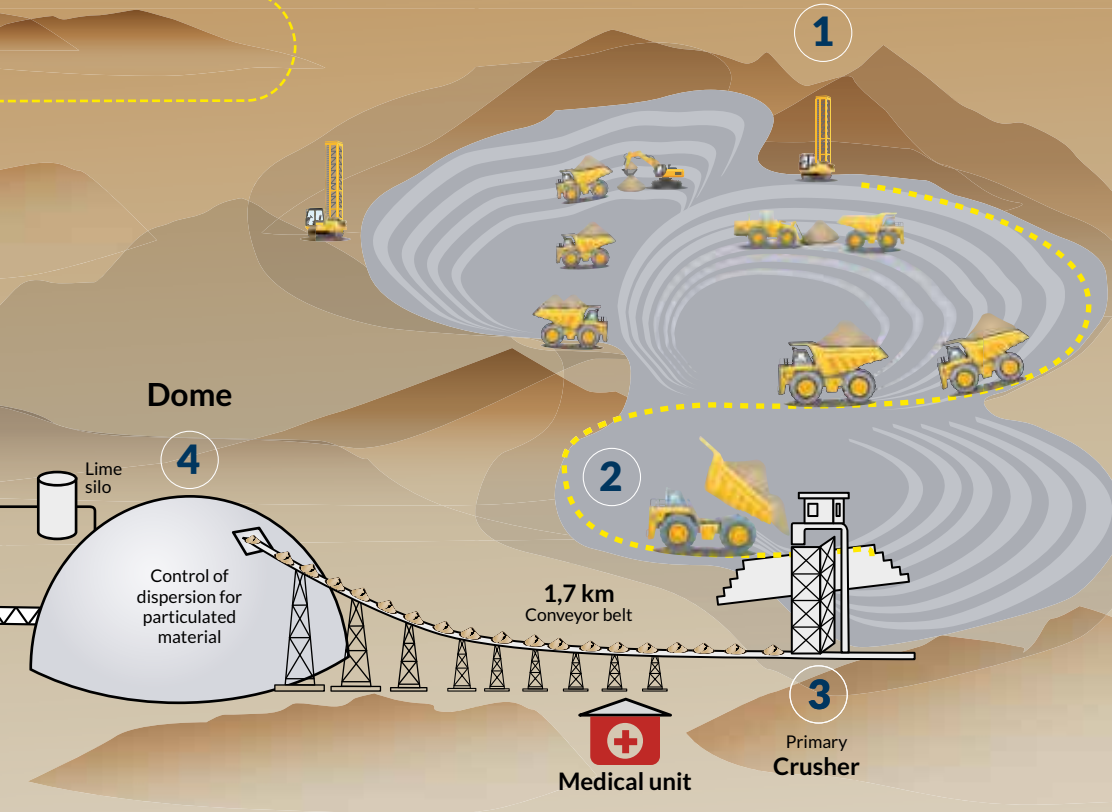
PERÚ

Andes mountains



INVESTMENT  
1,800 MILLIONS

#### MSC OPERATIONS (102-2)



- 1 Drilling and blasting
- 2 Loading and hauling
- 3 Primary grinding
- 4 Stock pile (Dome)
- 5 Grinding, flotation and filtration
- 6 Containers loading area
- 7 Train transport
- 8 Port and shipping
- 9 Tailings deposit

#### main categories (102-9)

Transport and storage  
of concentrates

Water  
treatment

Specialized  
services

Telecommunications

Catering

2018

Hiring services  
Acquisition of goods

Community

6%  
<1%

National

52%  
37%

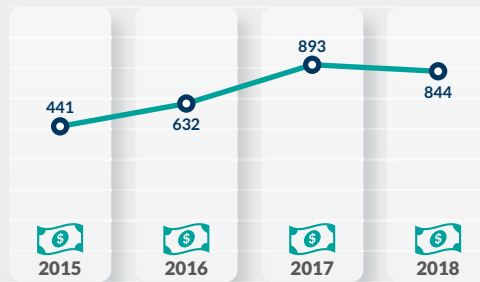
International

42%  
63%

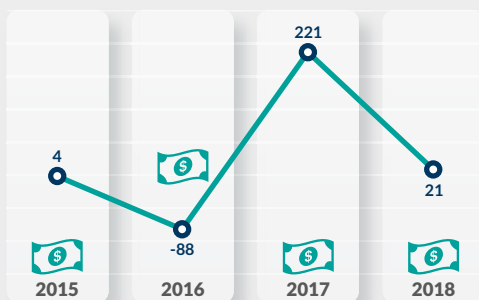
More details about the process can be found in:  
<http://www.minerasancristobal.com/v3/en/inicio/operations/>

### 1.3 Operational highlights (102-7)

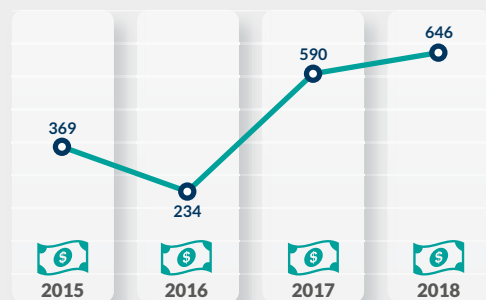
**Revenues**  
(million dollars)



**Profit/loss**  
(million dollars)



**Working capital**  
(million dollars)



**Zinc-silver concentrate production**  
(thousand tonnes)



**Zinc-silver concentrate sales**  
(thousand tonnes)



**Lead-silver concentrate production**  
(thousand tonnes)



**Lead-silver concentrate sales**  
(thousand tonnes)



\* The data reflected in these charts are based on a calendar year (January to December); in the reports covering years 2015 and 2016 the data were based on fiscal years. More information can be found in chapter 3 of the report.

In 2018, there were no significant changes in terms of size, structure, ownership and supply chain (102-10).

## 1.4 About this report

The purpose of this report is to provide annual information to our stakeholders and the general public (102-52) about the performance of MSC, as well as to share how we approach our activities to contribute to sustainable development.

All data published in this sustainability report convey the results of one calendar year, from January 1st to December 31st, 2018 (102-50). Previous versions of the report cover years 2015, 2016 and 2017 (102-51).

We have put together this report in accordance with the “Core” option (102-54) of the GRI-2016 (Global Reporting Initiative) Standards and its respective Mining and Metals Sector Supplement; and we have also included the eleven “Comprehensive” General Standard Disclosures. On page 114, you can find the Content Index, which shows the location of the performance indicators for material topics.

## 1.5 Verification of the sustainability report

(102-56)

In order to offer a greater level of trust to the stakeholders and the general public in relation to the content of the Sustainability Report, firm Deloitte<sup>1</sup> has been hired for the independent verification of the sustainability performance indicators, applicable for the 2018 reporting period. This external entity is endorsed by the Global Reporting Initiative and the World Business Council for Sustainable Development<sup>2</sup>, and has extensive experience in verifying sustainability reports in the international mining sector. We performed the verification in accordance with the International Standard for Assurance Over Non-Financial Information (ISAE 3000), provisions of the International Auditing and Assurance Standards Board (IAASB)<sup>3</sup> and the Sustainable Development Framework of the International Council on Mining and Metals (ICMM). The limited verification report can be found in chapter 8 of this report.

<sup>1</sup> Deloitte: Global Enterprise with presence in 154 countries, which gives advisory and services on Sustainability, Corporate Responsibility, audit, finance, risk, taxes and legal issues.

<sup>2</sup> World Business Council for Sustainable Development: Worldwide Association with more than two hundred companies that work exclusively with the business and sustainable development sector.



## 1.6 Material topics (102-46)

The material topics identified in the previous year were validated by the General Management and Directors and therefore remain in place as relevant issues for 2018. Thus, in this report we provide an update on the progress of these topics.

From a methodological point of view, the material topics or concerns of both internal and external stakeholders were identified through interviews and focus groups with individuals or organizations; qualitatively, they are ranked as high, medium and low depending on the frequency, intensity and/or passion with which these issues or concerns were raised or mentioned at these meetings.

Following these meetings, we conducted workshops with the executive team of the company to review and corroborate the results of the interviews and analyze the impacts on the business, aimed at obtaining a final matrix of material topics (102-21) (102-32).

The Material Topics and Boundaries 2018 (103-1; 102-47) they are specified below:

<sup>3</sup> International Auditing and Assurance Standards Board (IAASB): Agency responsible for improving the quality and uniformity of audit activities throughout the world.



## CONSOLIDATION OF THE MOST SIGNIFICANT MATERIAL TOPICS

MATERIAL TOPICS	MATERIAL SUBTOPICS	COVERAGE	ACTIONS DEVELOPED
<b>ECONOMY</b>			
LOM (Life of Mine)	Closure plan	Internal/External (communities, suppliers, contractors)	<ul style="list-style-type: none"> <li>Proposed environmental and social closure plan (Knight Piésold).</li> <li>Study on Resilience in the direct area of influence (Sajama Summit).</li> <li>Feasibility and Engineering Studies of the Pilot Plant for Oxides</li> </ul>
	Oxides project to extend LOM		
Local Economic Development	Employment after closure	Internal/External (communities, employees, civil society, media)	<ul style="list-style-type: none"> <li>Strategic social investment plan.</li> <li>Plan to contribute to social, economic and institutional development of the communities.</li> <li>Plan to support vulnerable groups.</li> </ul>
	Employment for Second Generation in Communities		
	Alternative Work for Local Entrepreneurs		
	Economic Benefits		
Sustainable Economic Performance	Concentrate export logistics	Internal/External (government, customers, employees, suppliers, contractors)	<ul style="list-style-type: none"> <li>Comprehensive contingency plan for the export of concentrates.</li> <li>Operational Improvements: Optimization of the availability of production equipment, high precision in drilling equipment.</li> <li>Replacement of the wireless network at the Mine.</li> </ul>
	Cost of labor and productivity		
Controlled Substance Management	Diesel volume control	Internal (government, employees)	<ul style="list-style-type: none"> <li>Optimization of the administration of controlled and hazardous substances in warehouses.</li> </ul>
Risk Management	Comprehensive Risk Management	Internal (employees, investors, civil society)	<ul style="list-style-type: none"> <li>Implementation of the integrated risk management committee.</li> </ul>
<b>ENVIRONMENT</b>			
Water	Tailings Deposit	Internal/External (all stakeholders)	<ul style="list-style-type: none"> <li>Mine: Hydrogeological study and model.</li> <li>Wila Khara: Construction of the central platform, monitoring wells.</li> <li>Communities: Awareness-raising on the rational use of water, improving water harvesting systems in San Cristóbal and Culpina K.</li> </ul>
	Water for the communities		
Energy	Integration into the National Interconnected System (SIN) of energy	Internal/External (all stakeholders)	<ul style="list-style-type: none"> <li>Project for the implementation of centralized equipment with the new control system (PLC).</li> </ul>
Waste Management			<ul style="list-style-type: none"> <li>Plan to implement model facilities and equipment for waste management in the communities.</li> <li>Environmental monitoring plan.</li> <li>Sale and disposal of materials and goods.</li> </ul>

## CONSOLIDATION OF THE MOST SIGNIFICANT MATERIAL TOPICS

MATERIAL TOPICS	MATERIAL SUBTOPICS	COVERAGE	ACTIONS DEVELOPED
Biodiversity/Protected Areas	Llamas	Internal/External (all stakeholders)	<ul style="list-style-type: none"> <li>Plan of contacts with stakeholders in relation to the production of camelids.</li> <li>Remediation and rehabilitation (topsoil, replanting).</li> <li>Proposal for a comprehensive biodiversity strategy.</li> </ul>
	Biodiversity Strategy		
Product Lifecycle			<ul style="list-style-type: none"> <li>Identification of environmental aspects and impacts on the product life cycle.</li> </ul>
Climate Change			<ul style="list-style-type: none"> <li>Proposed adaptation and mitigation strategies.</li> </ul>

## HEALTH AND SAFETY

Health and Safety (0 fatalities or injuries with lost time)		Internal/External (employees, communities, union, suppliers, contractors)	<ul style="list-style-type: none"> <li>Industrial safety programs.</li> <li>Health programs.</li> <li>Proposal for improvements in the management of Physical Safety.</li> </ul>
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## SOCIETY

Wila Khara (Tailings deposit)		Internal/External (communities, government, employees)	<ul style="list-style-type: none"> <li>Plan to monitor impacts in the area of the tailings deposit.</li> <li>Environmental monitoring plan.</li> <li>Expansion of the tailings deposit.</li> </ul>
SLO (Social License to Operate)			<ul style="list-style-type: none"> <li>Follow-up of the social license.</li> <li>Monitoring of the status of compliance with conventions and agreements.</li> <li>Communication plan.</li> </ul>
Governance	Corporate Reputation		<ul style="list-style-type: none"> <li>Legal compliance (licenses, permits, taxes, etc.).</li> <li>Relationship plan (events).</li> </ul>
	Transparency		

## LABOR PRACTICES

Organizational Culture	Working Climate	Internal/External (communities, government, employees, suppliers)	<ul style="list-style-type: none"> <li>Comprehensive contingency plan for the export of concentrates.</li> <li>Operational Improvements: Optimization of the availability of production equipment, high precision in drilling equipment.</li> <li>Replacement of the wireless network at the Mine.</li> </ul>
	Training and professional development		
	Best Practices		
	Commitment of Contract Supervisors		
Human Rights	Gender equity/Inclusion		<ul style="list-style-type: none"> <li>Proposal of comprehensive human rights management strategies.</li> </ul>
	Discrimination		
	Possible child labor among suppliers		



Hauling in Jayula pit



MINERA SAN CRISTÓBAL S.A.



2

## Our sustainability approach

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Jorge Gomez



## 2.1 Sustainable development management

Sustainable development is embedded in our corporate strategy and our way of thinking and acting; it is an indivisible part of our philosophy and can be encountered in the very essence of our company. That is why we make all our decisions taking into account the concerns and needs of our stakeholders; accordingly, we prepare our planning and operations fully keeping in mind the social, economic and environmental dimensions.

We believe that health and safety come first, that we are responsible for our environment, we respect human rights, and we respect and support the communities in which we operate.

Thus, we manage the natural resources we use with a comprehensive and responsible approach, with a permanent focus on preventing the impacts which our operations may produce in different areas and stakeholders. This approach is part of our vision, mission, management policy, objectives and strategic goals, and therefore governs all aspects of our operations. We strive to ensure continuous improvement and, in this way, to be able to contribute decisively and firmly to sustainable development.

The commitments we take on are also detailed in our management policy, available on our website <https://www.minerasancristobal.com/v3/en/inicio/our-company/management-policy/>

### Management system of Minera San Cristóbal

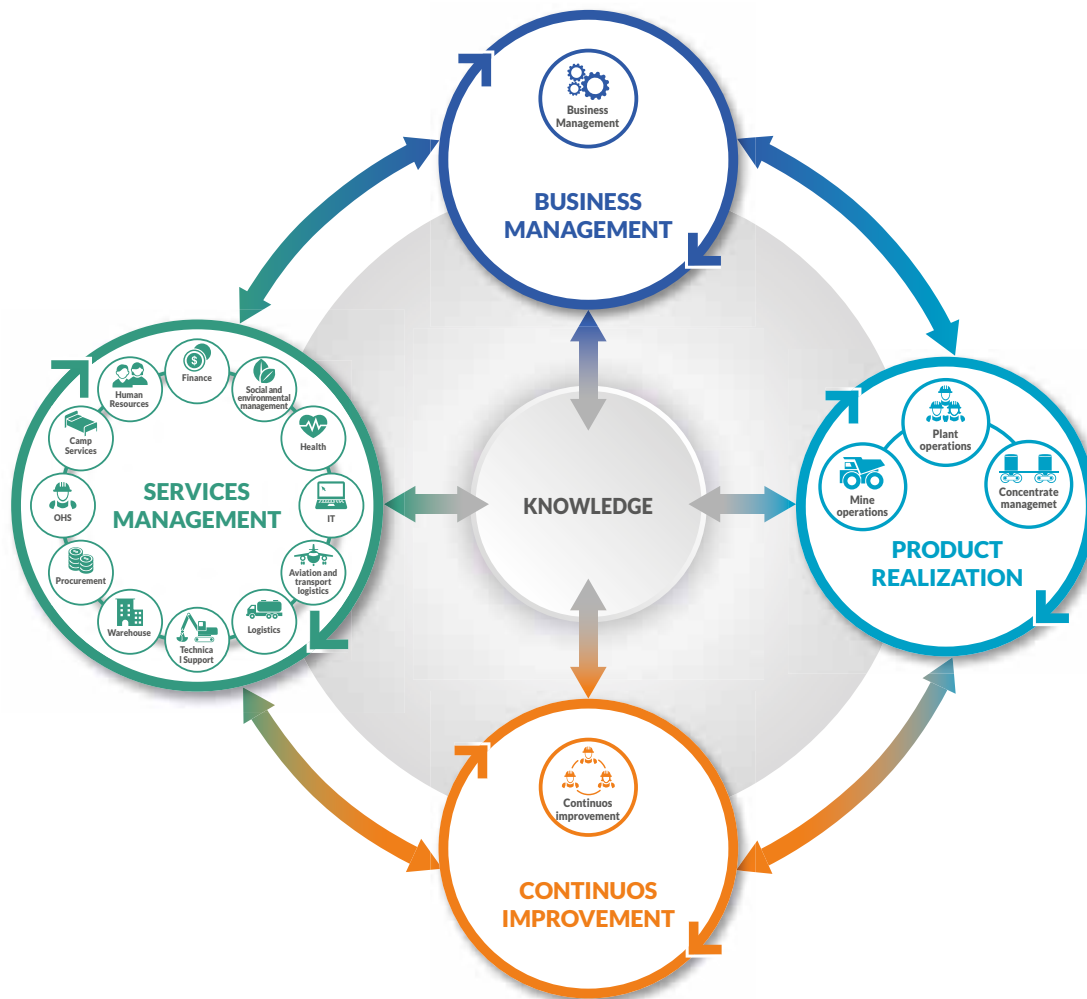
(103-3)

At MSC, we have a holistic approach that is oriented towards sustainable development and that is integrated at all levels of the company. This approach is managed through the business processes and systems (BMS or Business management system), including tools with the ability to produce more efficient, participative and collaborative company results that make it possible for us to develop best practices in the Bolivian mining sector.

In the next page, the graph depicts the four main components of the management model, which are enterprise management, product realization, services and continuous improvement. The components are made up of different systems and they interact in a dynamic manner through the flow of knowledge consisting of internal and external learning and feedback from stakeholders.



## OUR BUSINESS MANAGEMENT SYSTEM (BMS)



## 2.2 Stakeholder engagement and social license to operate

### Stakeholders (102-40, 102-42, 102-43, 102-44)

We define our stakeholders as the people, groups of people, organizations and public/private institutions that affect or may be affected, positively or negatively, as a result of our activities. We identify, map and analyze the stakeholders in order to engage with them proactively, exchanging ideas so that the operations would respond to their needs and expectations. This engagement is based on the values of mutual respect, honesty and transparency.

We are very interested in hearing our stakeholders' opinions. For this reason, we open communication channels to understand their concerns (worries or complaints) related to different aspects of our operations. Thus, they can contact us by phone and email or we can meet personally (interviews, follow-up of requests, permanent contacts, formal and informal conversations, and meetings) with the people who require a closer and more individualized approach. Once the requests have been verified and validated, we track the flow of communication with the people submitting them within a reasonable timeframe (depending on the complexity of each case), since we are interested in providing a complete and appropriate response to all concerns. Before closing each process, we inform the stakeholder of the actions that were taken (102-34), within a framework of respect and

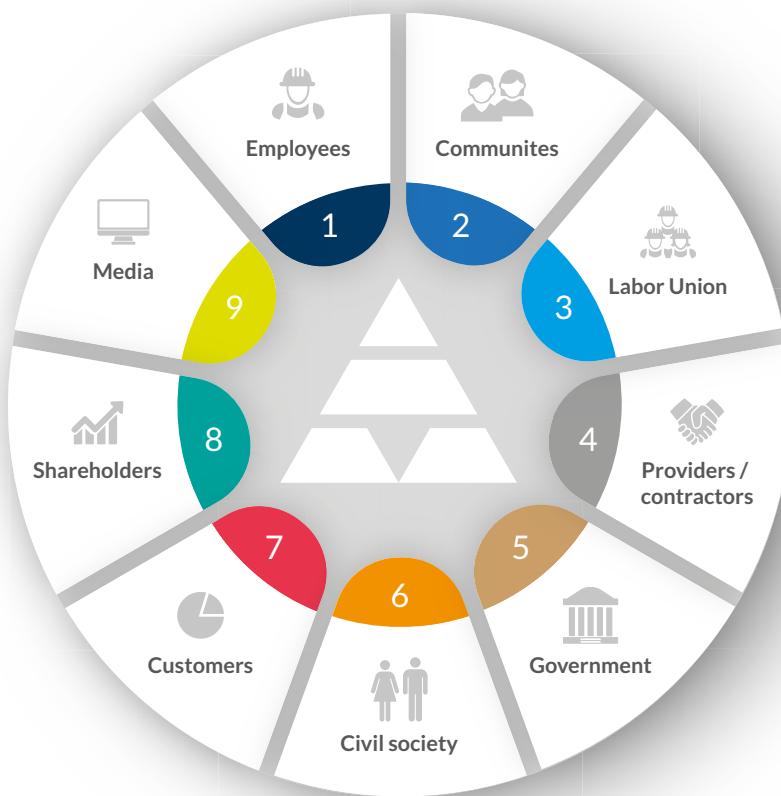
gratitude, since these actions help us to improve our operations and processes and to grow as a company.

We manage these issues systematically in accordance with the process to manage improvement opportunities and with the instructions for MSC staff

regarding complaints and suggestions and on how to address concerns and/or complaints of stakeholders.

MSC does not participate in political parties and gives no particular support to any political party, individual politicians, officials or government employees (415-1).

## OUR STAKEHOLDERS



## Validation of the social license to operate

The term social license to operate (SLO) is widely used in the global mining industry, where it is universally understood as the reference of the level of acceptance (or approval) of an organization's activities by the stakeholders most concerned in relation to a particular activity. The concept of the SLO also recognizes the importance and influence of stakeholder perceptions. In addition to statutory licenses and other regulatory permits issued by the government, stakeholder networks also have the ability to delay, obstruct or redirect projects if they do not accept or approve a project or its commercial activities.

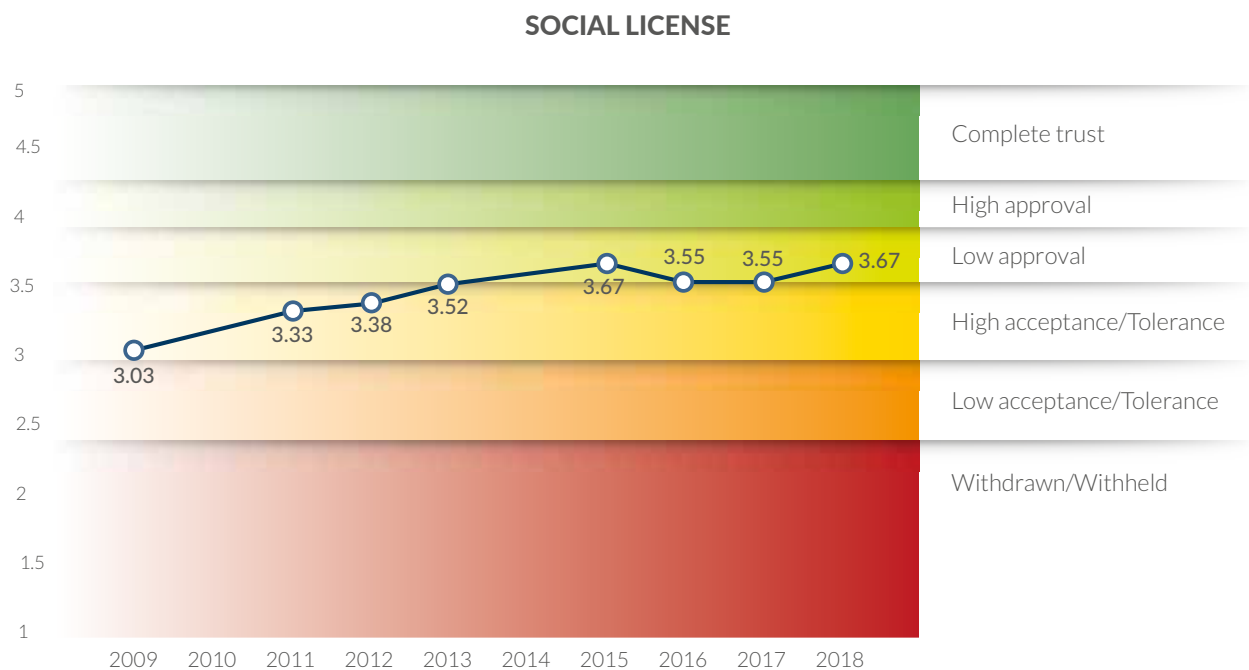
Minera San Cristóbal was one of the first mining companies to transform the concept of the social license from a metaphor to a concrete management tool, through the application of standardized metrics to arrive at a true understanding of the variables and dynamics of community perceptions. In hindsight, the ability to apply and document the quality of the relationship between our project and our neighboring communities was used for the first time in 2008, using qualitative indicators. Already in 2009 we began to monitor the SLO, using a quantitative methodology. At present, more intensive and independent studies are conducted every 12 to 15 months, with the internal ability to track and monitor the values on a monthly and even weekly basis.



Over the last nine years, we have managed to develop a high degree of reliance on the social license measurement tool, thanks also to the complementary information obtained on the nature of the perceptions and opinions of stakeholders. We use these data to underpin community engagement and development of our short- and medium-term objectives, as well as inputs for strategic planning and, where appropriate, for risk management.

The highest value reached in our SLO was in 2015 with 3.67, followed by two years with a slightly lower score of 3.55 (in 2017) to then go back up to 3.67 in

2018. This variability is initially related to criticism in the media and, subsequently, to our response to their request for greater access to information. However, these levels are mostly an indication of the high level of acceptance/low approval of our activities by our main stakeholders. We are proud to have been able to fully integrate the SLO measurement and monitoring into our activities as a continuous initiative underlining our commitment and engagement towards the community, the values of which are inputs for our Sustainability Objectives and Goals. It is our firm intention and commitment to continue to meet or exceed the 2018 values in a sustained manner.



The book entitled *The Social License: The Story of the San Cristóbal Mine* written by Robert Boutilier and Ian Thomson, research professionals in social licenses, was published in 2018 and provides a detailed description of the complex social history of the project as well as how it obtained, lost and regained its social license.

## 2.3 Our sustainability performance

The 2018 goals and achievement thereof are described below:

SUSTAINABILITY OBJECTIVES		
2018 OBJECTIVES	STATUS AS OF 2018	2019 OBJECTIVES

## ECONOMIC/OPERATIONAL

Revise policies, procedures and tools subject to legal, regulatory compliance, ethics and anti-corruption.	<ul style="list-style-type: none"> <li>The Code of Ethics and Business Conduct and the Whistleblower Regulation were revised and updated.</li> <li>An instruction regarding Representation Expenses was suggested.</li> </ul>	Disseminate and monitor compliance with new documents.
Identify the most relevant international standards and guidelines, paying particular attention to those related to human rights, indigenous rights, biodiversity and solid and hazardous waste management.	International standards related to human rights, indigenous rights, biodiversity and climate change were identified.	<ul style="list-style-type: none"> <li>Complete the identification of international standards related to solid and hazardous waste management.</li> <li>Define new management practices to be implemented.</li> </ul>
Develop a formal process to better identify, prioritize and address sustainable development risks and incorporate those risks into the company-wide risk framework.	The risk management committee was set up with participation of all areas and the comprehensive risk management model based on ISO 31000 was established.	<ul style="list-style-type: none"> <li>Complete adaptation of the specific instructions according to what is defined in terms of comprehensive risk management.</li> <li>Define KRIs (Key risk indicators) for monitoring.</li> <li>Analyze APELL (Awareness and preparedness for emergencies at local level) for mining.</li> </ul>
Be a low-cost producer, by reducing costs and maximizing the product value based on innovations and proper planning to optimize the tonnage, the head grade, recovery and quality of the concentrates.	In 2018, the unit costs of the concentrate production increased by 16.2% and the production of concentrates decreased by 9.5%.	Be a low-cost producer, by reducing costs and maximizing the product value based on innovations and proper planning to optimize the tonnage, the head grade, recovery and quality of the concentrates.
Increase mineralized reserves through continuous efforts in exploration, drilling and optimization of the silver recovery.	In and around the San Cristóbal pit (Jayula-Tesorera-Colón), drilling works were carried out (phase VII), with the aim of exploring sulfurous mineralization. In the Cristian and Calameña areas, another drilling campaign was developed, with the aim of determining the presence or not of silver oxide mineralization.	No exploration works are proposed for 2019.

## ENVIRONMENT

Improve the understanding of biodiversity and ecosystem services.	A comprehensive biodiversity strategy was proposed that, among other things, includes the registration of environmental risks, the dissemination of results of monitoring replanted and rehabilitated areas and the implementation of a scientific research program linked to native flora or fauna in danger of extinction.	Complement the study on biodiversity and define an implementation plan.
Develop a comprehensive climate change policy.	Two strategies were proposed: one for mitigation aimed at the rational use of natural resources and the reduction of greenhouse gas (GHG) emissions. And another one for adaptation that entails a vulnerability analysis that identifies the main potential impacts of climate change (current climate conditions and future scenarios).	Complement the research on climate change and define an implementation plan.

SUSTAINABILITY OBJECTIVES		
2018 OBJECTIVES	STATUS AS OF 2018	2019 OBJECTIVES
Develop and implement a comprehensive water strategy to address quantity and quality problems.	The hydrogeological study was carried out at the headwaters of the Toldos River; geophysical and hydrogeological studies were conducted at the eastern edge of the Wila Khara tailings deposit, there has been a revision and update of meteorological and hydrological data of the area, and the personnel involved in hydrology and hydrogeology topics have received training.	<ul style="list-style-type: none"> <li>Integrate information on the water balance at the mine, in Toldos and Wila Khara and produce a consolidated report.</li> <li>Formalize the comprehensive water management policy.</li> </ul>
Broaden the definition of environmental incidents to cover the full range of situations that have, or may have, adverse environmental impacts.	<ul style="list-style-type: none"> <li>The criteria for classifying incidents were completed, now also considering the following aspects: archaeological, historical or cultural heritage sites, impacts on local productive activities, impacts on the quality of water, air, soil, flora and fauna.</li> <li>Environmental incident reports were included in monthly business review meetings.</li> </ul>	Complete the formalization and dissemination of the criteria defined in the Instruction on the Recording and Investigation of Incidents.
Keep the pumping rate below the recommended maximum of 39,000 m <sup>3</sup> /day.	The groundwater pumping rate of the production wells was 25,240 m <sup>3</sup> /day (64.7% of the recommended volume).	Keep the pumping rate below the recommended maximum of 39,000 m <sup>3</sup> /day.
Reduce solid waste generation by 2% in relation to the previous year.	120,324 kg/month of solid waste was generated: 19.6% more than in 2017.	Reduce solid waste generation by 2% in relation to the previous year.
Reduce energy consumption by 1%.	15,571 MWh less than in 2017 was consumed, i.e. a decrease of 4.2%.	Reduce energy consumption by 1%.

HEALTH AND SAFETY		
Manage current occupational exposures to reduce the potential adverse impacts on the workers' health.	The monitoring and hygiene plan was reviewed and the results were reported.	Improve the instruction on industrial hygiene monitoring and measurement.
Implement road safety actions.	An awareness campaign was carried out on road safety among staff, the relocation of parking spaces and the signaling of pedestrian crossings.	Maintain and improve the conditions of pedestrian crossings and raise awareness on the subject.
Preventive programs will continue to be implemented to reduce risks and to protect the health and safety of MSC's workers. The industrial hygiene programs will continue to be improved.	During 2018, we achieved a compliance of 90% in implementation of the planned preventive programs, which led to excellent results that were also reflected in the audits carried out during the year.	Implement eight safety programs focused on a Culture of Prevention.
Align contractors' performance with that of MSC in terms of OHS standards in order to generate a positive impact on accident indicators.	Implementation of the program to strengthen contractors resulted in an LTFR of MSC of 0.28 and of the contractors of 0.20.	LTFR below 0.05.
Maintain health services with high quality standards.	<ul style="list-style-type: none"> <li>97.7% compliance with quality standards-accreditation of local network services.</li> <li>57% compliance with external network quality standards.</li> </ul>	<ul style="list-style-type: none"> <li>98% compliance with quality standards-accreditation of local network services.</li> <li>65% compliance with external network quality standards.</li> </ul>



SUSTAINABILITY OBJECTIVES		
2018 OBJECTIVES	STATUS AS OF 2018	2019 OBJECTIVES
Consolidate health care, prevention and promotion programs.	80.32% compliance (thirteen out of eighteen planned operational programs completed).	90% compliance, through continuity in development of the thirteen operational programs implemented since 2018, focused mainly on priority areas, in addition to conducting an analysis of effectiveness and efficiency of the programs and their contribution to protection of the population covered, in order to achieve a greater degree of consolidation.
Continue improving MSC's performance in health.	96% compliance (i. More than 90% of the population under MSC's care has received medical care; ii. The user satisfaction levels reached around 70%; and iii. Time lost due to temporary disability was under 2% of absenteeism, thus avoiding a negative impact on the company's productive capacity).	98% compliance in health performance (for which initiatives will be developed to improve user satisfaction levels. These initiatives will include improvements in health services through compliance with the own quality standards of the MSC Health System and efforts to build appropriate user satisfaction categories).

SOCIAL/COMMUNITIES		
Integrate the perception of minority groups into social management and improve the criteria for handling complaints.	<ul style="list-style-type: none"> <li>The information on the management of perceptions of minority groups was supplemented.</li> <li>The Instructions for Follow-up of Events - Stakeholders, Treatment of Concerns and/or Complaints and Social Risk Management were updated.</li> </ul>	Verify compliance with instructions and the management of perceptions and/or complaints.
Analyze the way in which social projects are monitored.	The information was supplemented and the way to work on the monitoring and measurement of sustainable development projects in the communities was clarified.	Monitor defined performance indicators.
Consolidate relationships with different stakeholder groups through the strengthening of social capital.	The different community initiatives materialized through partnerships with Codespa, Tourism Association Pueblos Mágicos, the Municipality of Colcha K, the Canadian Cooperation, Conservation International Foundation, Aprosac, Apraccuk and the Consultative Council Los Lipez San Cristóbal.	Strengthen the political, social and productive organizations of communities in the direct influence area.
Keep the SLO above 3.5.	The SLO level reached was approval, equivalent to 3.67.	Keep the SLO in the MSC impact area at a level of 3.5.
Launch the marketing of products and services.	Start of marketing of pre-roasted quinoa products and tourism services.	Consolidate the implementation phase for productive transformation.
Certify and accredit Health Centers.	Certification and accreditation awarded to the Health Centers of San Cristóbal and Culpina K.	Certify and accredit the Health Center of Río Grande.

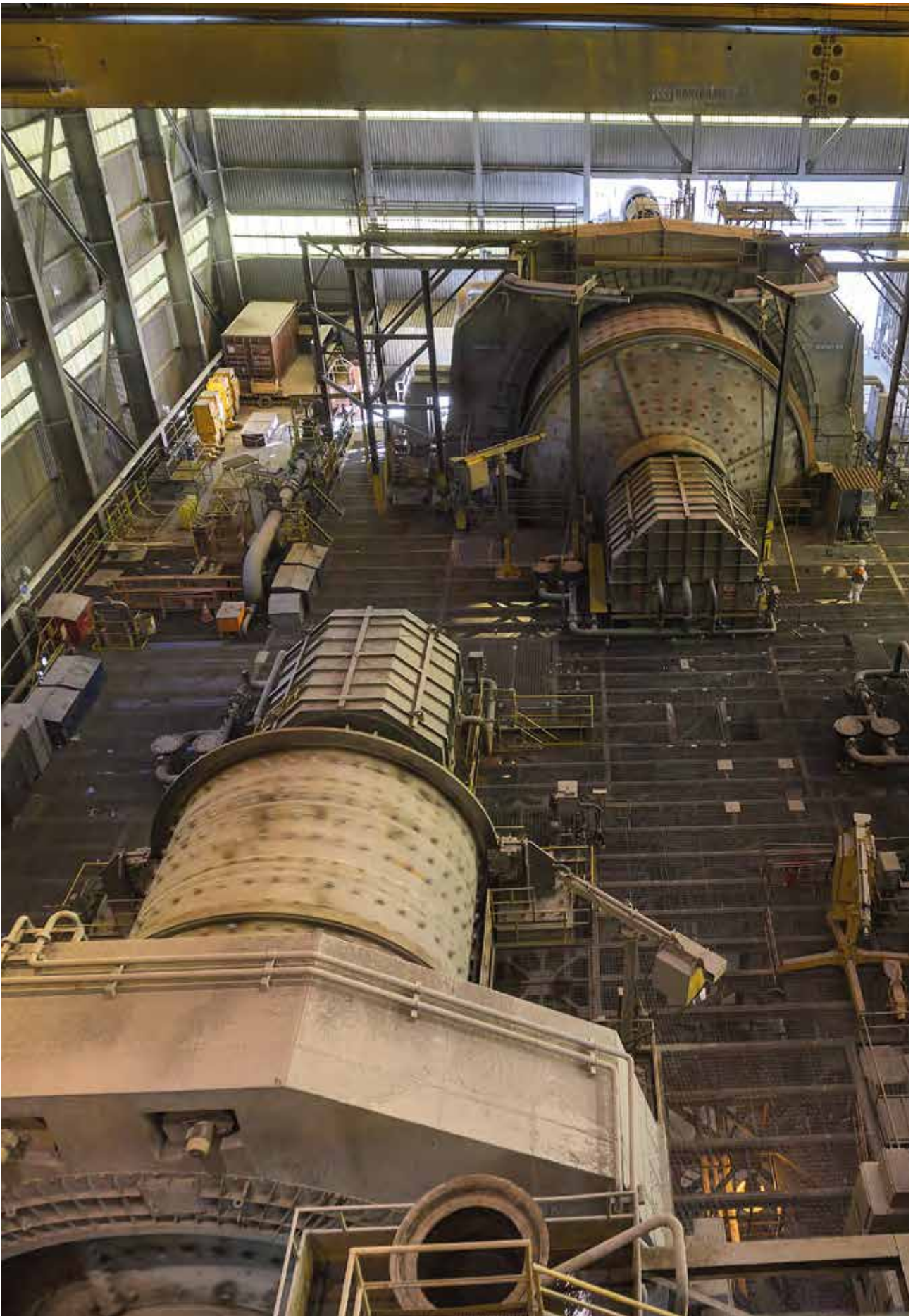


SUSTAINABILITY OBJECTIVES		
2018 OBJECTIVES	STATUS AS OF 2018	2019 OBJECTIVES

LABOR PRACTICES		
Address the issue of human rights and incorporate this perspective with a long-term corporate sustainability approach.	<ul style="list-style-type: none"> <li>A training workshop on human rights and indigenous rights was held for managers, national and international standards were evaluated, a proposal on human rights and indigenous rights policies was prepared, an initial code of conduct for suppliers and a proposal to address sexual harassment among employees were drafted.</li> <li>In addition, an analysis and assessment of human rights risks related to physical security were carried out.</li> </ul>	<ul style="list-style-type: none"> <li>Formalize, disseminate and follow up defined Human Rights practices.</li> <li>Implement a gap analysis regarding the requirements of the social protection system (child labor, forced labor and discrimination).</li> </ul>
Define an explicit gender and diversity policy.	Gender issues were analyzed and evaluated from the point of view of discrimination and sexual harassment.	Formalize an explicit gender and diversity policy.
Improve the practices related to high performance teams, the supervisors program, e-learning, the organizational climate and culture program, MSC App (Phase II and III).	<ul style="list-style-type: none"> <li>Three high performance team workshops were conducted.</li> <li>Phase I of the Supervisors Program was completed - Soft Skills Training.</li> <li>Five E-learning courses were completed.</li> <li>Surveys on culture were conducted and the results were analyzed.</li> <li>Included in the Mobile APP: Stop Card, internal customer satisfaction survey.</li> </ul>	<ul style="list-style-type: none"> <li>Develop four high performance team workshops and follow up to one team.</li> <li>Follow up projects developed by supervisors.</li> <li>Put in place an automated system to register for presence-based courses.</li> <li>Develop the organizational climate and culture program - phase II.</li> <li>Implement the competency automation system.</li> </ul>
Life-Work Balance Program (activities to be carried out at the mine and in the offices in La Paz and Potosí, related to sports, culture, leisure and entertainment).	Sports activities were carried out on site, such as the MSC internal soccer championship and indoor soccer in La Paz, as well as a recognition for the workers on the 1st of May.	Leisure activities, sports events, cultural presentations and showrooms will be held.







SAG mill and ball mills

## 2.4 Commitment to external initiatives (102-12)

As a result of our management practices, we have been granted the following nationally and internationally recognized external certifications, frameworks or standards:

The Universal Declaration of Human Rights of the United Nations	Adheres to the principles contained therein and which are integrated into the Constitution of the Plurinational State of Bolivia.
ISO 14001 - Environmental Management	Certification received in 2010 and maintained to date. Updated in 2018.
ISO 9001 - Quality Management	Certification received in 2010 and maintained to date. Updated in 2018.
OHSAS 18001 - Occupational Health and Safety Management	Certification received in 2010 and maintained to date. Updated in 2018.
ISO / IEC 27001- Information Security	Certification received in 2014 and maintained to date. Updated in 2018.
ISO / IEC 17025 - Technical Competence of the Chemical Laboratory	Accreditation received in 2008 and maintained to date. Updated in 2018.
NB 512001 - Healthy Workplace	Certification received in 2014 and maintained to date. Updated in 2018.
IS-BAO - Good Practices in air Operations and Maintenance	Certification received in 2014 and maintained to date. Updated in 2018.
AMO - Approved Maintenance Organization for MSC's Airplanes	Certification received in 2015 and maintained to date.
AEO - Authorized Economic Operator. Security in the international logistics chain as an Exporter	Certification received in 2016 and maintained to date. Updated in 2018.
AEO - Authorized Economic Operator. Security in the international logistics chain as an Importer	Certification received in 2017 and maintained to date.
National & International Labor Standards	Bolivian standards are followed, as are ILO (International Labor Organization) conventions.
GRI Standards - Global Reporting Initiative Sustainability Reporting Guidelines	Adopted as the MSC sustainability reporting framework.

The relevant certificates are available on our website  
<http://www.minerasancristobal.com/v3/en/inicio/certifications/>





## 2.5 Memberships and associations (102-13)

As of December 2018, we are members or participate in the following business associations:

LEVEL	BUSINESS OR SECTORAL ASSOCIATION	POSITION
National	National Association of Medium-sized Miners	Member of the Board
National	Confederation of Private Entrepreneurs of Bolivia	Member of the Board through the Association of Medium-sized Miners
National	National Chamber of Exporters of Bolivia	Participant as a member of the Chamber of Exporters of La Paz
National	National Chamber of Commerce	Participant
National	National Chamber of Industries	Participant
Regional	Chamber of Exporters of La Paz	Member of the Board
Regional	Federation of Entrepreneurs of Potosí	Member of the Board
International	International Council on Mining and Metals (ICMM)	Member

In 2018 we successfully completed the process of joining the International Council on Mining and Metals (ICMM). We are therefore aligned to the ten principles and eight position statements promoted by this institution.

This admission represents an important step not only for Minera San Cristóbal, but also for Bolivia, and reflects our company's commitment to international standards concerning sustainable development, ethical corporate behavior and respect for human rights.



The International Council on Mining and Metals (ICMM) is an international organization dedicated to a safe, fair and sustainable mining and metals industry, bringing together more than 27 mining and metals companies and over 30 regional and commodities associations. We, as members of this council, strengthen environmental and social performance of the sector, and we serve as a catalyst for change, enhancing mining's contribution to society.

This report reflects the activities we developed through our Management System during 2018,

with the aim of improving alignment with the ICMM principles and position statements on issues such as comprehensive risk management, the integrated approach to human rights, biodiversity and climate change.

The graph shows how Minera San Cristóbal has integrated the ICMM principles and position statements that are in turn aligned with the United Nations sustainable development goals into its Management System.



Dome and lime silo



MINERA SAN CRISTÓBAL S.A.



# 3

## Economic performance and contributions

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Left: Bernabé Villafuerte  
Right: Andrés Martínez



## Approach

During 2018, our revenues from concentrate sales decreased by 5.5% compared to 2017. This decrease was due to the effect of the fall in prices on the international market and the decrease in the volume of concentrate sales.

At the end of the year, profits decreased by 90% compared to 2017 due to aspects such as the decrease in revenues from concentrate sales and the increase in operating costs related to the wage increase and payment of the second end-of-year bonus in accordance with legal provisions, an increase of the price of diesel, the higher cost of electrical

and mechanical parts for scheduled maintenance at the mineral processing plant, and an increase of the corporate income tax caused by differences between the income for accounting purposes and the income for tax purposes.

The working capital generated during 2018 has increased by 9% compared to 2017, due to the growth in our availability, which was caused by the collection in concentrate sales, a greater recovery from Tax Refund Certificates (CEDEIMs) and the settlement of short-term investments.

No fines or other monetary penalties for violating laws or regulations were imposed on us (419-1).

## 3.1 Economic performance (201-1)

Below are the comparative data for the last four calendar years:

Economic performance - Minera San Cristobal S.A. (Bolivia)				
	Million US\$			
<b>Generated economic value</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
Operating revenues	441.2	631.8	892.8	843.5
Financial revenues	0.1	0.2	2.6	10.7
Non-operating revenues	11.1	10.0	8.5	9.1
<b>Total generated economic value (1)</b>	<b>452.5</b>	<b>641.9</b>	<b>903.9</b>	<b>863.4</b>
(1) Revenues from concentrate sales net of treatment and freight costs. Revenues from interest earned on short-term investments. Revenues from exchange rate gains.				
	Million US\$			
<b>Distributed economic value</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>
Operating costs	219.9	188.1	206.3	217.5
Wages and benefits	76.0	78.1	79.6	90.4
Capital expenditure	13.1	7.2	10.9	9.6
Financial expenditures	7.0	8.0	7.8	8.1
Payments to capital providers (owners)	117.0	70.0	100.0	200.0
Payments to government (taxes)	62.4	248.2	193.3	254.9
Community investments	0.8	0.9	1.7	1.0
<b>Distributed economic value (2)</b>	<b>496.1</b>	<b>600.5</b>	<b>599.7</b>	<b>781.4</b>
<b>Total retained economic value (3)</b>	<b>(43.6)</b>	<b>41.4</b>	<b>304.3</b>	<b>82.0</b>
(2) Operating costs: Payments to suppliers of goods and services for normal development of the operation. Wages and benefits: Amount distributed among the workers through the payment of salaries, social security contributions, bonuses, social benefits and health. Capital expenditure: Investments in capital goods that contribute to development of the operation. Financial expenditures: Obligations resulting from interests on bank loans. Payments to capital providers: Dividends paid to company shareholders. Payments to government: Company contributions to the tax authority through payment of the corporate income tax, the payment of royalties, mining surface rental fees and other taxes. Community investments: Contributions for social programs, sponsorships and donations.				
(3) Retained economic value: The difference between the generated economic value and the distributed economic value, which will be reinvested in the company to ensure continuity of the operations. This difference includes depreciations and amortizations, as well as the profit of the year.				
Re-expression note: The information presented from the previous years has been modified according to our current standards proposed by the GRI.				

It should be emphasized that the comparative data with previous years may vary with respect to previous reports, specifically with regard to financial data, since they were reported based on the fiscal year (October 1st to September 30th) (102-48, 102-49)<sup>4</sup>.

The information on economic performance contained in this report comes from internally audited accounts; financial management is subject to both internal and external verification because of its relevance to us. Internally, we conduct random reviews, through an annual program of control evaluations, which we use for quarterly verification of the effectiveness of internal controls designed to ensure the integrity, exposure, validity and accuracy of the financial information. Externally, the financial information is audited to ensure that the information presented in the Financial Statements issued as at March and September of the corporate and local years, respectively, is reasonable.

### 3.2 Indirect economic impact (203-1, 203-2)

At MSC we want our presence to generate well-being in the communities of the region, which will also have a positive impact at the national level. That is why we carry out various projects that create a significant indirect economic impact in the region. From the initial stages of development and construction of the San Cristóbal mine, we have fully funded the construction of more than 200 kilometers of roads and bridges, 172 kilometers of electric transmission lines and 65 kilometers of railways. From the beginning to date, these investments have enhanced mobility, improved communications and greater integration of the communities in the region, the department of Potosí and the country.

Over time, we have supported studies to extract, transport and treat water, as well as to build connections and install tanks to supply water to the communities, for the benefit of hundreds of families. In 2018 we continued to take charge of the continuous maintenance and operation of the water, sewerage and landfill systems. In addition, we took responsibility for the sustained supply of electricity to the communities.

In 2018, we invested US\$ 1 million in the maintenance of roads in the area around the San Cristóbal Mine and of the main roads to the Avaroa border crossing, which is located on the border with Chile. Also in the same year, we focused our activities to mitigate the impacts generated by the mining operations on the affected families primarily on the construction of reservoirs to harvest rainwater for consumption by the camelids and to recover natural water springs.

With regard to support for basic services, we have made investments in improving operation of the pumping systems of the drinking water wells, as well as in strengthening the water committees of the communities of San Cristóbal and Culpina K.

In education, we continued to support the implementation of productive socio-communal projects and training for different entrepreneurs in tourism (gastronomy, handicrafts, garments), quinoa and camelids production, as part of the alternative education program of the Ministry of Education of the Plurinational State of Bolivia.

In terms of productive development, we completed the construction of the slaughterhouse and the meat derivatives processing plant in the community of San Cristóbal and we also purchased part of the equipment.

### 3.3 Local procurement and our relationship with local suppliers (204-1)

We make efforts to benefit national and local suppliers with procurement for our operations. Therefore, we give priority to local community providers so that they could develop and strengthen their capacities. Our contractors submit relevant certificates and documents in accordance with the Supplier Qualification process through public tenders, quotations and direct invitation.

Likewise, we ensure that our contractors comply with the policies and standards related to quality, health, safety and environment implemented by our company, as well as that they respect the relationship with our communities.

<sup>4</sup> The Financial Statements as of 30 September 2018 submitted to the National Tax Service (SIN) only concern the activities of Minera San Cristóbal S.A. and do not include any other entity (102-45).

The contracts with our suppliers are subject to clauses of the MSC Code of Ethics and Business Conduct, as well as anti-corruption and anti-bribery clauses. We conduct regular monitoring and performance evaluations to verify whether the quality of the services provided is in accordance with the expected level.

In 2018, we invested an amount of approximately US\$ 326.1 million in the combined purchase of goods and services, i.e. more than in 2017 (US\$ 278.4 million). Of this amount, the procurement of goods accounted for around US\$ 109.4 million, US\$ 40 million (37%) of which from national and local sources. Because the volumes and specifications required for certain supplies for operations are not produced in the local market, most of these are purchased in the international market, especially diesel, explosives, reagents and mill parts.

In terms of services (transportation, electricity, food, maintenance, etc.), we invested an amount of US\$ 216.8 million. While services purchased abroad make up 42% of total procurement, the rest of the services are procured within the country. Regarding the geographical composition of our service providers, 6% of all services (US\$ 12.9 million) were procured in the communities of the direct influence area (Culpina K, San Cristóbal, Río Grande and Vila Vila) and 52% of the total services (US\$ 113.1 million) from the rest of the country. This means that 58% of the services are purchased from national suppliers, including local communities.

Beyond the economic benefits for contractors of goods and services in the region, we continue to promote the work of local suppliers, with proper registration, formalization and support for the continuous improvement of their performance.

Below is the percentage of procurement of goods and services, by origin.

### Acquisition of goods

Procurement of Goods (US\$)	Communities	%	National	%	International	%
2015	52,817	< 1%	32,673,785	34%	63,963,935	66%
2016	28,744	< 1%	30,885,721	38%	50,875,080	62%
2017	26,554	< 1%	30,894,776	36%	54,876,103	64%
2018	26,948	< 1%	40,049,404	37%	69,276,785	63%

### Procurement of services

Procurement of Services (US\$)	Communities	%	National	%	International	%
2015	8,498,324	4%	113,682,770	60%	68,855,974	36%
2016	8,286,995	4%	108,624,528	55%	81,915,186	41%
2017	10,430,874	5%	96,127,143	50%	86,065,185	45%
2018	12,907,596	6%	113,106,509	52%	90,773,645	42%

## 3.4 Community investment <sup>(203-1)</sup>

We carry out our operations in compliance with the principles of Sustainable Development and within this framework we support local economic development initiatives of the communities through our Social Responsibility policy.

We coordinate proposals and projects for community development in cooperation with the Consultative Council Los López San Cristóbal, which is composed of community leaders and authorities from San Cristóbal, Culpina K, Vila Vila and Río Grande.

We act as facilitators to develop self-sufficient and independent ventures, parallel to the mining activities, with a view to improving the living conditions of the inhabitants of the communities in the area of influence.

Together with the Consultative Council Los López San Cristóbal, and within the framework of the strategic plan, we carry out the following actions:

- Manage strategic alliances with public, private, national and international governmental organizations that put in place conditions for implementing local development.





- Provide technical assistance to productive and social organizations in the communities to strengthen organizational management.
- Support business initiatives for the generation of new and better jobs.

Within the community investment programs, we carry out the following actions:

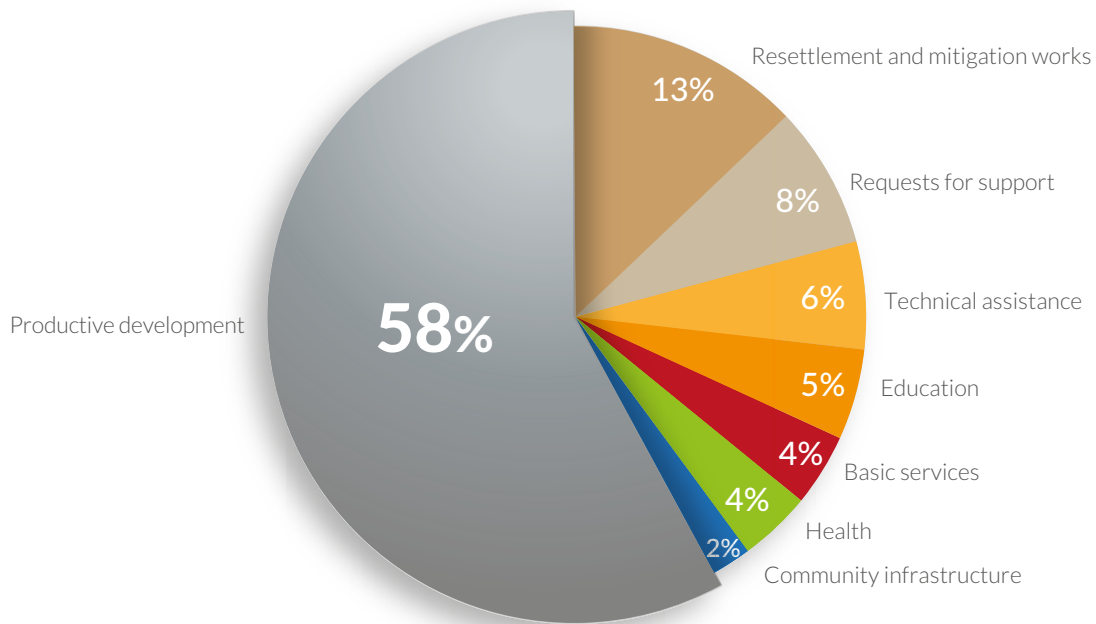
- Improve education and health services.
- Optimize agricultural activities and opportunities in the tourism sector.
- Promote the creation of micro and small businesses.
- Support the maintenance of uses and customs.

## INVESTMENTS IN COMMUNITIES

	US\$ 2016	US\$ 2017	US\$ 2018
 <b>PROJECT/ACTIVITY</b>			
Technical assistance	83,347	100,468	71,371
Response to requests, support for events and social investment projects	79,164	242,119	89,731
Improvement of community infrastructure (maintenance and operation of basic services, remodeling of the central square, housing, extension of the micro-irrigation system, drinking water)	80,710	26,215	23,537
Resettlement and mitigation works	147,346	252,670	149,223
Improvement of basic services (water harvesting, modification of the power line)	970,794	334,551	44,923
 <b>EDUCATION</b>			
Students (scholarships for higher education, support for alternative education, schools, Science Olympiad, etc.)	32,384	42,146	50,497
Teacher training	5,760	-	-
 <b>HEALTH</b>			
Support for the elderly, social project, communication and environment	13,474	13,457	12,132
Promotion of the health network, second-level hospital	19,188	13,523	7,313
Psychological support with a specialist	25,969	22,418	25,968
 <b>PRODUCTIVE DEVELOPMENT</b>			
Development and implementation of projects	361,602	1,028,743	439,688
Support for social organizations to participate in events in the province (organizational strengthening, logistics, etc.)	72,719	204,664	204,077
<b>TOTAL</b>	<b>1,892,456*</b>	<b>2,280,973*</b>	<b>1,118,460*</b>

\* The difference in these values compared to the line "Investments in communities" in the table in chapter "Economic performance" is due to the fact that the costs of some activities were appropriated to different cost centers.

## COMPONENTS OF COMMUNITY INVESTMENT 2018



The decrease in expenditures in 2018 compared to 2017 is mainly due to the following reasons:

- In response to requests, in 2017 we conducted more actions to support communities for civil infrastructure works and productive projects in relation to 2018.
- In 2018 we did not build impact mitigation works for affected families as we did in 2017 in exchange for using land for expanding our area of operations.
- In 2017 we made greater investments in basic services, primarily in the project to modify the new electricity grid of San Cristóbal and the external maintenance of drinking water wells, while in 2018 we did not have any major basic services projects; on the contrary, we purchased equipment to reduce costs, e.g. for maintenance of the wells by the Water Committees of San Cristóbal and Culpina K, in order to foment sustainability.
- With regard to the productive development projects, in 2017 we gave financial compensation to the community of San Cristóbal for the use of land to expand our area of operations. The community

is using the money for different local development projects. The support for the construction of productive infrastructure remained similar to that provided in 2017.

### 3.5 Investments and total expenses on environmental protection

The operational costs and investments in prevention, mitigation and remediation of environmental impacts included topsoil removal activities at the mine and tailings deposit; civil works in the mine drainage system; irrigation and chemical stabilization of roads (bischofite application) to avoid dust dispersion; cleaning and maintenance of the dams in the Toldos ravine; and operation and maintenance of the tailings deposit water recovery system.

The costs of environmental prevention management include equipment calibration, monitoring and measurement, laboratory analysis, maintenance of meteorological stations, and environmental consultancies.

Environmental protection investments	2015	2016	2017	2018
	US\$	US\$	US\$	US\$
Operational costs and investments in prevention, mitigation and remediation of environmental impacts.	2,558,378	1,600,408	4,315,978	4,379,970
Rehabilitation, replanting and maintenance of areas disturbed by mining operations, within and outside the area of operations.	-	140,625	147,876	182,614
Environmental prevention and management costs.	104,369	114,728	214,646	205,614
<b>TOTAL</b>	<b>2,662,747</b>	<b>1,855,761</b>	<b>4,678,500</b>	<b>4,768,198</b>

In 2018, the costs of the different items remain quite close to those of the year before. The most significant variation between 2016 and 2017 is that referred to “operational costs and investments in prevention, mitigation and remediation of

environmental impacts”; this is mainly due to the fact that in 2016 there was a change of supplier and so we did not have the service from July to September. In addition, only one-third of the planned time was worked in October.





Tailings thickener



MINERA SAN CRISTÓBAL S.A.



# 4

## Ethics and business conduct

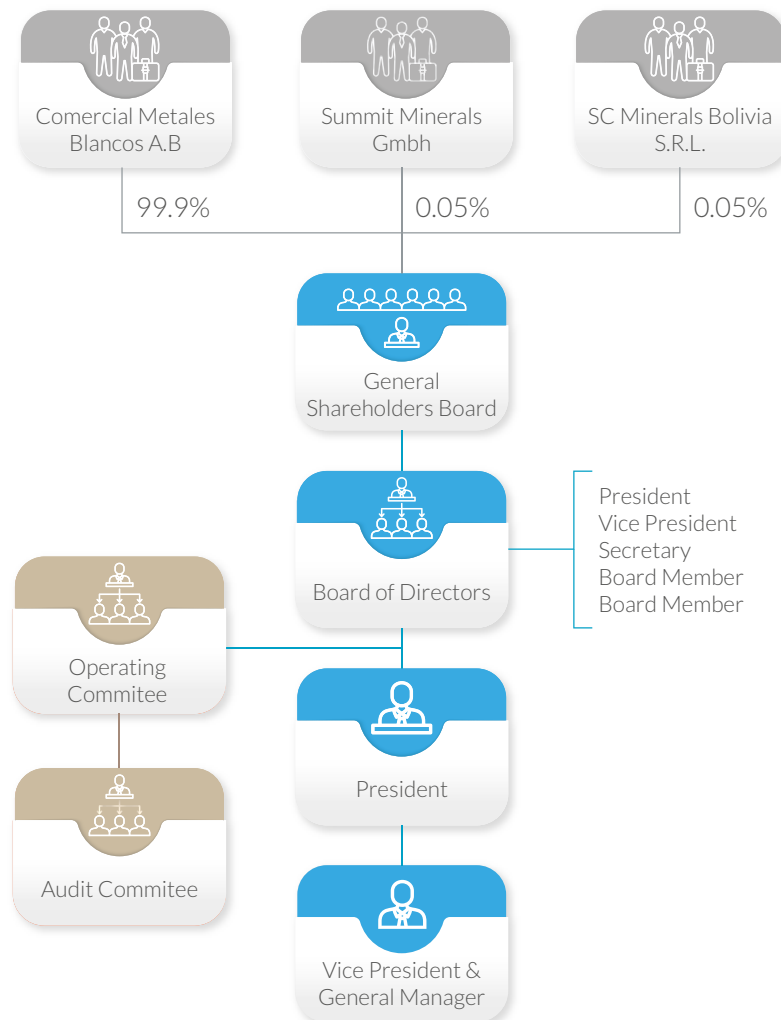
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Fabiola Coaquira

## 4.1 Corporate governance structure

Minera San Cristóbal S.A. is a company incorporated in Bolivia (102-5) in 2000. As of March 2009, it is a wholly-owned subsidiary of the Japanese Sumitomo Corporation, a multi-sector business conglomerate headquartered in Japan.



According to Bolivian legislation and MSC's bylaws (102-18), the General Meeting of Shareholders is the highest decision-making body of the company. This corporate government body holds ordinary or extraordinary meetings to decide on fundamental matters regarding sustainable development, the company budget, new mining developments, internal control, operations and others.

The company is administered by a Board of Directors whose members are appointed by the General Meeting of Shareholders. The five appointed members of the Board are the President, Vice President, Secretary

and two Board Members. The President is a resident in Bolivia during his tenure.

There is an Operational Committee composed of three members designated by the Board of Directors, which has powers to make high-level decisions related to MSC operations which are validated by the Board of Directors.

Our organizational operational structure is made up of the Vice President & General Manager and four Directors, who are responsible for managing economic, environmental and social issues (102-20).



## Our values (102-16)

Our values inspire us and are the compass guiding us to work in a balanced manner and together with our stakeholders in order to secure the best possible performance results.

Our values are available on our website <https://www.minerasancristobal.com/v3/en/inicio/our-company/corporate-values/>

## 4.2 Comprehensive risk management

The materiality assessment is the primary input for our “Business Planning and Review” and “Risk Management” processes. Accordingly, our executive team meets annually to review strategic risks and uses this information as input for strategic planning, which will ultimately result in the set of strategic objectives and goals of the business (Strategic Plan) (102-29) (102-30) (102-31).

The main risks identified in 2018 were (102-15):

- Legal framework (agreement with the State)
- Taxes (RITEX, transfer pricing)
- Market changes
- International sanctions
- Nationalization/Expropriation
- Closure plan
- Port interruption (tsunami)
- Tensions at the border
- Prohibition of cyanide

Based on the events that have occurred throughout our operations and considering the concerns and complaints of our various stakeholders, we have been able to identify five social risks related to the communities in the direct influence area.

- Two risks are related to the environmental factor: management of the Wila Khara tailings deposit and the quinoa crops from the community of Culpina K, close to the water well field for the mining operation. In both cases, follow-up actions were established, such as information meetings and regular visits with local authorities and commissions.

- Two other risks are related to the social factor. The first one is related to basic services: the community of Culpina K was unable to connect to the public rural electrification network. The second one is related to the Education Project of the Consultative Council: it has not been possible for the assessment of the educational quality of the schools in the area of influence of MSC to materialize. In the first case, we worked in coordination with the present authorities to support them in their efforts with the energy service provider for the community to be connected to the power grid. In the second case, we held various meetings with community authorities, local and district education authorities, as well as with parents to explain the importance of the assessment to improve the quality of education.
- And the last case is related to the economic factor: the delays in operation of the plant for removing saponin from organic quinoa. In this case, the actions focused on holding periodic meetings with authorities of the community of Culpina K, as well as with executives of the producers' organization (APRACCUK) to assist in the procedure to access electricity supply and commissioning of the plant.

### Risk committee

As part of the ongoing improvements, in the reporting year we set up the risk committee, whose members are the Superintendents of all areas. The central objective is to implement an integrated management framework to identify, assess and manage risks and uncertainties in relation to internal and external events or scenarios that may affect the organization's ability to achieve its strategic objectives. An additional objective is to create and protect the value of our shareholders and other stakeholders.

The comprehensive risk management model we developed is based on ISO 31000 and includes the following components:

- Context analysis
- Risk assessment (identification, analysis and estimation)
- Communication
- Risk management
- Monitoring and review
- Feedback

The Committee meets quarterly to evaluate the KRIs (Key risk indicators), evaluate progress of the (strategic and operational) risk matrices and the respective control and/or mitigation measures. The reports are submitted to the Directors and Vice President & General Manager.

#### 4.3 Code of ethics and business conduct (102-17)

Our activities are carried out with honesty and integrity, and in accordance with ethical and legal principles, avoiding any act of corruption, i.e. any

act that violates the laws in effect and the ethical values of our company. To this end, a code of ethics and business conduct has been established which promotes:

- Honest and ethical conduct, including the ethical handling of actual or apparent conflicts of interest between personal and professional relationships.
- Compliance with applicable government laws, rules and regulations.
- Full, fair, accurate, timely and understandable disclosure in reports and documents which the company files or submits.



- Prompt internal reporting of violations of the Code to an appropriate person or persons identified in the Code.
- The immediate preparation of internal reports on violations of the Code for the appropriate person or persons identified in the Code.
- Accountability for adherence to the Code.
- Ethical procedures in all transactions with contractors, suppliers, customers, employees and others.
- Avoidance of situations where personal interests are, or appear to be, in conflict with the company's interests.
- Responsibility in using and protecting the company's assets, including property, equipment, facilities, funds and information.
- Confidentiality of nonpublic information and non-use of such information for personal gain.

Our code of ethics and business conduct also sets out the expectations related to the prevention of conflicts of interests (102-25), which are shared with all our employees on a recurring basis and as part of their job induction. We define a conflict of interest as situations in which personal interests interfere or may conflict in any way with the interests of the company or with the person's duties to the company.

## 4.4 Whistleblower regulation

It is our company's policy to comply with and require our Directors and employees to comply with all applicable regulations and legal requirements related to corporate reporting and financial disclosure, accounting and audit procedures, and other issues relating to fraud against shareholders. Each employee has a responsibility to help the company meet these requirements.

We consider that the working environment and respect for the people who work with us are a fundamental pillar for the performance of our company, which is why we have formal mechanisms consistent with ethics and integrity in the workplace, such as the Mutual Respect Policy, and the MSC Staff Complaints and Suggestions Instruction (102-17). These standards are shared with our employees

at the time of their hiring and contain instructions regarding the formal and confidential mechanism at their disposal to report breaches or possible breaches of the regulation. Breaches can be reported through the pertinent mechanisms or directly to the President or Vice President & General Manager, to any member of the executive team or to the Human Resources department (102-25, 102-33). Employees filing a complaint related to this policy shall not be discriminated against and shall not be subject to retaliation.

## 4.5 Anti-corruption/Anti-bribery

The fight against corruption and bribery in our only operation is frontal and unwavering. For this reason, we perform operational, financial and strategic risk analyses related specifically to the sectors in which there might be incidents related to corruption and bribery, defining the actions and internal controls needed to prevent them. No illegal actions were identified or reported in 2018 (205-1, 205-3).

On the other hand, we train our staff on issues of combating illegal practices, reinforcing these policies through regular workshops (205-2).

We do not tolerate any act of bribery or fraud by the Board of Directors, employees, contractors, suppliers or others. Thus, we take immediate and serious action against those responsible, regardless of their years of service or their position in the company.

## 4.6 Human rights (103-2)

We adhere to the human rights principles laid down in the Constitution of the Plurinational State of Bolivia, the Universal Declaration of Human Rights of the United Nations, the covenants of the International Labor Organization and the ICMC principles.

We are committed to honest and transparent communications with our stakeholders and we act with respect for the cultural heritage, traditions and customs of the communities where we operate.

In order to understand the context and analyze and address the issues necessary for a comprehensive



human rights management during 2018, we conducted a series of activities in two phases, as detailed below:

In the first phase, we included the following elements:

- Analysis of operational processes and background information.
- Training workshop on human rights and indigenous rights for managers.
- Analysis of MSC's policies and standards in effect, comparing them with relevant international human rights and indigenous rights standards.
- Assessment of the extent to which Bolivian legal requirements comply with international human rights laws and standards.
- Analysis of sustainability issues and current and historical impacts on the operation of the company, and an analysis of the extent to which this has implications for human rights.
- Identification of possible adverse effects and risks.

In this phase, we also made an assessment of both national and international regulations.

At the national level, we made an assessment of the following documents:

- Constitution of the Plurinational State of Bolivia (2009).
- Bolivian Cultural Heritage Law 530.
- Mining and Metallurgy Law 535.
- Environmental Law 1333.
- General Law 16998 on Occupational Hygiene, Safety and Welfare, and its Regulations.
- General labor law standards, regulations and amendments.
- Others.

At the international level, we made an assessment of the following documents:

- International Bill of Human Rights, consisting of:
  - Universal Declaration of Human Rights (1948).
  - International Covenant on Civil and Political Rights (1966).
  - International Covenant on Economic, Social and Cultural Rights (1966).

- International Labor Organization (ILO) Declaration on Fundamental Principles and Rights at Work (1998).

- ILO Convention No. 169 on Indigenous and Tribal Peoples (1989) and United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) (2007).

- Voluntary Principles on Security and Human Rights (2000) regarding Human Rights and security measures.

- United Nations Guiding Principles on Business and Human Rights (UNGPs).

In general, within this assessment we have not identified any specific impact on human rights that is not being monitored.

In the second phase, we included the following elements:

- Drafting of a proposal for the public document on human rights and indigenous rights policies.

- Due diligence of human rights risks in MSC and in the supply chain, and proposed management measures to address such risks.

- Proposal for the integration of human rights risk management in the business management processes.

- Initial supplier code of conduct.

- Evaluation and proposal to address sexual harassment among employees.

The opportunities for improvement identified in the second phase were shared with Management for the purposes of analysis, an action plan and implementation.

In addition, we conducted an assessment of human rights risks related to physical security, using the following standards as a reference:

- Voluntary Principles on Security and Human Rights (VPSHR).

- United Nations Guiding Principles on Business and Human Rights (UNGPs).

- International Code of Conduct for Private Security Service Providers (ICoC).

- International Finance Corporation (IFC) Performance Standard Four: Community Health, Safety, and Security.

The following opportunities for improvement were suggested:

- Possible conflicts of interest between current security service providers.
- Training in the Voluntary Principles on Security and Human Rights, including the use of force.

- Strengthening the risk assessment from a human rights perspective.

The proposed improvements were evaluated and we have assigned people responsible and tasks to ensure proper implementation.





Concentrate loading yard



MINERA SAN CRISTÓBAL S.A.



# Our people

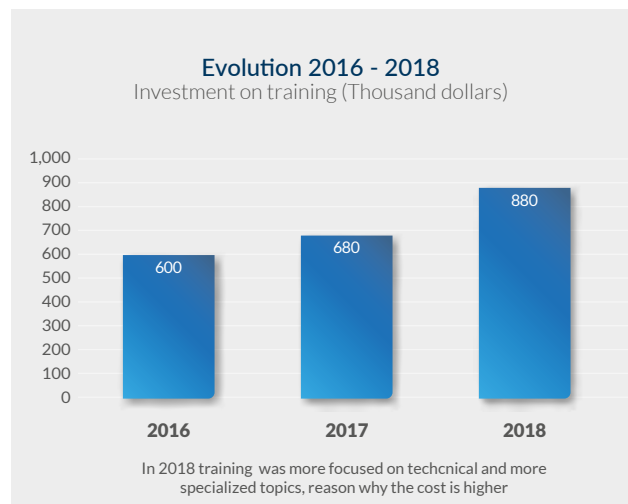
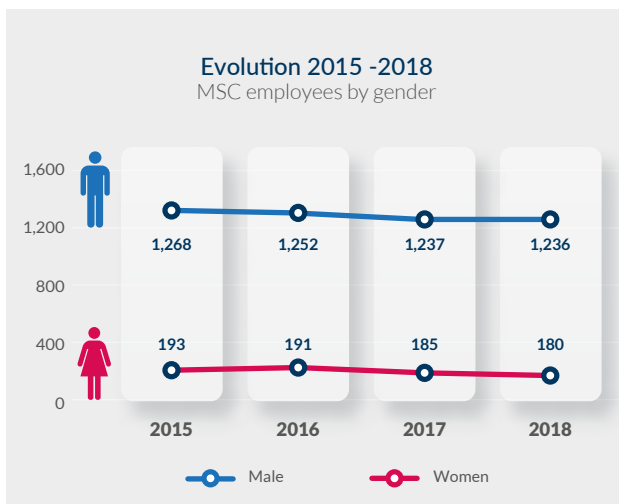
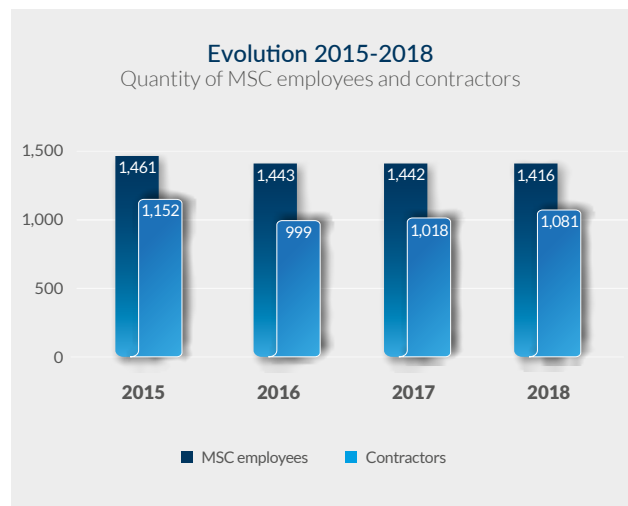
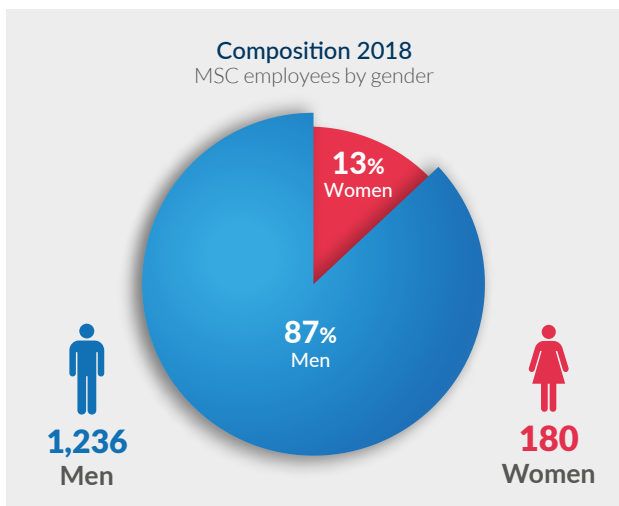
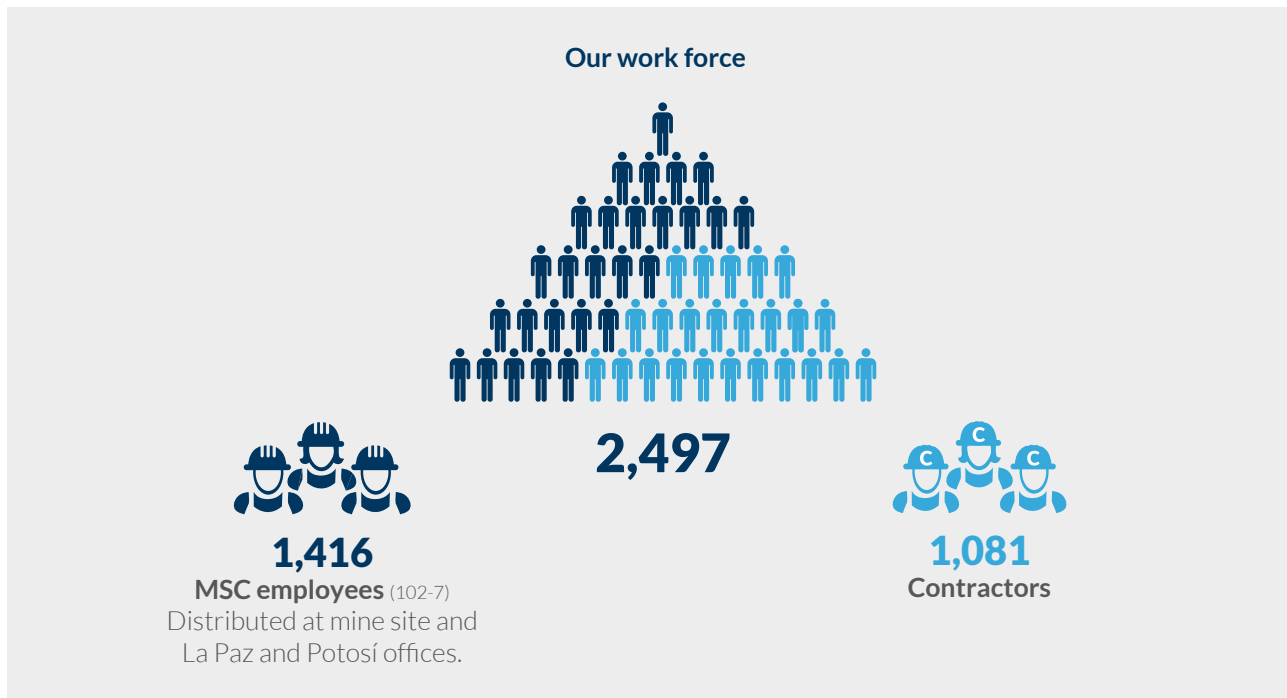
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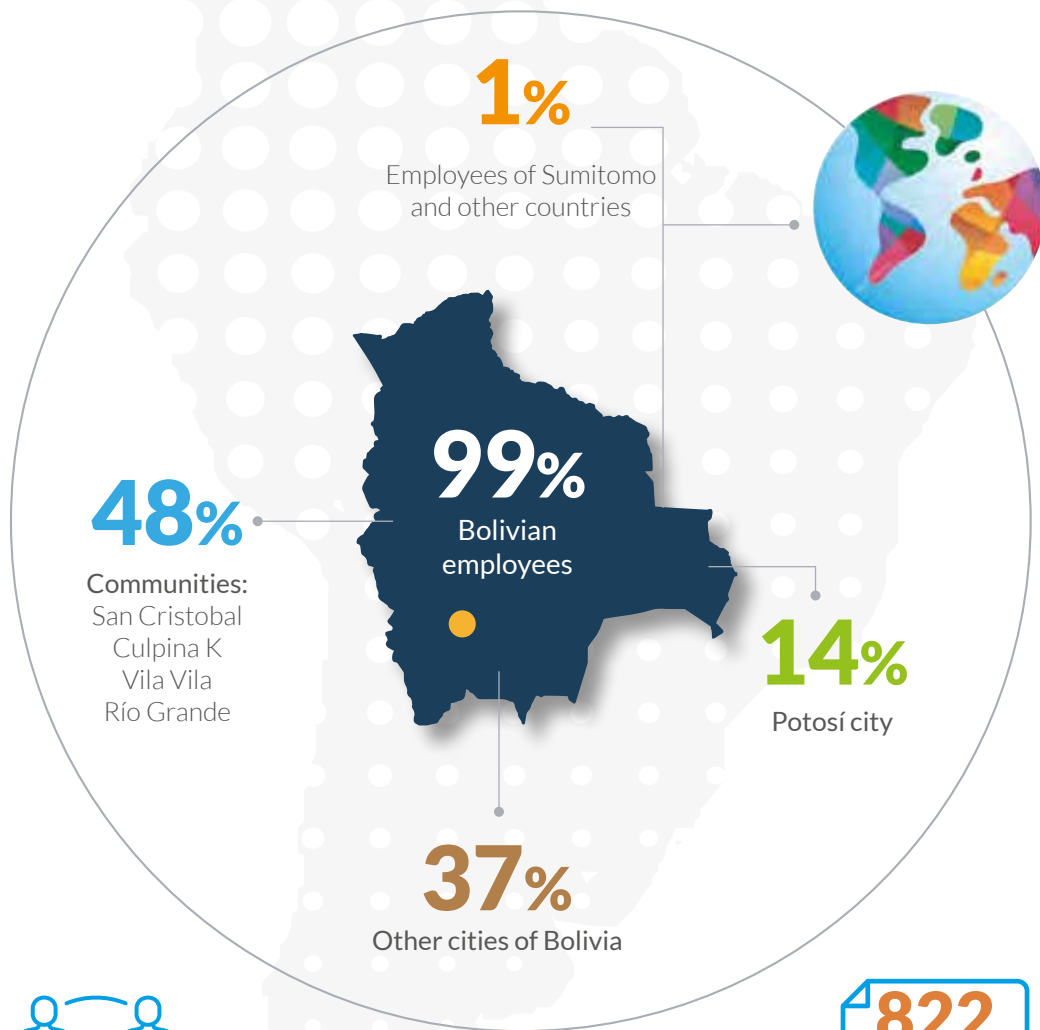
Mirko Gumucio



## WORK FORCE CHARACTERISTICS



## Hires



### Incidents or infringements related to human rights

In 2018, there were no claims due to improper work practices.



### MSC workers

Workers are covered under the collective agreement signed with the labor union (102-41), representing 58% of the total of employees.

## Programs (San Cristóbal, Culpina K and Vila Vila)

### Care program to the elderly



**103**  
elderly

100% received attention in 2018

### Control program of the healthy child



**24**  
Children

of 5 years old or less on the day care of San Cristóbal

### Health program for school



**857**  
boys and girls  
were evaluated in 2018

### Healthy and safe maternity program



**87**  
Pregnant women  
were attended in 2018



We believe that our workforce is the most important asset we have. For this reason, we implement ongoing training and development programs, so that our employees have a better quality of life.

Besides contributing to the creation of quality employment in Bolivia, we seek the best possible working conditions for our employees, providing them with a competitive salary, constant training, decent professional development opportunities, job safety, occupational health, as well as a warm environment characterized by our values, ethical principles and equal opportunities.

Within the corporate culture that characterizes us, we interact regularly with our stakeholders, including the trade union, contractors, the Ministry of Labor, the Ministry of Health and the Migration Office, among others, which requires a permanent update on issues related to current legal provisions, as well as a smooth communication with the above-mentioned institutions.

Although the positions are available to all, without any discrimination, the difference in percentage of MSC employees by gender is due to the fact that at each level there are sub-levels, in which there has been little participation by women.

However, we are proud to have several female workers engaged in operational tasks traditionally considered

exclusively male ones, at different organizational levels and in different operational areas.

Compared to 2017, there is a 0.42% reduction in staff, mainly due to decisions taken by the employees themselves. However, the comparative rate between men and women remains unchanged.

## 5.1 Workforce characteristics

At the end of 2018, we had 1,416 employees distributed in the camp and offices in the cities of Potosí and La Paz, as well as 1,081 contractors. Thus, we reached a total of 2,497 workers (102-8).

## 5.2 Local recruitment

We prioritize the hiring of personnel from the communities in the area of direct influence to occupy the operational positions, by communicating our requirements to the local administrative authorities of the surrounding communities. Once this source has been exhausted, and with the aim of finding qualified personnel, we broaden the search to the regional level and, subsequently, to the national level.

Foreign staff account for 1% and include employees from different countries and mainly from Sumitomo,



who join our company with their highly experienced and knowledgeable profiles to carry out different operations. Among those arriving from Sumitomo, there are also employees who are in the learning stage.

#### Workers of MSC (Minera San Cristóbal), by place of residence (102-8)

	2015	2016	2017	2018
Communities	49%	49%	48%	48%
Potosí	14%	14%	15%	14%
Other cities	36%	36%	36%	37%
Other countries	1%	1%	1%	1%

Our executive level consists of Directors, Managers and Superintendents. Among the representatives at the executive level, one superintendent comes from the local communities in the company's area of influence, accounting for 1.9% of the executive level (202-2).

## 5.3 Gender equality

We comply with existing laws and regulations regarding equal opportunities for men and women and equal pay according to the complexity of the work performed; however, we do not yet have formal policies or procedures regarding gender equality in recruitment.

In 2018, the salary of female workers reached 80.3% compared to that of male workers. In executive positions, women's wages are 65% compared to men's wages, and in supervisory positions, the ratio of women's wages to men's wages is 100.3%. (405-2). In general, the differences are due to the particular characteristics of the pay range, different levels of responsibility and differences in the number of staff, both among men and women.

#### MSC employees by place of residence (405-1)

Place of residence	2015				2016				2017				2018			
	Executive	Supervisor	Employee	Worker	Executive	Supervisor	Employee	Worker	Executive	Supervisor	Employee	Worker	Executive	Supervisor	Employee	Worker
Community	0.07%	3.00%	8.00%	46.00%	0.07%	0.50%	8.39%	39.78%	0.07%	0.49%	9.35%	38.33%	0.07%	0.49%	9.68%	38.06%
Other cities	3.00%	7.00%	15.00%	12.00%	2.56%	4.57%	17.05%	11.50%	2.81%	4.92%	16.74%	11.67%	2.97%	5.30%	16.60%	11.58%
Potosí	0.21%	0.51%	2.00%	2.00%	0.28%	0.69%	4.50%	8.73%	0.21%	0.77%	4.50%	8.86%	0.21%	0.99%	4.17%	8.83%
Out of country	0.07%	0.14%	1.00%	0.00%	0.69%	0.14%	0.55%	0.00%	0.63%	0.21%	0.42%	0.00%	0.64%	0.07%	0.35%	0.00%
Total	3.35%	10.65%	26.00%	60.00%	3.60%	5.90%	30.49%	60.01%	3.73%	6.40%	31.01%	58.86%	3.88%	6.85%	30.79%	58.47%
Grand Total	100%				100%				100%				100%			

#### Number of MSC employees by place of residence and by sex (2018)

Level	Sex	Community	Outside the country	Other cities	Potosí	Total
Executive	Female			3		3
	Male	1	9	39	3	52
Employee	Female	24		69	13	106
	Male	113	5	166	46	330
Supervisor	Female			7		7
	Male	7	1	68	14	90
Worker	Female	61			3	64
	Male	478		164	122	764
Grand Total		684	15	516	201	1,416



## Changes in human resources

In 2018, we hired 15 men and 6 women. Thus, the annual turnover rate was 2.19% (401-1); the factors explaining the staff turnover were mainly personal reasons (change of job or city, start of own business, etc.).

We want to highlight some of the positive factors that contribute to the permanence of our staff, which is a factor for which we enjoy recognition in the sector and of which we are proud:

- We are among the companies that award the most competitive salaries in the country.
- The benefits package that we offer to our employees (full-time, temporary or under contract) includes rotating work shifts, highlighting that

in defined operational areas we have a work schedule of 7 by 7; a delegated health insurance; technical and specialized training; bonuses based on performance and the attainment of goals; commercial opportunities for the procurement of goods and services by staff at preferential prices; and recreational areas in the camp (401-2).

- We apply high health and safety standards for the protection of our employees.

For these reasons, we have a low annual turnover rate, which contributes positively to the overall performance of the company.



EMPLOYEE HIRES 2018						
Sex	Community	Outside the country	Other cities	Potosí	Total	%
WOMEN 			6		6	3.3%
MEN 	3	2	9	1	15	1.2%
TOTAL	3	2	15	1	21	1.5%
EMPLOYEE REDUCTIONS 2018						
Sex	Community	Outside the country	Other cities	Potosí	Total	%
WOMEN 	1	1	9		11	6.1%
MEN 	6	4	10	1	21	1.7%
TOTAL	7	5	19	1	32	2.3%

With regard to maternity benefits, we comply with the law in force in our country. Women have 45 days of leave before and 45 days after the date of birth of their baby. Men have four days of paternity leave on or around the date of their baby's birth. Both men and women receive 100% of their salary during the leave.

In 2018, the retention rate after maternity or paternity leave reached 100% (401-3); that is, the seven women who enjoyed maternity leave returned to work and so did the 26 men who enjoyed paternity leave.

## 5.4 Labor relations

Within labor relations, we support the right to freedom of association and collective bargaining. Minera San Cristóbal has a union. The Mixed Labor Union of Mine Workers of San Cristóbal was created in 2010 (407-1).

In 2018, out of the total workforce, 822 workers are covered under the collective bargaining agreement signed with the MSC workers' union (102-41). In relation to the previous year, there was a 1% reduction in the number of workers covered under the agreement. The executive and administrative levels are not part of the union structure.

Our approach to labor relations revolves around regular interaction with trade union leaders within a mutually respectful dialogue on workers' needs and joint resolution of any problems that may arise. The core characteristics of the negotiation processes are based on our values and are intended to provide solutions that benefit both parties.

## Agreements signed

Every year we negotiate the collective agreement, which includes general issues, such as salary increases, donations that the company can grant based on its financial and legal capacity, and proposals for improvements in health and safety issues, among others (403-4).

In 2018, the union submitted a set of demands and requests that did not materialize, as there was no negotiation on these issues. These demands are being considered in judicial instances. However, we concluded the Salary Increase Agreement and the Agreement on the Achievement of Goals for two years, covering years 2018 and 2019.

## Activities carried out without signing a collective agreement

We understand that the lack of signing a collective agreement cannot stop the search for improvement in the working conditions of our employees, which is why we conduct a series of activities, which we detail in the following actions:

- **Promotions program.** We have already developed an internal program for the promotion of workers, which we have again submitted to the Mixed Labor Union of Mine Workers of San Cristóbal.
- **Insurance.** We maintain private life insurance coverage, so our employees enjoy additional coverage above that stipulated by law.
- **Education and training.** We continue to grant university scholarships to the children of our workers, within the framework of the agreements reached.
- **Health.** We comply with the prescription of medication according to medical protocols and the National List of Essential Medicines (LINAME). However, to improve the quality of care as a company, we additionally dispense a large number of special medications that are outside the LINAME list.
- **Road maintenance.** We have developed an annual program which includes the maintenance and upgrade of our surrounding roads.
- **Sports.** To the extent of our possibilities and according to the established budgets, we support and promote sports activities such as soccer and wally, in which more than 400 employees take part.
- **Transport.** We have improved transport, increasing the number of buses on both internal routes and to the communities.
- **Professional development.** We organize the courses, workshops and trainings required according to the requirements of each area.
- **Protection.** We deliver PPE and work wear within the framework of MSC's standards and internal policies.
- **Union.** As in every year, we have respected the freedom of association, recognizing the

independence of the union and recognizing the members of the union who obtained the Ministerial Resolution accrediting them as being in permanent commission, as well as the national leaders.

- **Christmas.** In the same spirit set out in the previous point, we seek to improve the Christmas baskets for our collaborators and also the gifts for children under the age of twelve.
- **Carnival Ch'alla (traditional Bolivian custom).** We have established some guidelines for the organization of this activity, including the admission of wives and husbands and the non-consumption of alcohol in the mine, in offices and other facilities. At the same time, we seek to strengthen this custom with a focus on tradition and family.

In 2018 there were no strikes or lockouts affecting the operations of Minera San Cristóbal (MM4).

## 5.5 Employee grievance mechanisms

At MSC we have an open-door communications policy. We encourage our employees to directly share any problem or concern regarding the workplace with their direct supervisors. If the concern involves supervisors, they can take it to the level of a Superintendent or Director, so it would be solved according to the instruction manual for personnel complaints and suggestions. It is important to note that during 2018 no complaints about labor practices were filed through these mechanisms; however, we received communications within the framework of the open door policy, which were resolved (103-2).

Our Internal Regulations and the Code of Ethics and Business Conduct contain provisions to ensure and promote a harmonious human relationship at all levels of the company, which is strengthened by our Mutual Respect Policy, which clearly states that harassment, discrimination, verbal or physical actions threatening or intimidating others are not tolerated.

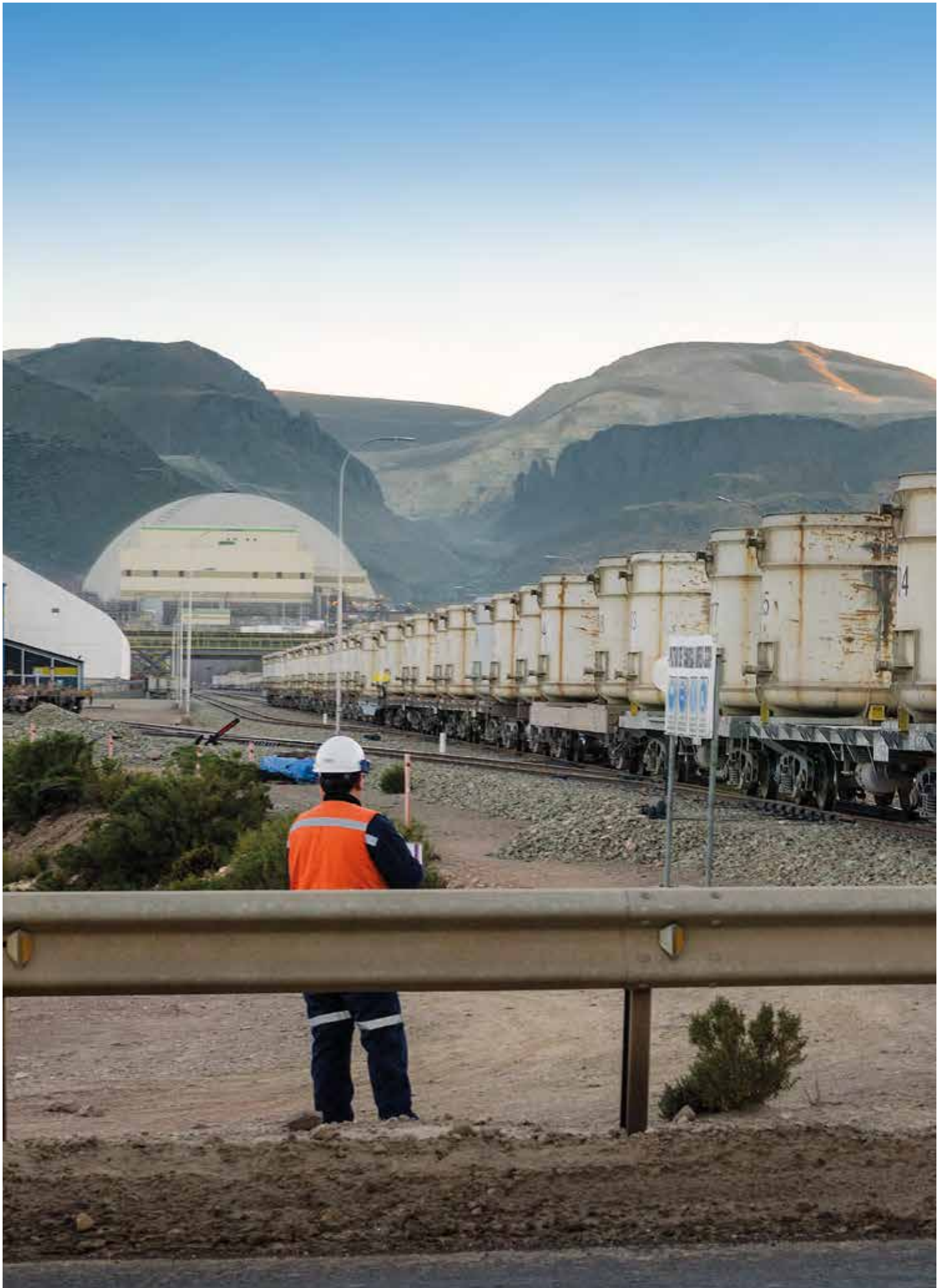
In 2018, there were cases of consultation that were resolved through the direct intervention of the Labor Relations Unit. Similarly, no incidents related to human rights violations (including discrimination) were reported through the formal complaint mechanisms. As part of our approach to



find procedures to deal with possible complaints of workplace abuse or harassment, we developed internal plans and forms to guarantee transparency and fairness, as well as protection of the person who makes the complaint, giving him or her the guarantee that he or she will be heard and that

we will follow up on his or her complaint while preserving his or her integrity. The right of defense of the person against whom the report is filed is also guaranteed and, according to constitutional rights, this person is considered innocent until proven otherwise (406-1,103-2).





Railcar and container maneuvering yard

As far as recruitment is concerned, we ensure that all candidates for jobs at MSC are of legal age, for which we request submission of the relevant supporting documents. While there is a risk of underage work in parts of the supply chain, we include legally binding provisions in this sense in the contracts with our product and service providers (408-1). Given this scenario, next year we will work on a gap analysis regarding the requirements of the Social Protection Management Standard (NB 113001), a Bolivian standard focused on strengthening human rights and mainly promoting a company management “free of child labor, forced labor and discrimination”.

## 5.6 Training and development

Training and support for the continuous improvement of our employees are critical to the success of our operations. For this reason, performance assessments, feedback and salary increases are also an integral part of our effort to promote a better workplace for human talent development.

In 2018, 98% of the workforce subject to annual performance assessments successfully and effectively completed this process, in accordance with established standards. The group of workers that we assess in this process is composed of

superintendents, supervisors and workers, of whom 174 women and 1,181 men were assessed. (404-3).

### Performance evaluation by gender and job category

Form type	Male	Female
Employee	100%	100%
Worker	99%	98%
Superintendent/Supervisor	82%	90%

The investment in 2018 for training was approximately US\$ 884,317, which is equivalent to 50,890 accumulated man/hours (404-1). Compared to the previous year, we increased our investment in training due to the high cost of specialized courses for mine and plant operational personnel.

	2016	2017	2018
Man/hours	74,146	71,717	50,890

The training we promote includes issues related to quality, health, safety and environment, aimed at the proper performance of specific functions. The number of courses for employees is defined according to the area of work and the jobs they perform.

### 2018 Training

CATEGORY	TOTAL TRAINING HOURS FOR MEN	TOTAL TRAINING HOURS FOR WOMEN	AVERAGE HOURS FOR MEN	AVERAGE HOURS FOR WOMEN	COMBINED AVERAGE TRAINING HOURS
Employees and workers	38,562.50	3,685	34.77	21.68	33.03
Executives	1,929	130	40.19	43.33	40.37
Supervisory positions	6,149	434	77.84	62	76.55
TOTAL	46,640.50	4,249	-	-	-
Contractors	23,154	3,138	13.21	16.26	13.51



## CASE STUDY

### Hydraulic cylinder repair bench

Three years ago, our Mine Maintenance area implemented the component repair workshop, whose main objectives are: the adoption of new techniques, the development of new skills in our staff and the reduction of costs associated with spare parts and labor and the logistics costs of shipping and returning parts of machinery of our heavy equipment fleet.

In order to improve the quality of repair of the hydraulic cylinders of our heavy equipment, the technical skills of our staff, and as part of our continuous improvement, we decided to purchase a “Hydraulic Cylinder Repair Bench”, which will allow us not only to meet these objectives, but also to be at the forefront of repair techniques for these types of components, as is the case in many workshops and mines around the world.

Using the Cylinder Repair Bench it is possible to *disassemble, assemble* and test repaired cylinders according to the manufacturer’s specifications. Within the operating range of the equipment, we can repair from small cylinders to larger Komatsu cylinders which, when extended, measure up to twelve meters and weigh 7.5 tons.

In years 2016, 2017 and 2018, we repaired a total of 381 major components of the powertrain, the brake system, the implements system and the hydraulic system, of which 133 were hydraulic cylinders of the different brands we use. These repairs account for 34.9% of the total repairs and the remaining percentage is related to engines, final drive transmissions, converters, brakes and others.



Our Hydraulic Cylinder Repair Bank not only involved acquisition of the equipment, but specialized training of the workshop staff was required as well, helping the team acquire new skills in this field. Thus, the group of workers and contractor personnel who are part of the Repairs Workshop participated in courses on the use and maintenance of equipment given by the factory staff (USA) who came to the site for the delivery and commissioning of the equipment. In this way, we emphasize our commitment to the professional and personal development of our team.

Currently, we have more than 300 cylinders in operation in the mine, the short and long term operation of which is guaranteed, thanks to the use and application of the repair equipment we currently have.



## 5.7 Health and safety

### Approach

The safety and health of our employees and workers have the highest priority within our management policy, which is one of our core and intrinsic values. We permanently identify, evaluate and ensure control of the risks related to the safety of our personnel, our contractors and visitors, in order to prevent health damages and deterioration. The actions we carry out in terms of safety and health reflect the values in which we frame all our operations and respond to the joint construction of a preventive culture.

### Health and safety performance

To achieve a culture of prevention, all our efforts focus on preventive programs and performance improvements in safety and health, based on OHSAS 18001 and other voluntary international standards, such as those of the United States Occupational Safety and Health Agency (OSHA) and the U.S. Mine Safety and Health Administration (MSHA).

Some of the programs implemented in 2018 are: safe handling of vehicles and trucks; risk management; incident investigation; industrial hygiene; training for employees and contractors; and our STOP (preventive observation) behavioral program.

For our high-risk jobs, we have improved and disseminated the “MSC Golden Rules” program, which covers the activities of work at heights, hot work, confined space work, excavations, electrical work, hoisting, work with hazardous substances, work on energy equipment (locking and labeling) and work on slopes, loading platforms and benches. This program focuses on ensuring safe work within our organization in a didactic and technical-practical way. For this purpose, we designed a pocket manual that summarizes the Golden Rules (guidelines), so that our staff have access to a simple and focused language to be able to check and understand the basic safety controls corresponding to each critical activity.

Our “MSC Golden Rules” program is reinforced by the Golden Rules and Operational Inspections (IRO-ISOP) program, which consists in monitoring and follow-up of the strict compliance of each golden rule within our company.

At the same time, every day the teams hold safety meetings at the beginning of each shift, in order to review, remember and communicate the control measures, rules and instructions that must be implemented during their daily activities, in order to reduce the risk of incidents.

Among the tasks that we have implemented and that are aligned with the ICMM (International Council on Mining and Metals) Principles, we can mention: reformulation of the OHS programs, awareness-raising and socialization of the Golden Rules, improvements in the monitoring and control of industrial hygiene results, and strengthening and awareness-raising concerning road safety measures.



## Safety performance (403-2)

OSHA Standards - Frequency Index (Injury Rate)	2015	2016	2017	2018
Employees	0.41	0.33	0.29	0.57
Contractors	1.11	0.74	0.91	0.71
Fatalities	1	0	1	0
MSC employee absenteeism rate (OHS-related incidents)	0.89	0.86	0.28	0.04
Contractor absenteeism rate (OHS-related incidents)	1.15	1.01	1.67	0.05

The updated absenteeism rate considers the percentage of days related to safety incidents. The annual rates were broken down, distinguishing MSC and its contractors.

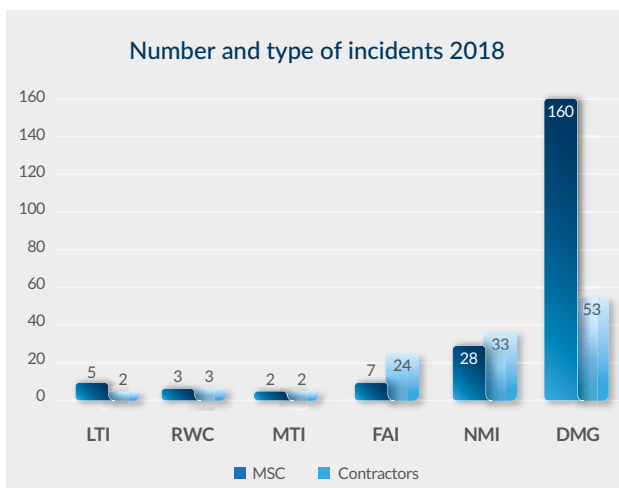
The accident and incident indicators we manage follow guidelines of the OSHA 29 CFR 1904 standard of "Lost Time Frequency Rate" (LTFR) and "Total Recordable Frequency Rate" (TRFR), complying also with national standards. In this sense, lost days are recorded as calendar days and are counted from the day of the incident.

The frequency index (FI) of MSC in 2018 indicates that 0.57 incidents with medical leave were registered for every 200,000 man/hours of risk exposure.

The frequency index (FI) of contractors in the same lapse displayed 0.82 incidents with medical leave for every 200,000 man/hours of risk exposure.

The increase in the frequency index for our employees in 2018 compared to that of 2017 is mainly due to the increase in recordable incidents, the main cause being that the staff were "Normalizing Risk", i.e. the gradual process by which unacceptable practices or standards become acceptable. Faced with this reality, we worked to raise awareness among our staff and contractors to strengthen leadership, the commitment to supervision, compliance with controls in view of identified risks and improvement of the inspection and maintenance programs.

Below is a detailed overview of the number and type of incidents recorded in 2018.

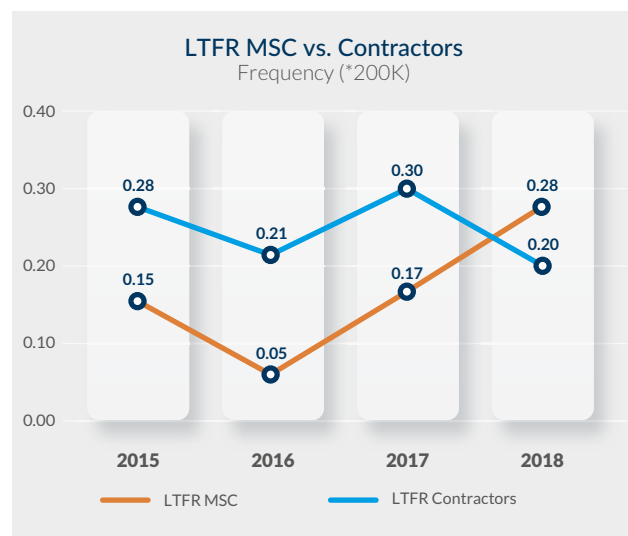


LTI: Lost Time Injury  
RWC: Restricted Work Case  
MTI: Medical Treatment Injury  
FAI: First Aid Injury  
NMI: Near Miss  
DMG: Material Damage

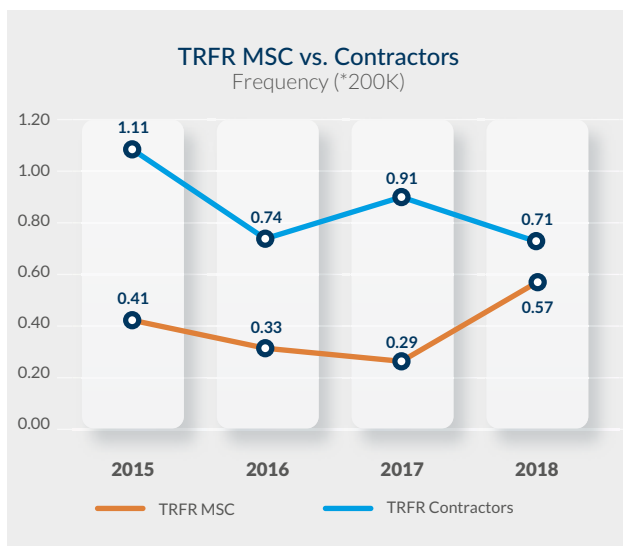
In the graph above, a "near miss" is an unwanted event, which, under slightly different circumstances, could have resulted in injury to people, damage to property or loss in the process; an unwanted event that may result or results in loss. "Material Damage (DMG)" occurs when there is an accident and the damage (to the equipment itself and/or to third parties) corresponds to a material object or asset of the company; that is, there is no personal injury.

### Lost Time Frequency Rate (LTFR) - Total Recordable Frequency Rate (TRFR) of MSC and contractors

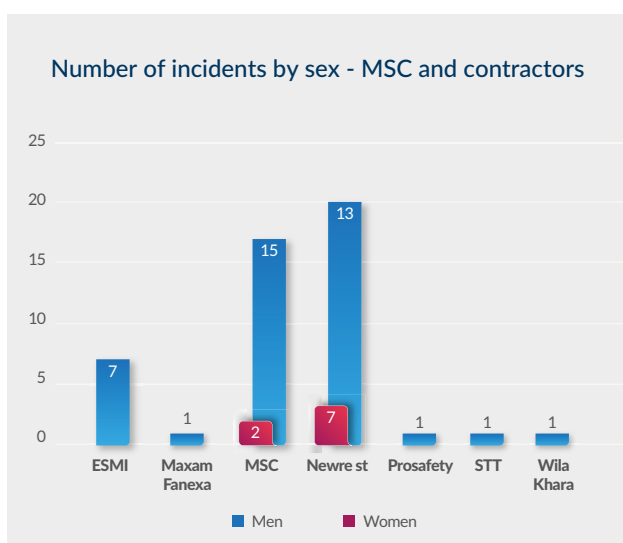
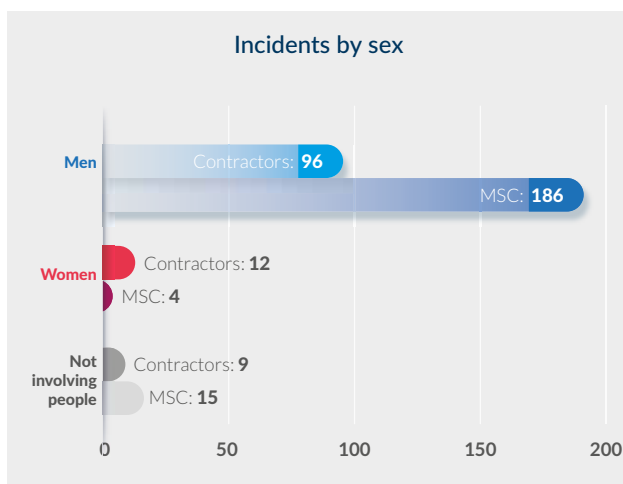
For statistical monitoring and comparison purposes, we present the following information since 2015:







The following graph refers to all incidents reported in 2018 by sex and also shows detected incidents that are not related to a direct person, e.g. failure in part of the blasting process or when detecting damage without anyone being directly responsible.



In incidents involving injuries to persons, we have recorded that 81% of them involved men (39 events) and 19% women (9 events).

## Health

Following up on the work of previous years and always in line with our strategic objectives, we implemented three health management programs.

- Occupational health program
- Medical care and emergency program
- Health prevention and promotion program

The Occupational Health Program is aimed at monitoring the health of our employees and the development of strategies for health prevention and promotion in our workplace, with the following lines of action:

**Health surveillance of the worker**, aimed at determining and monitoring the level of fitness of our workers. At all times this takes into account the relationship between their state of health and their functions, applying pre-occupational exams to 100% of the workers and an annual health control consisting of a comprehensive assessment, aimed at monitoring the health status according to their position and the risks to which they are exposed. In 2018, 1,389 regular health checks were carried out, reaching 98.44% coverage.

**Prevention and control of health problems of the worker**, aimed at providing a timely response to the main health problems that arise or may arise, considering the occupational risks to which our employees are exposed, as well as their own biopsychosocial conditions. Among the programs that stand out in this area, we have the prevention and control of skeletal muscle disorders, cardiovascular risk and erythrocytosis, in view of the focus on reducing the high prevalence of these affections (403-3).

**Promotion of the worker's health**, aimed at promoting healthy lifestyles based on self-care and the environment in order to improve the workers' health status. To this end, we have a matrix of health information and education contents, which are

disseminated through our programs, health points and health services. The dissemination of this material goes hand in hand with measures to assess the knowledge, attitudes and practices that allow us to measure the impact on attitude changes among our workers.

 <b>Program for the Prevention and Control of Skeletal Muscle Disorders (SMDs)</b> <ul style="list-style-type: none"> <li>- Workers with SMDs: 45.92%.</li> <li>- Workers with SMDs included in the program: 28.86%.</li> </ul>	 <b>Cardiovascular Risk (CVR) Prevention and Nutrition Program</b> <ul style="list-style-type: none"> <li>- Workers with cardiovascular risk not in accordance with age: 40.04%.</li> <li>- Workers with cardiovascular risk not in accordance with age included in the program because of their CVR status &gt; 10%: 22.70%.</li> <li>- Workers with cardiovascular risk not in accordance with age and CVR &gt; 10% under specialized control: 65.87%.</li> </ul>
 <b>Program for the Prevention and Control of Erythrocytosis</b> <ul style="list-style-type: none"> <li>- Workers with erythrocytosis: 60.61%.</li> <li>- Workers with erythrocytosis included in the program: 35.47%.</li> <li>- Workers with erythrocytosis included in the program under specialized control: 72.15%.</li> </ul>	 <b>Comprehensive Health Program for Working Women</b> <ul style="list-style-type: none"> <li>- Female workers with gynecological control (including pap smear test, mammography and bone density): 57.54%.</li> </ul>
 <b>Hearing Conservation Program</b> <ul style="list-style-type: none"> <li>- Workers exposed to occupational noise: 30.0%.</li> <li>- Coverage of audiometries among workers exposed to occupational noise: 99.30%.</li> <li>- 0 cases of hearing loss due to occupational noise.</li> <li>- Audiometry control to verify fitness in vehicle handling, work at heights or work in a confined space: 1,010.</li> </ul>	 <b>Vision Conservation Program</b> <ul style="list-style-type: none"> <li>- Coverage of eye checks for workers: 87.17%.</li> <li>- Provision of safety corrective glasses: 460.</li> </ul>
 <b>Immunization Program</b> <ul style="list-style-type: none"> <li>- Immunization coverage achieved among workers according to the vaccination schedule: 91.79%.</li> <li>- Coverage of influenza vaccination among workers: 83.06%.</li> </ul>	 <b>Lead Control Program</b> <ul style="list-style-type: none"> <li>- Coverage of evaluation of lead in blood in workers: 98.44%.</li> <li>- 0 cases of lead poisoning.</li> </ul>
 <b>Prostate Cancer Prevention and Control Program</b> <ul style="list-style-type: none"> <li>- Workers aged 40 and over with Prostate-Specific Antigen (PSA) test: 97.87%.</li> </ul>	

Our programs managed to achieve significant coverage during 2018, just like in 2017. For this reason, we can affirm that our health system has been developing successful and adequate health protection initiatives, with which we manage to improve our capacity of following up the workers included in our prevention and control programs, which in turn leads to benefits in terms of improvement of their overall health status.

As in previous years, in 2018 we did not identify occupational diseases (403-2), which was the result of effectiveness of workers' health surveillance and the focus on health prevention and promotion measures.

Our challenge for the next few years will focus on increasing coverage of the health programs and getting our workers to adopt healthy lifestyles. We do not doubt that both are the most effective measures for health protection.





## Medical care and emergency program

During 2018, we worked on the management of medical emergencies, the follow-up of chronic patients and the improvement of the quality of the health services. We can report the following achievements:

- 506 cases of worker accidents, which occurred in and out of the workplace, were dealt with.
- The first aid manual was distributed to all our employees and workers.
- The capacity of aerial referral of critical cases was reinforced by incorporating a Beechcraft aircraft, specially equipped for emergency transfers.
- We provided 37,222 outpatient medical visits, 36% of which concerning workers, 56% beneficiaries and 8% the uninsured population; 607 hospitalizations, 35% of which concerning workers, 59% beneficiaries and 6% the uninsured population; and 290 surgeries, 43% of which involving workers and 57% beneficiaries.
- Individual follow-up of 392 chronically ill patients.
- Improved accreditation levels of the health centers in Toldos, San Cristóbal, Culpina K and Vila Vila. The accreditation corresponds to the level of compliance with the quality standards set forth by the government for health centers.
- We were granted the operating license of the X-ray room of the Toldos medical unit by the Bolivian Institute of Nuclear Technology (IBTEN).
- We were able to consolidate the organization and functioning of technical committees on biosafety and epidemiological surveillance, accreditation and quality management, safe motherhood and evaluation of clinical records and therapeutic drugs.
- The levels of satisfaction among users of the health services were above 80%.

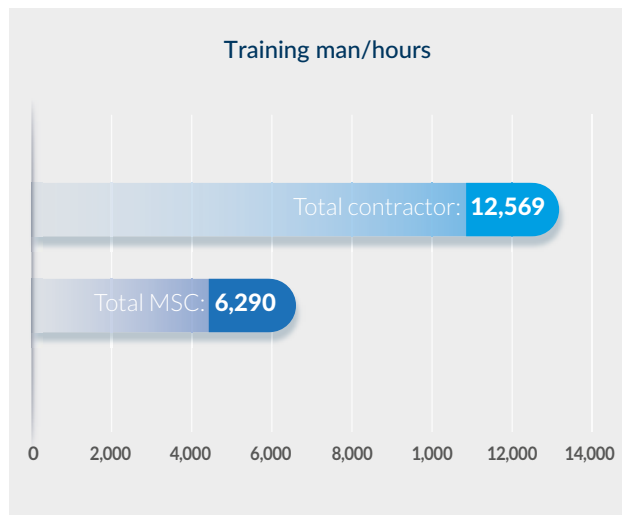
## Health prevention and promotion program

In 2018, we implemented the following programs in the communities of San Cristóbal, Culpina K and Vila Vila:

- Healthy child control program. This program targets 24 children under 5 who go to the nursery school in San Cristóbal. It comprises monitoring of the growth and development of the children, the timely identification of prevailing diseases and the development of preventive measures through information and education for self-health care.
- School health program. Aimed to develop health promotion activities for the benefit of the primary school children by means of nutritional, medical and dental controls; educational talks to parents; and technical guidance to teachers. In 2018, a total of 857 boys and girls were evaluated.
- Elderly care program. Targeting people from the age of 60, this program aims to promote their right to health based on a bio-psycho-social approach. It also seeks to ensure health care and protection of the elderly through medical care and the corresponding social support. In 2018, we managed to reach out to 103 elderly people, i.e. 100% of the population in this age group.
- Safe and healthy motherhood program. During 2018, we monitored 87 pregnant women, through prenatal controls, delivery care and newborn care, as well as post-delivery care. The target population of this program is the female workers, female beneficiaries and pregnant women from the three communities in our area of operations.

## Health and safety training

We have taken on a commitment to the health and safety of our workers and, within the firm intention to provide an accident- and injury-free workplace, we offer a series of training courses that are related to health, safety and industrial hygiene.



During 2018, we organized 362 courses so that the people joining the company received the necessary knowledge on Safety and Health. We accumulated a total of 18,859 man/hours, both regarding our personnel and regarding the contractors.

These courses were distributed over the following topics:

- Isolation
- Hazardous substances
- Driving at the mine site
- Work permits (height, confined spaces, excavations and hot work)
- Defensive driving
- Risk analysis at work (ART, in Spanish) / Previous work verification (VPT, in Spanish).
- Induction OHS update

Providing training on these issues ensures that we improve the skills of both our own personnel and that of our contractors, which has a direct impact on risk reduction and, therefore, incident reduction.

## Industrial hygiene program

Our Industrial Hygiene program brings added value to workers and the company, as it allows us to anticipate, recognize, evaluate and control exposure to occupational risk agents.

This program is preventive and pursues several objectives, including: avoiding occupational diseases, promoting the well-being of our workers, achieving healthy working conditions, and complying with national regulations and international standards.

In 2018, the technical assistance provided to industrial hygiene personnel provided by a CIH<sup>5</sup> expert was helpful for our industrial hygiene team to address the challenge of starting thermal stress and vibration programs with measurements in our operational areas, aligned to up-to-date international standards and regulations in the field of occupational health and hygiene (OSHA, ACGIH, NIOSH). The purchase of noise and airflow calibrators, air pollution sampling pumps and a thermal stress meter was essential to meet the adopted standards.

Based on the monitoring results in each year, we take actions according to the result compared to its respective OEL (Occupational Exposure Limit). If this value expresses overexposure, the GES or subGES is included in the hearing conservation or respiratory protection programs in order to independently administer the ARO identified with the potential to cause long-term occupational disease.

Any result that identifies an overexposure is validated through field observations recorded on the Industrial Hygiene Agents Sampling form (if intentional manipulation of the sample is verified, it is archived). Statistically, and by taking new samples, this will allow objective confirmation to generate a higher level of confidence in the data.

In the following table, we detail the number of samples taken in the last three years with regard to occupational risk agents.

<sup>5</sup> CIH: Certified Industrial Hygienist

	MINE			PLANT			SUPPORT AREAS		
AGENTS	2016	2017	2018	2016	2017	2018	2016	2017	2018
Noise	37	79	38	90	116	113	27	60	41
Breathable dust	19	24	18	38	44	35	19	22	14
Breathable silica	19	24	18	38	44	35	19	22	14
Lead	14	24	12	43	58	50	1	19	12
Metal fumes	N/A	2	1	N/A	1	4	N/A	1	2
Arsenic	N/A	17	9	N/A	30	20	N/A	N/A	12
Gases	N/A	N/A	N/A	9	13	N/A	N/A	N/A	N/A
DPM (Diesel Particulate Material)	N/A	8	5	N/A	N/A	N/A	N/A	5	7







## CASE STUDY

### MSC Industrial Hygiene program becomes a reference on the regional mining industry

In line with our vision and values, five years ago we took our first steps in the area of industrial hygiene, in order to ensure that the occupational risk agents to which our personnel may be exposed are identified, evaluated and monitored. In this way, we demonstrate our company's commitment to prevention and health care for our workers.

We hired certified experts from the United States with the main and initial objective of training our personnel in the area of Industrial Safety to later develop an Industrial Hygiene Program. For three years, this area was dedicated to technical and practical training in specific industrial hygiene issues, such as: gas and particle monitoring, monitoring protocols, occupational exposure limits, respiratory protection, hearing conservation, thermal stress, vibration, radiation, hazardous substances and others. Additionally, our staff

attended congresses related to industrial hygiene abroad, which helped strengthen their knowledge and relationship with other professional experts in the field.

In order to meet our objectives in a comprehensive manner, we also include technology in the procedures, so we purchased state-of-the-art equipment for noise measurement, dosimeters and a particle counter with the ability to determine quantitative respirator seal adjustment tests. We conduct maintenance and calibration activities directly with suppliers and manufacturers who have reliable equipment for readings and measurements. Thus, technology, together with the gradually acquired knowledge and expert guidance, has allowed us to start an Industrial Hygiene Program that lives up to a world-class company.

It is important to mention that throughout the training process we also adopt consensus-based standards and international standards, which allow us to ensure a high performance. Some of these standards are OSHA (Occupational Safety and Health Administration), NIOSH (National Institute for Occupational Safety and Health), MSHA (Mine Safety and Health Administration), ACGIH (American Conference of Governmental Industrial Hygienists). Aligned with these standards, we were able to draw up protocols and instructions, ranging from the calibration, programming and operation of occupational monitoring equipment and quantitative tests of airtightness of respiratory protectors, to the interpretation of results in order to deliver preventive recommendations for the workers' health care. These standards ensure reliable and professional work, which allows us to comply with Bolivian legislation far beyond what is provided for or required.

On the other hand, our Industrial Hygiene Program includes preventive programs such as: monitoring

and measurement; respiratory protection; hearing conservation; evaluation of PPE / work wear; radiation protection; risk communication; and others. By implementing these programs, we can provide safe working environments.

Over the past few years, we have generated four reports on the monitoring of occupational risk agents, which were measured throughout the mining operation. These reports are disseminated through two mechanisms: the presentation of results to the staff of the areas involved and letters of notification of personal results to the workers who carried the monitoring equipment during their working day. These actions seek to communicate the work we carry out in the field of Industrial Hygiene in an open and transparent way.

Compared to other mining operations, we have a high level of performance in industrial hygiene, which shows that we have the ability to manage, continue and improve current programs efficiently.





### Hearing conservation program

Our goal is to prevent noise-induced hearing loss at work, so we implement a program that promotes a safe environment for staff exposed to noise levels above Occupational Exposure Limits. In 2018, we carried out the following actions:

- Measurement of occupational noise levels through personal dosimetry.
- Inclusion of personnel evaluated by area into the hearing conservation program.
- Administrative controls and personal noise protection equipment controls.
- Training and education of the worker in use, protection and final disposal.
- Personal communication of results.
- Presentation of results by area to staff and supervision.
- Annual audiometry tests for exposed workers (occupational health area).
- Survey of the state of the noise maps in the different areas.

### Respiratory protection program

We seek to prevent occupational respiratory diseases and protect our personnel who are exposed to levels of chemical agents above Occupational Exposure Limits (particles, gases, vapors, fumes, etc.). In 2018, we developed the following actions:

- Measurement of chemical agent levels through personal sampling.
- Inclusion of personnel evaluated by area into the respiratory protection program.
- Training in relation to respiratory hazards, limitation of use and maintenance of the respirator.
- Protocols for use, cleaning, disinfection, storage, inspection, repair and disposal.
- Communication of personal results and presentation of results by area.
- Quantitative test of adjustment of the respirator and delivery of the card with the result obtained.



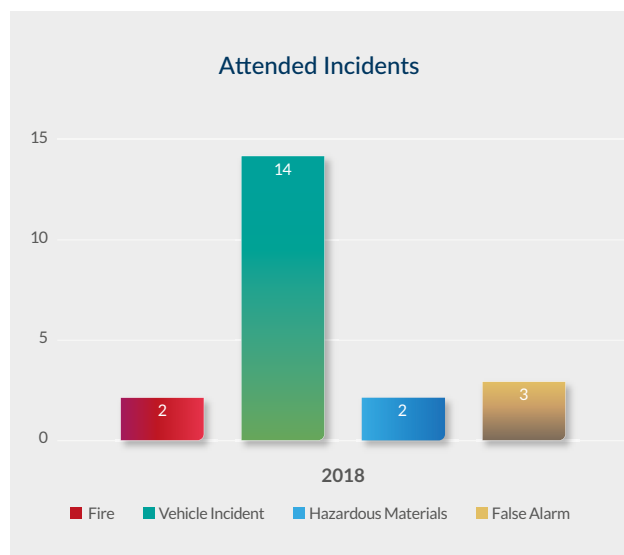
## Emergency preparedness and response

The ERU (Emergency Response Unit) work program covers planning, preparedness and response activities for industrial and large mining emergencies within our company. Additionally, we attend to events in neighboring communities that may involve tourists, community members and other individuals.

Seven full-time emergency workers, four foreign industrial firefighters, and 95 voluntary brigade members (including ten women) completed the schedule for training, inspection and maintenance of the on-site emergency systems, which adds significant value to our company.

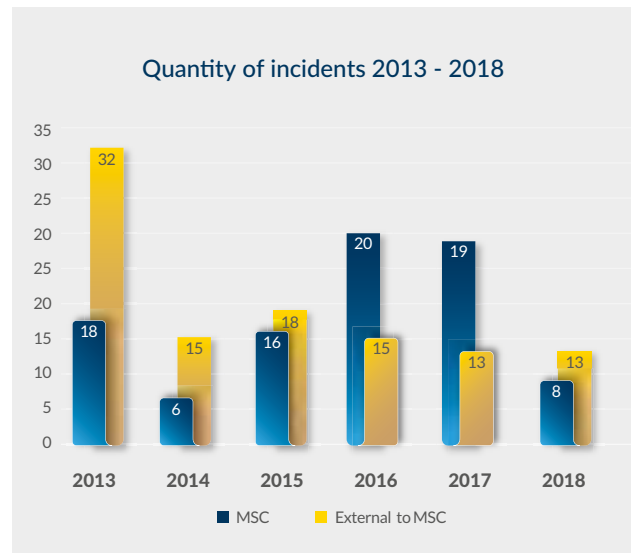
## Emergencies

In 2018 we attended 21 events, 16 of them off-site in an area ranging from Villa Alota to Vila Vila (km 89 to 143 on the main road). Our external emergency response activities were much more intense than those within our operations and involved tourists, people from communities and individuals.



The most frequent incidents are vehicle-related. However, it is important to highlight that by 2018 this type of events decreased by approximately 40% since 2013. The number of injuries decreased as well. This is the result of implementation of the defensive culture and the training of our staff in communication and initial emergency response.

Looking at the total number of incidents dealt with between 2013 and 2018, it is clear that a greater number of vehicle incidents took place outside our operations. Internally, the most recurrent incidents -following fire alarm triggering- are also vehicle incidents.



## Drills

Exercising good practices and technical methods of emergency care is the best tool to reduce the impact of a real emergency, and is part of our ongoing improvement.

Our Emergency Response Unit has organized exercises for all identified emergency scenarios in ten drills scheduled during the year. The annual program included the following scenarios:

1. Fires
2. Explosions
3. Rescue
4. Emergencies with hazardous materials
5. Natural emergencies
6. Radiological emergencies
7. Aircraft emergencies (Toldos aerodrome)

With this schedule, validated by each Direction, we can execute operational, non-operational and desk drills with the members of each area, particularly emphasizing the high-risk tasks that were identified during the operation.

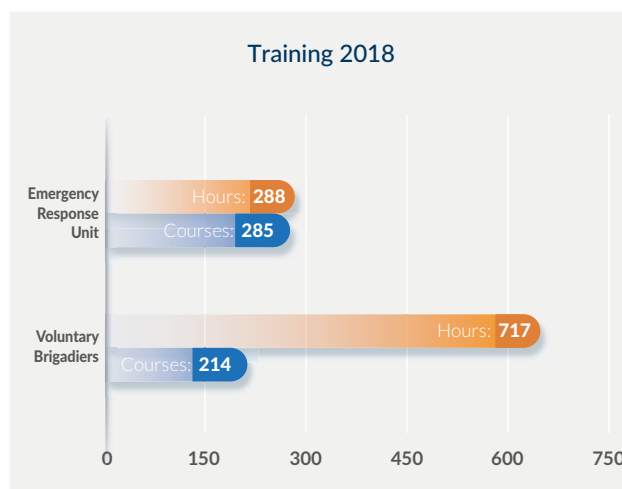
As a result of these drills, we have been able to identify opportunities for improvement, which help us to minimize possible deviations that could arise in a real-life situation.



## Inspections and training

In 2018, our Emergency Response Unit trained 558 people in the Emergency Plan and Fire Prevention and Control (theory and practice), with a total of 84 classroom hours on-site.

In line with the objective of reducing the impact of an emergency and in order to respond efficiently, we have invested 717 hours of training in the Volunteer Brigade, including training subjects such as CPR, firefighting, first aid and different types of rescues.



In terms of inspections of our emergency systems, assets and liabilities, 444 inspections of the 151 buildings of the operation have been conducted.

## Hygiene, occupational safety and wellbeing mixed committee

Our mixed committees are composed jointly and equally of representatives of MSC and the workers, and are made up of a chairperson, a secretary and voting members. In 2018, the mixed committee at the operation had 56 members and the one in the La Paz office had 8 members, representing 100% of the workforce (403-1).

The main functions and responsibilities of the mixed committees are:

- Comply with and ensure that the company complies with the General Law of Hygiene, Occupational Safety and Wellbeing, laws in effect with regard to Safety, as well as the technical provisions of the Mixed Committee.



- Permanently inform about the work environment conditions, the operation and maintenance of machinery, equipment and personal protection implements and others in relation to hygiene, occupational safety and wellbeing in the workplace.
- Know and analyze the causes of accidents in the workplace and occupational diseases that occur in the company, proposing possible technical solutions.
- Monitor and evaluate documentary records and report occupational accidents and diseases.
- Ensure that all workers receive adequate instructions and orientation in the field of Hygiene and Occupational Safety, encouraging dissemination and training activities in order to maintain the workers' interest.
- Submit quarterly reports of meetings to the Directorate General of Industrial Safety, which will indicate the degree of compliance or non-compliance with the legal provisions or agreements reached.
- Prepare, at the end of the term, a final report of the activities carried out, as well as the measures to prevent occupational risks and diseases to be adopted within our company, as well as the report of the planned activities of the ISOP (Operational Safety Inspection), STOP (Behavioral Observation Program) and Incidents commission for the next year.

We acknowledge the work of all Committee members, particularly because of the responsibility they took on and their commitment to safety in accordance with the action plans in each of the committees.



Wila Khara tailings deposit



MINERA SAN CRISTÓBAL S.A.

6

## Environment

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Andrés Guarachi





## Approach

Our environmental management system is based on compliance with current regulations, the care and rational use of natural resources, the application of good environmental practices and our commitment to surrounding communities. Our operational activities are based on the identification and assessment of risks; on the mitigation and remediation of negative impacts; on the application of standards and protocols for the monitoring of environmental factors, thus generating credibility and trust before environmental authorities and other stakeholders (102-11).

In 2018, the good environmental practices we used focused on efficient water use, the implementation of measures to reduce dust dispersion and the rehabilitation of areas disturbed by mining operations.

We comply with all environmental prevention and control standards established by the Bolivian government and with international standards adopted in the company's environmental management system, such as permissible soil quality limits (Canada, Argentina), air quality monitoring (Environmental Protection Agency of the USA), GHG emissions (IPCC, Intergovernmental Panel on Climate Change), cyanide handling agreements and others.

We receive regular inspection and verification visits by governmental, sectoral and departmental bodies.

We also carry out internal and external audits to verify compliance with legal obligations and applicable standards.

During 2018, no environmental incidents to be reported to the Competent Environmental Authority occurred in the activities of our company. Nor were any fines or non-monetary penalties imposed on us for not complying with environmental laws or regulations (307-1).

### 6.1 Efficient use of water (303-1, 303-2)

The industrial water used in our mineral processing plant comes from the pumping in the northern and southern well fields of the Jaukihua aquifer, located 10 km southeast of the mine. In the baseline study, carried out prior to construction of the mine, this water body was characterized as saline and not apt for human, animal consumption or irrigation. Subsequent studies confirmed that Jaukihua is a non-confined saltwater aquifer that stores approximately 366 million m<sup>3</sup>, and that is recharged. It is therefore sufficient to supply water for the production during the mine's years of operation.

The Jaukihua aquifer is not part of and is not adjacent to national or international protected areas and, as a deep groundwater source, it does not affect other surface water bodies. The results of monitoring fauna and flora throughout the years of operation





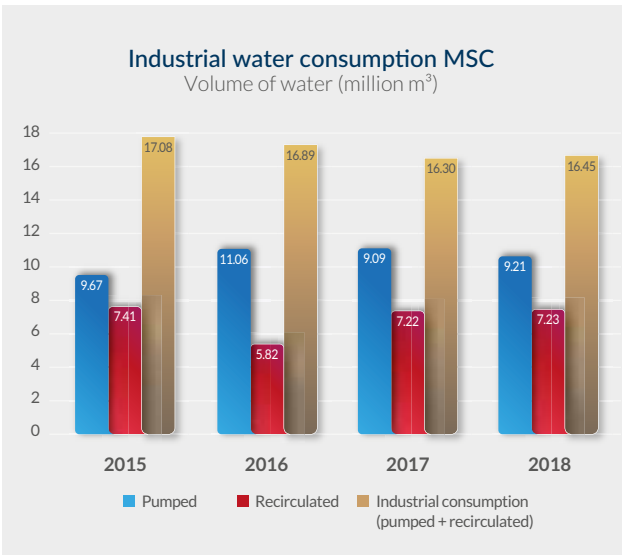
confirm that the conservation of local biodiversity and endemic or protected species do not depend on this aquifer.

The quality of the groundwater stored in the aquifer makes it a source of no importance for other activities of the surrounding communities. Nevertheless, we maintain a policy of rational use and responsible management of this water resource.

To minimize the impact on the underground source of water supply, we have implemented improvements in the installations of the tailings thickener tank of the concentration plant, in the tailings deposit and in the mine pit water utilization system, which has resulted in a reduction of groundwater consumption through recirculation of the processing water in the plant operation.

### Industrial water consumption (2015 – 2018) (303-3)

In the last two years, the volume of water recovery from the tailings deposit (recirculation) has increased significantly and so the rate of extraction of water from the well field (pumping) has decreased, showing the effort we made to optimize the consumption of water resources in our operations.



The average rate of water consumption per tonne treated was 0.51.

In this reporting year, we were able to recover on average 19,815 m³/day of the water coming from the tailings deposit recirculation system, which reduced

the rate of groundwater extraction. This aspect contributes significantly to the sustainability of the aquifer and reduces operational costs (303-3). In total, we recovered 7.23 million m³, representing 44% of the water used throughout the process.

The water used for human consumption in the camp comes from a well drilled in the northern field of the Jaukihua aquifer, and just like the production wells, it provides saline water which is subjected to treatment in a reverse osmosis plant prior to distribution for consumption.

The wastewater from the camp and the dining room is treated through a biological process until the quality is adequate for reuse in the irrigation of revegetation plots and roads in the operating area, as an environmental control measure to avoid liquid discharges outside the operating area and dust emissions into the air.

## 6.2 Waste management

### Plant tailings (MM3)

The residues from the mineral flotation process of the concentration plant, called tailings, are transported by pipeline to the tailings deposit, which is a final disposal site located in the Wila Khara micro basin, 13 km southwest from the concentration plant and 4 km northwest from the community of Culpina K. This basin is endorheic (closed) and the underlying geological formations have very low permeability, preventing infiltration and the risk of groundwater contamination. Thanks to this topography, the deposit only has perimeter berms and does not require a structural containment dam as in other mining operations, which reduces the risks to the environment. In 2018, 17.5 million tonnes of tailings were discharged; the comparative data for recent years are presented in the table below.

	2015	2016	2017	2018
Tailings taken to the deposit per year, in million tonnes	17.9	17.9	18.4	17.5

## CASE STUDY



### Central platform, Wila Khara tailings deposit

Minera San Cristóbal is a mining company that complies with responsible environmental management. Our operations are based on respect for the ecosystem through the efficient and sustainable rational use of natural resources, especially water, which is one of the most valuable resources for our operations and for the whole world.

In 2018, as part of good environmental practices, and in view of the need to improve the tailings discharge system in our mining operation, we built a central platform at the Wila Khara tailings deposit. This platform has allowed us to improve the recovery of water for recirculation to the plant, reduce the consumption of water from the wells and optimize the space for depositing tailings, as shown in the following images:



Usually in mining, such platforms are built on solid ground. However, in our case we have built the platform on partially wet tailings. This fact demanded a special and revolutionary design, which posed a challenge for the engineers. The solution has impressed more than one knowledgeable professional.

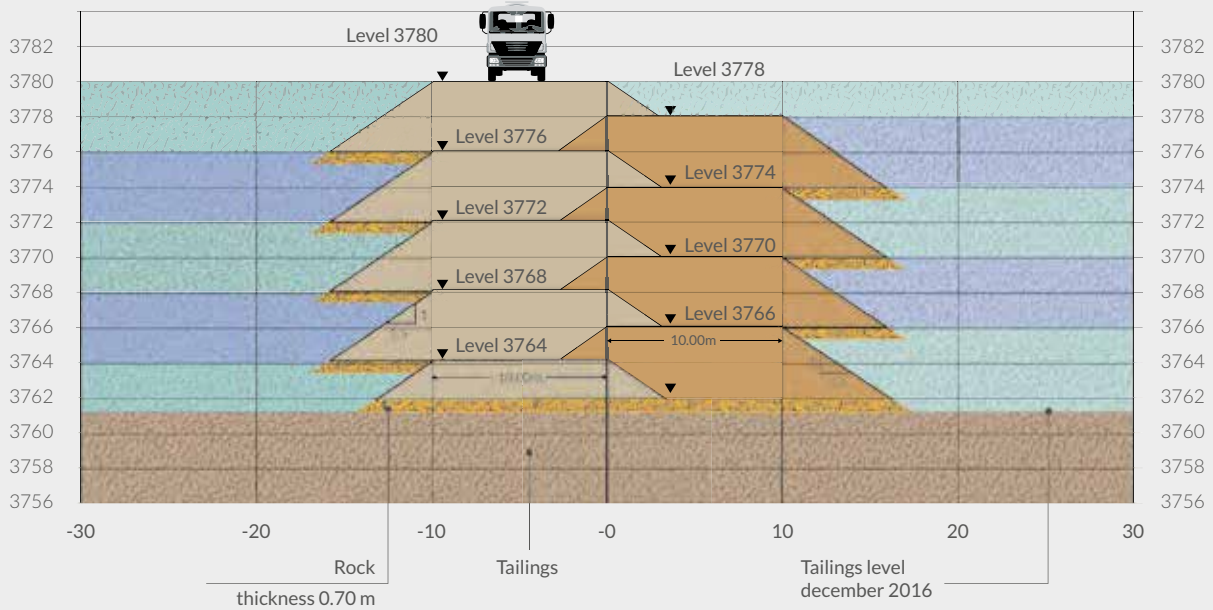
It is important to note that we built the platform without interrupting the daily discharges from the mining operation; therefore, the coordinated work between the Operations, Modifications, Auxiliary Services and Maintenance areas had to be monitored daily.



The current distribution allows the platform to be raised step-by-step; that is, while discharging in

the south, it is built in the north and vice versa. This ensures sustainability of the mining operation.

CROSS SECTION







Water recovery takes place at two points, which allows us to sustainably recover 1,000 m<sup>3</sup>/h of water. During the last rainy season, we managed to extract up to 1,600 m<sup>3</sup>/h.

It is important to note that Wila Khara, a company incorporated by members of the community of Culpina K, is building the platform; it is a community business venture that has grown in terms of the purchase of equipment, management of its processes and training of its staff. Initially, Wila Khara had two machines that were rented; currently, 95% of its machinery is its

own and it employs approximately 50 people from the community.

We have a plan for tailings discharge and sustainable water recovery. Likewise, we are planning to buy equipment that floats on the tailings in order to direct the waters from the tailings to the lagoons, thus obtaining a greater recovery of water and reducing the volume of tailings through compacting.



## Waste rock dumps

During 2018, 51.94 million tonnes of waste material were generated, which were disposed in dumps or piles. To prevent the possible generation of acid rock drainage, we have a drainage system that captures, stores and evacuates infiltration and rain waters, avoiding contact with the piles of waste material and temporary stocks of low-grade ore.

In 2018 we carried out maintenance and improvement work on the dykes built along the course of the Toldos river, downstream of the mine, which receives drainage and runoff (rain) water. This water is pumped to the concentration plant to prevent soil contamination downstream from the mine (306-1).

## Septic sludge

As a by-product of treatment of the waste water from camps, offices and dining rooms, approximately about 93 m<sup>3</sup>/year of septic sludge were generated, which were disposed of in pits of the Industrial Sanitary Landfill (ISL).

	2015	2016	2017	2018
Septic sludge in m <sup>3</sup> /year	128	106	190	93

Note: Until 2017, we worked with a bibliographic data of 94% of water in septic sludge (source: FAO publications). As of 2018, a correction factor obtained from field work was used where the percentage of water is 90%, which is why the calculation was updated as of 2015.

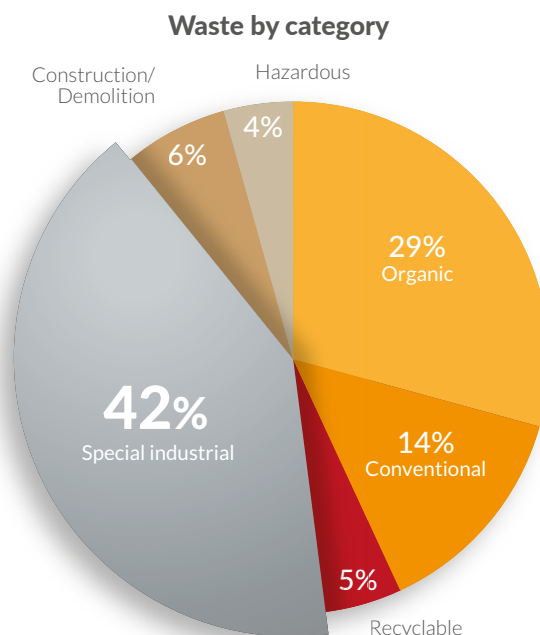
## Solid waste (306-2)

Solid waste management comprises the steps of classification at source (separation by type of waste), collection and transport, temporary storage and final disposal.

Depending on the type of waste, final disposal can be:

- Recyclable waste (PET bottles, cardboard, tires, junk, etc.). Transfer to independent recycling companies that have an environmental license for management and treatment.
- Reusable waste (wood, plastics, waste oil). Transfer to companies or people that have a specific environmental license for management and treatment.

- Conventional and organic waste. Storage in pits within the sanitary landfill and subsequent burial.
- Hazardous hospital waste. On-site incineration in an oven for this purpose.



**Waste by category**

Type of waste	2015	2016	2017	2018	Destino Final
<b>Hazardous waste</b>					
Waste contaminated with lubricants Waste contaminated with chemicals Waste from medical services / hospitals, Containers with hazardous waste.	98,589 kg	8,522 kg	10,374 kg	63,962 kg	Temporary storage and on-site incineration
Aceite usado	573,000 l	435,000 l	437,000 l	546,586 l	Transferred to authorized recyclers
<b>Non-hazardous Waste</b>					
Conventional waste	260,136 kg	270,700 kg	245,105 kg	198,967 kg	Encapsulated in cells
Organic waste from kitchen and camp	522,342 kg	493,130 kg	421,269 kg	421,973 kg	Encapsulated in cells
Recyclables: paper, cardboard, wood, glass, PET bottles, cans, residue	82,696 kg	85,800 kg	92,701 kg	65,663 kg	Transferred to authorized recyclers
Industrial: used steel coating, metal pieces, spare parts, rubber	56,468 kg	313,930 kg	350,984 kg	605,244 kg	Transferred to authorized recyclers
Construction waste	333,357 kg	71,600 kg	86,594 kg	88,085 kg	Encapsulated in cells

## CASE STUDY



### Waste disposal

Due to the nature of the work in Minera San Cristóbal, significant amounts of waste of different characteristics are generated; from metal and construction waste to organic waste. Based on this fact, and always maintaining our commitment to sustainable development — in this specific case the prevention of pollution — we decided to implement a specialized area for responsible waste management and disposal, which is the responsibility of the Senior Planning and Commercial Management Superintendency. This Superintendency has the support and resources needed to dispose of waste responsibly, internally or through external operators.

Among the main achievements in this area is the management of scrap disposal, which is equivalent to a significant volume of waste. This is commercialized through local intermediaries, which has a multiplier effect, since services are required related primarily

to transport and handling, which are provided by companies in the area of influence of our operation. During 2018, we managed the disposal of approximately 4,475 m<sup>3</sup> of scrap, i.e. 50% of the total volume of waste generated.

Due to its implications, the disposal of neon lamps is also a very important issue. For this purpose, we hired a specialized company which proceeded to the destruction of approximately 20,000 lamps, extracting and encapsulating a total of 90 grams of mercury. This action was carried out in coordination with our Safety area and it was a special procedure, because it was the first time we had done this type of work on our premises.

A total of 9,990 m<sup>3</sup> of waste were managed and disposed of responsibly in 2018. These works are carried out in direct coordination with areas such as Environment, Camp and Material Management, which





Cardboard recycling.



are an active and co-responsible part of the work associated with waste disposal management.

We also monitor final waste disposal, for which the responsible area carries out visits and inspections to the companies that buy this waste, verifying aspects related to their infrastructure, the working conditions of their employees, the availability and use of Personal Protective Equipment, among others.

During 2018, 75% of the available quantity was recycled, 15% was reused, and only 10% was finally disposed of through destruction. We must highlight the positive impact of the responsible disposal of waste, because in 2018 90% of the generated waste was recycled (paper, iron) or reused (rubber handicrafts, bags), which is a decisive and tangible contribution to correct waste disposal.

Recycling of giant tires.



Reuse of nitrate bags.



## 6.3 Energy (302-1)

100% of the electricity used in our facilities is acquired from the national interconnected system. Of the total

energy consumption, electricity accounts for 47%; diesel for 52%; and gasoline for the remaining 1%.

	Fuel consumption				Energy equivalent (TJ)			
	2015	2016	2017	2018	2015	2016	2017	2018
Gasoline	780,007 l	718,339 l	733,234 l	735,819 l	27 TJ	24 TJ	24,5 TJ	24,6 TJ
Diesel	41,992,177 l	31,551,444 l	31,868,562 l	38,910,665 l	1,722 TJ	1,146 TJ	1,157 TJ	1,413 TJ
Purchased electricity	359,508 MWh	367,280 MWh	367,041 MWh	351,470 MWh	1,294 TJ	1,322 TJ	1,321 TJ	1,265 TJ
Total					3,043 TJ	2,492 TJ	2,503 TJ	2,703 TJ



Subestación eléctrica

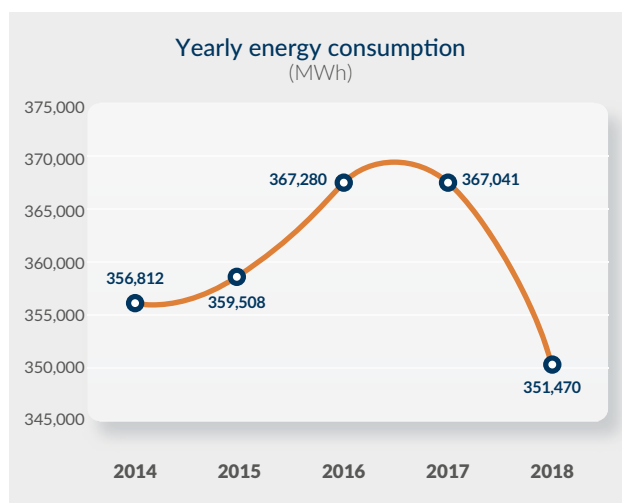
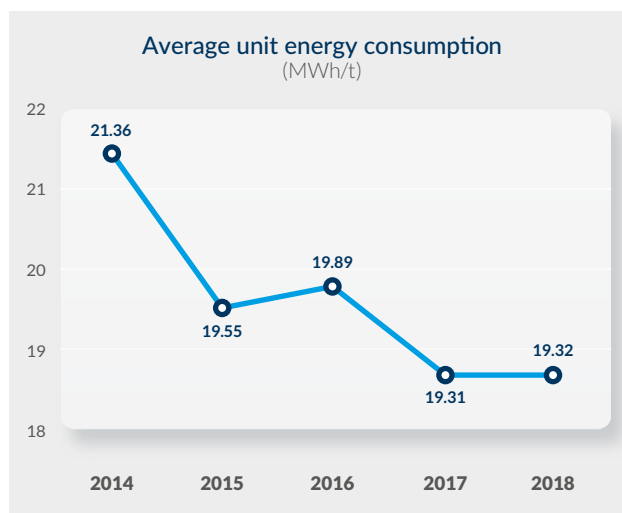
In 2018, the average electrical intensity was 0.0022 TJoules/t of processed concentrate. The total energy intensity in 2018 was 0.0047 TJoules/t, i.e. higher than the year before (0.0039 TJoules/t) (302-3, 302-4)<sup>6</sup>.

	2016	2017	2018
Electrical intensity per tonne of processed concentrate	0.61 MWh/t	0.58 MWh/t	0.61 MWh/t

	2016	2017	2018
Energy intensity per tonne of processed concentrate	1.16 MWh/t	1.10 MWh/t	1.31 MWh/t

The graphs show that the energy consumption in relation to 2017 decreased by 17,323 MWh, but the rate of consumption per tonne of concentrate produced increased slightly, because 60 tonnes of ore less were processed than in the previous year (302-4).



<sup>6</sup> For the conversion of power from MWh to TJ, the unit converter of the International Energy Agency (IEA) is used; and to convert the liters of fuel (gasoline and diesel) the EcoUrbano online energy calculator is used.

## 6.4 Emissions

### Greenhouse gases

In order to calculate the greenhouse gas emissions, the document entitled "Greenhouse gas – Quantification and reporting of greenhouse emissions for organizations – Guidance for the application of ISO 14064-1" – UNE-ISO / TR 14069:2015 IN - is used.

In 2018, total greenhouse gas (GHG) emissions were 231,598 t CO<sub>2</sub>eq, a value that exceeds that reported in 2017 (216,379 t CO<sub>2</sub>eq); which can be attributed to the increase in fuel consumption (305-5), particularly diesel. The total value is composed of 113,313 t CO<sub>2</sub>eq (305-1) (direct emissions) and 118,285 t CO<sub>2</sub>eq (indirect emissions) (305-2).

The total GHG emission intensity rate is 0.404, which is the result of dividing the total emissions, including energy consumption, by the total tonnes of mineral concentrates produced in a year. The total value of the intensity of emissions is composed of the intensity of direct emissions with a value of 0.197 t CO<sub>2</sub>eq per tonne of concentrate and an intensity of indirect emissions with a value of 0.206 t CO<sub>2</sub>eq per tonne of concentrate (305-4).

### Dust and noise

We continuously monitor the air quality in the project's area of influence at eight PM-10 stations located around the mine, in the tailings deposit and in the camp; and two stations with cascade impactors in the communities of San Cristóbal and Culpina K. According to the standards of the Environmental Protection Agency (EPA), measurements are made 24 hours a day, every 12 days.

To prevent dust and particulate material dispersion in the air, MSC has implemented the following controls:

- Speed restriction in the operational area.
- Frequent irrigation of roads.
- Application of dust suppressor (bischofite) on the running surface of the roads.
- Construction of a 140 m diameter dome over the stockpile.



With respect to noise generation, monthly monitoring is carried out at specific points within the operations area and in communities. In general, the measured values are below the permissible limits.

## 6.5 Climate change

In 2018, we hired an external consulting firm to develop a proposal for inclusion of the ICMN principles and position statements regarding climate change and its effects. We propose two strategies: one for mitigation and the other for adaptation.

- The mitigation strategy focuses on the rational use of natural resources and the reduction of greenhouse gas (GHG) emissions, which involves

assessing the feasibility of using clean energy sources, reduce fossil fuel consumption, measure the corporate carbon footprint and implement measures to reduce it.

- The adaptation strategy comprises a vulnerability analysis that identifies the main potential impacts of climate change (current climate conditions and future scenarios); an assessment of the climate risks we face (probability of occurrence of climate impacts); and an analysis of our operational and financial response capacity.

The conclusions and recommendations of this consultancy were the basis for drawing up an action plan that will allow us to move forward on the subject.



### 6.6 Biodiversity (304-2, 304-3)

In the environmental impact assessment of the project, a baseline inventory of flora and fauna was prepared, which is verified and updated by external biologists every six months. The results of this six-monthly monitoring are included in reports submitted to the environmental authorities, and to date we have found no evidence of significant impacts or changes in the biodiversity.

In the entire southwestern highlands of Bolivia, vegetation is scarce with mainly shrubs (tholas) as the primary food source for camelid livestock. In the Red List of Threatened Species in Bolivia, ten different threatened typical plant species have been identified because they are used as fuel (firewood) for domestic and industrial uses, and more recently because of the change in use of the soil to grow quinoa.

According to the International Union for Conservation of Nature, the main endangered species in the area of operation are: the small parina, the Andean suri or ostrich, the chirquincho and the Andean fox; the endangered flora includes thola, yareta and sicha (304-4).

There are no protected or high biodiversity areas near the mining operation. The Eduardo Abaroa National Wildlife Reserve is the closest protected area, and is located 150 kilometers to the south. The Río Grande is located 12 kilometers south of the mine and is also considered an important ecosystem, in which bird species are abundant, specially flamingos (304-1).

In 2018, with the support of an external consulting firm, we developed a proposal to include the ICMM principles and position statements related to biodiversity in our management system.

The recommendations include making a register of related environmental risks, disseminating the monitoring results of revegetated and rehabilitated areas, and implementing a scientific research program linked to endangered native flora or fauna.

In this area we also proposed an environmental compensation strategy, which entails identifying an ecosystem with characteristics similar to those

of the area of our operation and participating in an environmental program, which, in the case of the San Cristóbal mining operation, could be an agreement with the municipality of Colcha K to support territorial planning through a land-use plan, or assisting in the preservation of biodiversity conservation areas in protected areas.

The conclusions and recommendations will be addressed through an action plan that will allow us to improve this area.

### Soil remediation and rehabilitation (304-3)

Every year, we plan and implement remediation and rehabilitation of areas affected by mining activities, with the purpose of reestablishing traditional use of the soil and preserving the local ecosystems as much as possible. Since 2007, the rehabilitation plan has covered 133 ha of areas disrupted during the construction and operation phases, which are gradually being rehabilitated with support of a local community enterprise.

In 2018 we completed the rehabilitation of 16.15 ha within and outside our operational area, making it available to the communities in compliance with agreements they previously signed with our company.

#### Quantity of affected and rehabilitated land

	2015	2016	2017	2018
Disrupted areas not yet rehabilitated (total affected area)	2,350 ha	2,507 ha	2,507 ha	2,507 ha
Total rehabilitated area	9.46 ha	26.64 ha	26.64 ha	16.15 ha

\* 80.82 ha are currently being rehabilitated. These areas are not counted as "rehabilitated" until they are officially made available; that is, when the vegetation cover resembles the natural vegetation cover in at least 80%. In 2016 and 2017, rehabilitation work was carried out but the areas were not made available; this explains why the value of 26.64 ha is repeated.





## 6.7 Environmental complaints (103-2)

In 2018, no complaints or concerns were received from stakeholders, but we continued with the action plan prepared the year before to address the concern raised by the community of Culpina K related to tailings management in the Wila Khara operational area.

Within the framework of this plan, we continue with regular monitoring activities at the water accumulation sites around the deposit and on soils of agricultural plots adjacent to this operational area. We also drilled five new monitoring wells in the eastern sector, and we conducted two

geophysical studies to produce complementary information on the presence, quality and movement of groundwater.

## Significant spills (306-3)

All environmental incidents reported in 2018 associated with spills were considered minor and involved the discharge of substances in quantities of less than 10 liters. According to the event classification chart of incident investigation, they have a temporary impact, are reversible and recoverable in the short-term.



We understand by significant or greater spillage to the discharge of a dangerous substance in an amount equal to or greater than 2000 liters. In that sense, there were no significant spills in 2018

## 6.8 Mine closure planning (MM10)

In 2018 we continued with the closure and rehabilitation planning tasks, which were started in 2017, giving priority to relevant components such as the pit and mining waste storage areas (dumps), and the Wila Khara tailings deposit. The focus has been on complementing the studies needed to define the long-term water management plan, both in the dump area and at the headwaters of the Toldos and Jaukihua rivers, and in the area of the tailings deposit.

For reviewing and complementing the activities required in the update of the environmental and social closure plan, consulting firm Knight Piésold will support our technical and social team in years 2018-2020, focusing on the review and verification of aspects related to physical, chemical and hydrological stability at the remediation and rehabilitation sites, especially at the sites for final disposal of the mining and metallurgical waste, the definition of social closure guidelines and the drafting of a communications strategy towards the stakeholders linked to the operation and closure.

On the other hand, we continue to develop the annual revegetation program for areas disturbed in the construction phase and due to incidents in the operations phase, as part of the concurrent closure.

At present, we continue to develop the implementation of technical studies to complete the collection of data required to define surface water and groundwater management plans in the long term, in the closure and post-closure phases. Some of the main developments in 2018:

- Static and dynamic geochemical studies, with samples of mine materials that could be used as remediation cover of the waste rock dumps under conditions of physical and chemical stability.

- Hydrogeological study at the headwaters of the Toldos River to perform the characterization and quantification of the aquifer identified during mining exploration drilling.
- Geophysical and hydrogeological studies at the eastern edge of the Wila Khara tailings deposit to identify risks of process water infiltration.
- Update of the annual inventory of top soil recovered from the mine area and the tailings deposit, and the maintenance plan for future use in the concurrent closure and final closure.
- Follow-up of the development of pilot revegetation tests in the mine sector, using cover materials extracted from the mine, and revegetation with native species, using alternative methods such as hand seeding, transplantation and hydroseeding.
- Review and update of meteorological and hydrological data concerning the area to update the water balance in the micro-basins with links to the area of operation.
- Preparation of the pilot revegetation area in situ, along the northeastern edge of the Wila Khara tailings deposit, in order to perform yield tests of native species with different types of coverage.
- Update of the estimated budget for future Asset Retirement Obligations (ARO).
- External verification of the estimated budget, as well as of the guidelines for closure, remediation and environmental rehabilitation by international consultants.
- Training program for personnel involved in Integral Closure and remediation and rehabilitation projects, on topics such as hydrology, hydrogeology, geochemistry and software management, and simulation and forecasting models.

As part of the social closure planning, we have developed the “Resilience Study” in the communities in our area of direct influence, in order to evaluate the perceptions of the population about their ability to adapt to the changes linked to future closure of the operations. On the other hand, we plan to draw up a communication plan aligned with the policy and values of the management system, in order to ensure effective stakeholder participation.







7

## Neighboring communities



Left: Roxana Mamani  
Right: Blanca Bautista



## Approach

We are committed to respecting the human rights of the population in the area of influence of our operation and engage with them on this basis. Our objective is to contribute to long-term sustainable development in order to benefit the communities and the country through implementation of a Social Development Plan prepared in consultation with the communities. This plan includes and integrates the following programs:

- Community relations, aimed at maintaining the continuous relationship based on mutual respect with the communities in the area of influence.

For example, by replicating the best practices of our company, we implement the Environmental Management Project in the communities of direct influence. To this end, we have set up the environmental committees, which, together with the local authorities and the Municipal Government of Colcha K, developed environmental management plans in order to raise awareness and improve practices in waste reduction, the rational use of water and the increase of forest areas.

- Resettlement and Mitigation, which aim to minimize the socio-economic impacts caused by our operations.
- Sustainable Development, which aims to support and provide technical assistance to promote socio-economic development in local communities and in the region, in close collaboration with the Consultative Council Los López San Cristóbal.

In terms of communication, to disseminate information about our activities and progress of the different sustainable development projects, we use various means, such as: radio, newsletters, presentations at meetings and participation in fairs, as well as guided visits by authorities and institutions from the region to our operations and development projects in the communities.

- Social Capital, to know the relationship, behavior and degree of acceptance of the different stakeholder groups identified.

We comply with Bolivian legislation regarding the rights of Indigenous Peoples, as well as international

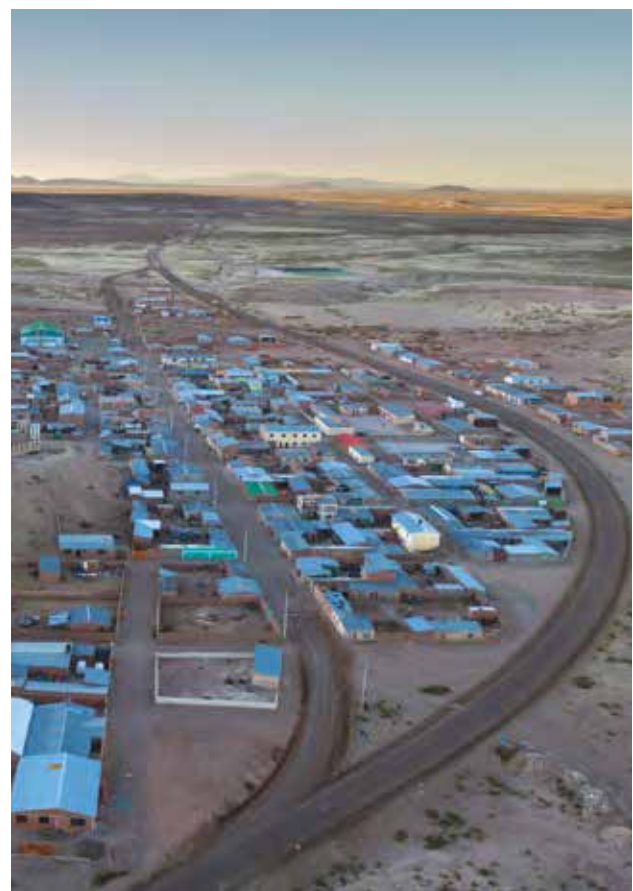
treaties, guidelines and principles related to mining activities. In 2018 there were no cases of violation of the rights of indigenous people (411-1).

## 7.1 Area of influence

Our area of operation is mainly inhabited by indigenous communities that are part of the native communities of Nor López, which, in turn, are part of the Central Única Provincial de Comunidades Originarias de Nor López and indigenous territory Territorio Indígena Originario Campesino (TIOC).

The area of direct influence of our mining operation comprises four communities: San Cristóbal, Culpina K, Vila Vila and Río Grande. The area of indirect influence comprises eight communities along the main road between Uyuni and Avaroa, and the railway we use to transport materials, inputs and concentrates. We also interact with other communities located near the project (MM5).

The initial agreements signed by the company were with San Cristóbal in 1998, Culpina K in 1999, Vila Vila in 1999 and Río Grande in 2006. These agreements remain in force in an atmosphere of mutual respect, consensus and direct dialogue. Later, we signed important agreements such as the Wila Khara Sustainable Development Agreement in 2010; the Memorandum of Understanding





and Pact of Harmony, Health and Sustainable Productivity in 2011; the Agreement for Local Development of San Cristóbal in 2013; and the Agreement for expansion of the operations area between MSC and the community of San Cristóbal in 2017.

In 2018, we signed interinstitutional agreements with the municipalities of Colcha K and San Agustín to support construction of the asphalt road project Río Grande-Cruce Laguna Colorada, which will be of great benefit for development of the communities of the region. We also entered into a strategic alliance with the Foundation for Development Cooperation and Promotion of Assistance Activities (CODESPA) to continue strengthening the economic initiatives of tourism ventures (gastronomy, handicrafts and hotels), within the framework of the Development Plan of the Consultative Council Los Lípez San Cristóbal.

## 7.2 Resettlement and mitigation of impacts

(MM9)

Twenty years after signing of the agreement for moving the town of San Cristóbal, 676 people were resettled, belonging to 141 families with an average of 4.79 members per family.

- The population of the community increased to 1,982 inhabitants. 71% of the families of this population have their own house.
- The average coverage of basic services - water, sewerage and power in the houses - is 93%.

- The average household income is BOB 7,414/month, and mining is the main economic activity.
- There is educational infrastructure at the preschool, primary and secondary levels, as well as two child centers.
- There is an accredited health center and infrastructure for operation of a second level hospital.
- The community has a public office building, sports fields and recreational facilities.
- There is a cultural tourism center, a hotel, hostels and restaurants.
- There is a foundation for business purposes, and various productive and service-delivery enterprises.

To mitigate the impacts of use of the productive land in the communities of San Cristóbal and Culpina K, we carry out resettlement and mitigation plans. In 2018, in areas surrounding the mining operation we built rainwater harvesting ponds and we executed projects for the use of natural water sources to build drinking troughs for the camelid cattle in these communities.

A livestock promoter is responsible for daily technical monitoring of the livestock behavior and the use and operation of the works executed for impact mitigation and for addressing the concerns of the affected livestock breeding families.

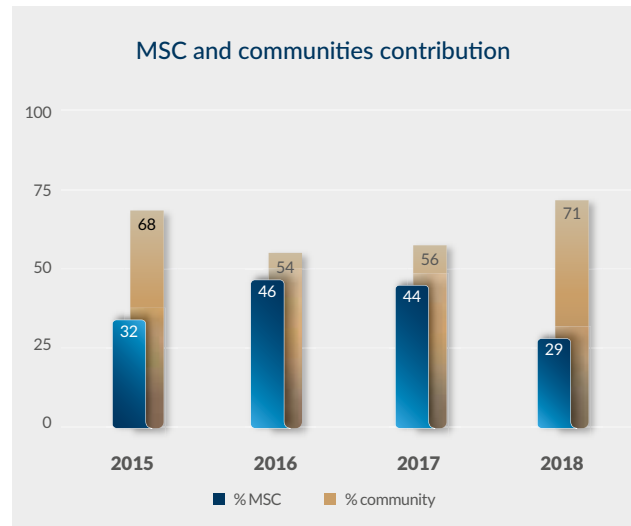
## 7.3 Community relations management

(102-43, 103-2)

Permanent and direct contact with the various stakeholders, as we have stated and demonstrated previously, is the fundamental pillar of our relations with the communities in the area of influence. In our Community Relations offices in the communities of direct impact, we receive visits from authorities, representatives of institutions, organizations and community members to answer questions and respond to requests for support, concerns or complaints, and we hold meetings on various topics of interest. In the other communities, the Regional Liaison is responsible for addressing these types of concerns and initiatives.

With a more proactive approach, our Community Liaisons both at the local and regional levels schedule monthly contacts with the different stakeholder groups, in order to collect their perceptions which are the basis for learning about their behavior (413-1).

We channel requests for support for minor projects, emergency works and social initiatives of our stakeholders through the Strategic Social Investment process, under the principle of shared responsibility. In recent years, the contribution of the communities to these initiatives has been higher than our matching contribution. Below is an overview of this participation within the framework of strategic social investment.





In addition, we have an expert professional who supports us in the field of social issues (alcoholism, early pregnancy, drug addiction, domestic violence), vocational guidance to students in the schools and psychosocial assistance for the families in the communities of the area of influence.

## 7.4 Social capital (102-43) (103-2) (102-44)

In order to measure the behavior of our strategic stakeholders, we have a “methodological model of social analysis” initiated and improved since 2010, which is composed of the following dimensions:

- Identification of stakeholders.
- Registration and systematization of events.
- Management of concerns/complaints.
- Operational social risk management.
- Follow-up of the social license to operate.

Based on the systematization of the registered events based on defined criteria, we identify concerns and complaints which will then be addressed. Concerns are verbal comments made by the stakeholders, which refer to a certain worry or unease about a given situation. Complaints are formally expressed (verbally or in writing) dissatisfactions, in order to set a precedent for immediate solution of the problem.

In 2018 we recorded twenty concerns/complaints, of which twelve were closed during the year and eight are ongoing and will be resolved in 2019.

	Received	Closed	Follow-up underway
Complaints	11	10	1
Concerns	9	2	7

The complaint with follow-up underway concerns the refusal of the teachers’ union to implement the “Plurinational Observatory of Educational Quality” program of the Ministry of Education. The cause of this refusal was a misinterpretation of the objectives

and components of the program and the sectoral education platform is working on a clarification and communication with the teachers who rejected this initiative; the program is expected to be launched in the coming months.

Of the seven concerns under follow-up, two are related to economic factors (delay in operation of the quinoa saponin removal plant), three to environmental factors (water wells in Lacani-San Cristóbal, Yana Loma-Culpina K and dust generation on the road) and two to social factors (institutional strengthening with the municipality of Colcha K and impact of exploration work).

## 7.5 Development projects (413-1)

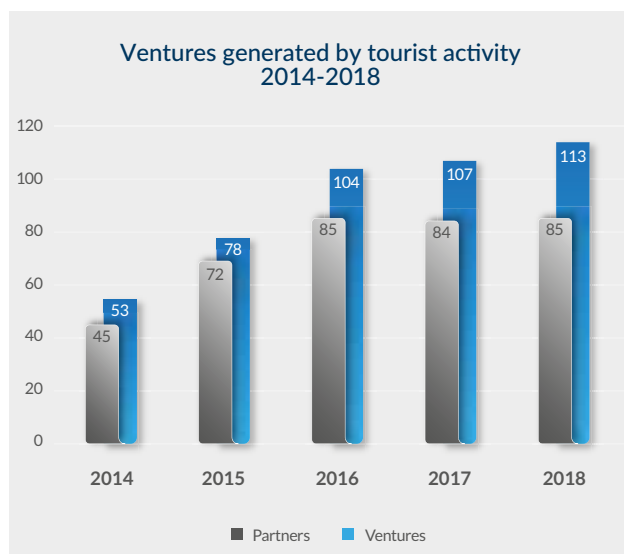
We provide technical and financial support to the Sustainable Development projects of the Consultative Council Los Lípez San Cristóbal. The Consultative Council is a representative body for co-participation of the leaders from the communities of direct influence, who enjoy the legitimate recognition of their communities, and it carries out a strategic plan to promote local development of the communities, in close collaboration with political authorities and social and productive organizations of the neighboring communities. This Council receives permanent technical assistance from a team of professionals of Minera San Cristóbal.

In order for the different productive and social projects of the strategic plan to materialize, we enter into strategic alliances with cooperating entities, the municipal government of Colcha K, government entities and other actors that coordinate and interact with each other in social, economic and environmental spheres, in order to achieve common objectives. Annual meetings are held to evaluate progress of the plans and actions are scheduled for implementation in the next year. The Strategic Plan 2010-2014 of the Consultative Council focused on improving the productive base and the current Strategic Plan 2015-2019 focuses on infrastructure and equipment for productive and social transformation.

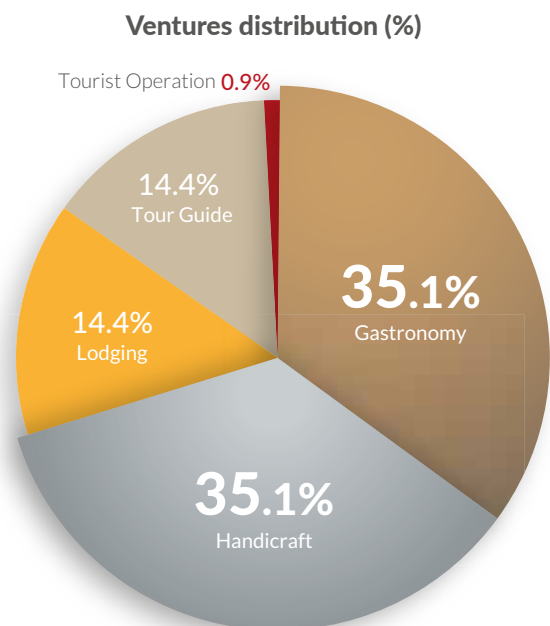


## Tourism project

Until 2018, 113 ventures have been generated in the different branches of tourism activity as a result of the coordinated efforts with the Consultative Council Los López San Cristóbal; the Foundation for Development Cooperation and Promotion of Assistance Activities (CODESPA); Conservation International; the Municipal Government of Colcha K; the Local Tourism Association Pueblos Mágicos de Los López; and the authorities of the communities of San Cristóbal, Culpina K, Vila Vila and Río Grande.



In these business initiatives, most people work in handicrafts and gastronomy.



In 2018, the flow of clients of the Local Tourism Association Pueblos Mágicos de Los López increased to 95,574 people, of which, 21,162 are foreign/national tourists and 74,412, regional clients. The revenues generated as a result of tourism services were equivalent to US\$ 339,940.

Camelid project

We have continued with the comprehensive project for the management and use of llamas and vicuñas, through a strategic alliance with the municipality of Colcha K, the Canadian Cooperation, Conservation International Foundation, the Consultative Council Los López San Cristóbal and the Camelid Producers Association (APROSAC).

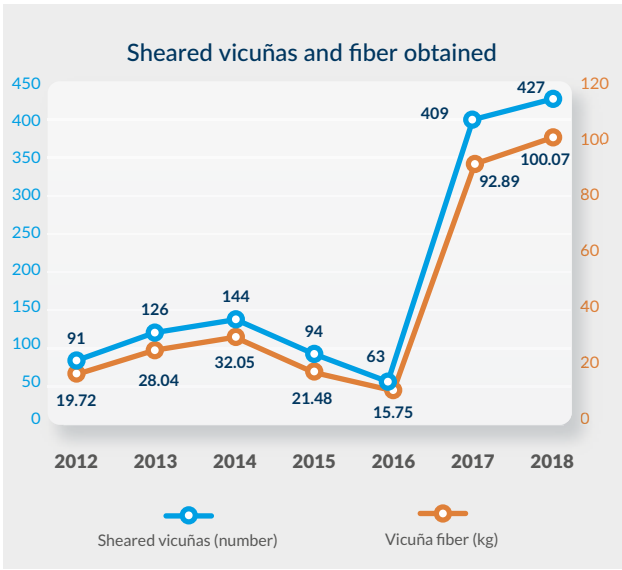
Through technical assistance and training for the producers in the nine communities in the four pillars of primary production (feeding, animal health, management and improvement of camelid livestock), the yield of the productive base has improved. At the same time, we have completed construction of the slaughterhouse and the llama meat processing plant which will produce the following: fresh meat in different cuts, sausages and first-class jerky. At present, the necessary equipment is being put in place.

APROSAC personnel have been trained in the slaughtering and llama meat processing processes in the city of Tarija and the Republic of Argentina. Below is a detailed overview of the number of llamas that were part of the project in the different years:

Year	2013	2014	2015	2016	2017	2018
Number of llamas	32,081	32,947	21,892	30,825	20,964	33,144

Regarding vicuña management and use in 2018, the Regional Association of Vicuña Producers at the Municipal Level (ARMAVI-CK) has been legally incorporated with twelve vicuña breeding communities. In order to add value and increase the price of the fiber, we have conducted the first course on prior bristle removal with participation of the four ARMAVIs of the department of Potosí.

On the other hand, we have continued providing training and technical assistance in capture and mechanized shearing, which gave rise to 427 animals being sheared and 100.07 kilograms of fiber being obtained.

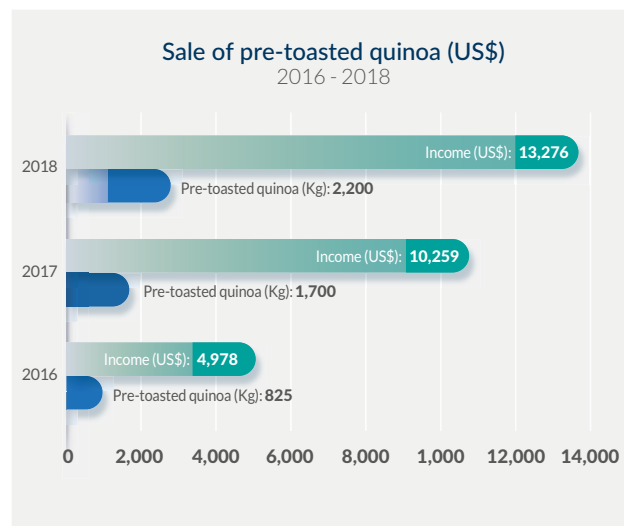




## Quinoa project

Based on the improvement of the production of certified organic quinoa under the productive chain approach which we introduced in previous years, in 2018 in coordination with the Association of Agricultural Producers of the Community of Culpina K (APRACCUK) and the municipality of Colcha K, actions were carried out to contribute to improvement of the producers' income in the following components:

- Production: continuity in the training and assistance in organic quinoa production in 16 communities, with 352 producers, to obtain organic certification from Boliviana de Certificación (BOLICERT).
- Processing: increase in the production of preroasted quinoa.
- Marketing: increased marketing of preroasted quinoa.



Due to problems with the public rural electrification grid, it was not possible to obtain electricity for the saponin removal plant, which led to a delay in the activities for processing saponin-free quinoa. Faced with this situation, we carried out an action plan together with all members of the quinoa sectoral platform to overcome the technical (transformer, cables) and administrative (delays in paperwork) problems identified.



## Education project

We have continued to support improvement of the educational quality in the San Cristóbal school nucleus, in coordination with the Consultative Council Los Lípez San Cristóbal, the Municipal Government of Colcha K, the District Education Directorate and community authorities. In accordance with the plan of the Consultative Council, and within the framework of the new Education Law, we implement Socio-Productive Projects in two schools based on the potential and different needs identified. On the other hand, we have supported the implementation of audiovisual rooms in the schools.



With regard to alternative education, and in coordination with the Vice Ministry of Alternative Education, we continue to support complementary training at the level of basic technicians and assistant technicians for the benefit of producers, artisans and chefs from the communities benefiting from the productive projects. The participants were granted the corresponding certificates.

Until 2018, we have granted 368 certificates in the fields of quinoa, camelids, gastronomy, handcrafts and dressmaking. At the level of basic technician, we have granted 137 certificates in the aforementioned categories, and at the level of assistant technician, we have granted 77 certificates in camelids and gastronomy.

## Health project

In coordination with the municipality of Colcha K, the Municipal Medical Authority, the Health Committees of the communities of San Cristóbal, Culpina K, Vila Vila, Río Grande, and the Consultative Council, we have carried out the following activities:

- Implementation of the second level hospital: following the recommendations of the Departmental Health Service of Potosí (SEDES), we have helped to make improvements in the infrastructure (x-ray rooms, operating theater, delivery room and neonatal care area). The municipal government of Colcha K did the necessary paperwork with the National Government to obtain equipment for the hospital, through the National Health Program.
- Accreditation of quality of the health services: as a result of the efforts in coordination with the Municipal Government of Colcha K, the Consultative Council and the Departmental Health Service of Potosí (SEDES), we have achieved accreditation of the health centers of San Cristóbal with 90.2% and of Culpina K with 90.1% of compliance with the requirements. Accreditation of the Río Grande Health Center is underway.
- Implementation of community-based health care: in compliance with the planning of the Consultative Council, within the framework of the Intercultural Community-based Family Healthcare Program (SAFCI) put in place by the State, we have continued to promote healthy lifestyles through multiprogram fairs.

## CASE STUDY



### Accreditation of Health Centers in the communities of San Cristóbal and Culpina K

In 2018, the authorities of the Departmental Health Service (SEDES) of the city of Potosí organized an official ceremony to award the Accreditation Certificates to the health centers of the communities of San Cristóbal and Culpina K that had complied with the standards and evaluation parameters specified by the National Program of Quality in Health (PRONACS). It should be underlined that these centers have the necessary infrastructure for inpatient care. In this way, the improvement in the quality of the provision of health services in both centers is made public and evident.

This accreditation process fills us with satisfaction since it was the result of an interinstitutional effort of which we were part together with the Autonomous Municipal Government of Colcha K, the Municipal Health Network SAFCI Colcha K, the Quality Management Unit of the Departmental Health

Service of Potosí, the Consultative Council Los López San Cristóbal, community authorities, local health committees and authorities, as well as the staff of both health centers.

Within the framework of our work to support development of the communities together with the Consultative Council Los López San Cristóbal, we have accompanied this accreditation process mainly with logistical support and by hiring specialized personnel to train not only the medical personnel of both health centers, but also the staff of other health centers in our area of direct influence and Colcha K.

The process to achieve this accreditation has taken approximately three years, in which the health personnel showed their commitment and carried out successful teamwork to meet the basic requirements



and accreditation standards detailed in the “Manual for the Evaluation and Accreditation of First-Level Health Facilities”, within the framework of the Intercultural Community-based Family Healthcare Program (SAFCI) that is part of the official policy of the Bolivian Ministry of Health.

The Manual for the Evaluation and Accreditation of First-Level Health Facilities provides for compliance with the basic requirements and two sets of accreditation standards:

- Basic requirements: the minimum time of continuous operation, external and internal signage, infrastructure in good conditions and in accordance with laws in effect, complete equipment in accordance with the National Standard for the Characterization of First-Level Health Facilities, the absence of waste and debris, the availability of basic and uniform services, and identification of staff.
- Patient care-focused standards: accessibility and continuity of care, patient assessment and care, patient and family rights, education, and communication to the patient and his/her family.
- Health establishment management standards: governance, leadership and management; staff training and qualification, quality management and improvement; epidemiological surveillance system; prevention and control of infections; waste management; biosecurity and occupational hygiene;

information management; management and safety of the facilities.

Within the framework of the Single Health System, at present the health centers in the communities of San Cristóbal and Culpina K provide the following services:

- General medicine
- Nursing (growth and development control, healthy child care) and EPI (vaccines)
- Pharmacy
- Dentistry

Taking into account that in Bolivia there are very few health facilities that have this accreditation, especially in rural areas, having completed this challenge is outstanding. This leads to a positive impact that benefits not only these communities, but also other nearby communities and the entire region as individuals and families from other places come to these health centers where they receive quality care with warmth.

We highlight the commitment and support of the Autonomous Municipal Government of Colcha K, which has made investments in improving the infrastructure and equipment of these and other health centers and in the purchase of ambulances and mobile dental care units to provide dental services in the different communities within its jurisdiction. The health center in Colcha K that provides inpatient care is also accredited.





Aguirre camp



MINERA SAN CRISTÓBAL S.A.



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## Verification of the sustainability report and ICMM principles

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Isaac Córdova







## Memorandum of independent review

### Independent Verification of the 2018 Sustainability Report – Minera San Cristóbal

#### Scope of our work

We have carried out the review of the adaptation of the contents of the 2018 Sustainability Report of Minera San Cristóbal to the Consolidated Set of GRI Standards for the preparation of sustainability reports, hereinafter "GRI Standards".

#### Standards and verification processes

We have carried out our work in accordance with ISAE 3000 - International Standard on Assurance Engagements Other than Audits or Reviews of Historical Financial Information issued by the International Auditing and Assurance Standard Board (IAASB) of the International Federation of Accountants (IFAC).

Our review work has consisted in the formulation of questions to the administration, as well as to the various areas of Minera San Cristóbal that have participated in the preparation of the 2018 Sustainability Report and in the application of certain analytical procedures and sampling review tests that they described below:

- Interviews with Minera San Cristóbal employees to learn about the principles, systems and management approaches applied to prepare the Report.
- Guided visit to the operation of Minera San Cristóbal located in the province of Nor Lípez, Municipality of Colcha K of the department of Potosí and the areas of influence to learn about the day-to-day operation and conduct interviews with the community.
- Analysis of how, based on the materiality exercise, the contents, structure and contents of the report are defined, as suggested by the GRI Standards.
- Analysis of the processes to collect and validate the data presented in the report.
- Verification, by means of review tests based on the selection of a sample of the quantitative and qualitative information corresponding to the GRI and internal contents included in the Sustainability Report, and its adequate compilation, based on the data provided by Minera San Cristóbal's sources of information.

It is confirmed that the 2018 Sustainability Report of Minera San Cristóbal is prepared in accordance with the core option of the GRI Standards.

#### General disclosures:

It was confirmed that the report meets the requirements of GRI Standards: Core option, regarding the general disclosures.

#### Specific basic contents:

We review the management approach and GRI content of the following material matters:

#### Responsibilities of Minera San Cristóbal and Deloitte Management

- The preparation of the Minera San Cristóbal 2018 Sustainability Report, as well as its content, is the responsibility of the organization, which is also responsible for defining, adapting and maintaining the management, and internal control systems from which the information is obtained.
- Our responsibility is to issue an independent report based on the procedures applied in our review.
- This Report has been prepared exclusively in the interest of the organization in accordance with the terms of our service proposal. We do not assume any responsibility towards third parties other than the Company's Management.
- We have carried out our work in accordance with the standards of independence required by the Code of Ethics of the International Federation of Accountants (IFAC)
- The scope of a limited review is substantially less than that of an audit. Therefore, we do not provide an audit opinion on the Sustainability Report.

**Deloitte & Touche Ltda.**  
**Jorge Enrique Múnera D.**  
Partner

Medellín, October 2019

## Memorandum of Independent Review

Material topics	GRI indicator and / or internal (Minera San Cristóbal)
Water	GRI 303-1. Water withdrawal by source
	GRI 303-2. Water sources significantly affected by withdrawal of water
	GRI 303-3. Water recycled and reused
Wila Khara	MM3. Total amounts of overburden, rock, tailings, and sludges and their associated risks
Biodiversity / Protected Areas	GRI 304-1. Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas
	GRI 304-3. Habitats protected or restored
Organizational culture	GRI 404-1. Average hours of training per year per employee
	GRI 404-3. Percentage of employees receiving regular performance and career development reviews
	GRI 406-1. Incidents of discrimination and corrective actions taken
	GRI 407-1. Operations and suppliers whose right to freedom of association and collective bargaining could be at risk
Human Rights	GRI 408- 1. Operations and suppliers at significant risk for incidents of child labor
	GRI 411- 1. Incidents of violations involving rights of indigenous peoples
Local Economic Development	GRI 203-1. Investments in infrastructure and supported services (communities)
	GRI 203-2. Indirect economic impact
	GRI 204-1. Proportion of spending on local suppliers
Sustainable Economic Performance	GRI 202-1. Direct economic value generated and distributed
Energy	GRI 302-1. Energy consumption within the organization
	GRI 302-4. Reduction of energy consumption
Climate Change	GRI 305-1. Direct (Scope 1) GHG emissions
Waste management	GRI 306-1. Water discharge by quality and destination
Governance	GRI 205-3. Confirmed incidents of corruption and actions taken
	GRI 307-1. Non-compliance with environmental laws and regulations
	GRI 419-1. Non-compliance with laws and regulations in the social and economic area
Mine closure planning	MM10. Number and percentage of operations with closure plans
Social license to operate	MM7. The extent to which grievance mechanisms were used to resolve disputes relating to land use, customary rights of local communities and Indigenous Peoples, and the outcomes
	MM9. Sites where resettlements took place, the number of households resettled in each, and how their livelihoods were affected in the process
Safe and security	GRI 403-1. Workers representation in formal joint management-worker health and safety committees
	GRI 403-2. Types of injury and rates of injury, occupational diseases, lost days, and absenteeism and number of work-related fatalities
	GRI 403-3. Workers with high incidence or high risk of diseases related to their occupation

## Conclusions

As a result of our review, no aspect has been revealed that makes us believe that the Sustainability Report of Minera San Cristóbal contains significant errors or has not been prepared in accordance with the GRI Standards: Core option.





## Memorandum of Independent review

Memorandum of Independent review on the implementation and communication progress on the alignment of the ICMM Principles in the 2018 Sustainability Report of Minera San Cristóbal

### Scope of our work

We have been engaged by Minera San Cristóbal to perform a limited assurance engagement in the implementation and communication progress in the alignment of the Principles of the International Mining and Metals Council ("ICMM") as indicated on pages 32 and 33 of the Sustainability Report 2018, which includes:

- ✓ The alignment of its policies to the ten ICMM Sustainable Development Principles and Position Statements (ICMM Subject Matter 1)
- ✓ The approach that it has adopted to identify and prioritize its material sustainable development risks and opportunities (ICMM Subject Matter 2)
- ✓ the existence and status of implementation of systems and approaches used to manage and report its material sustainable development risks and opportunities (ICMM Subject Matter 3) and associated select key performance indicators (ICMM Subject Matters 4)
- ✓ Its self-declaration of preparing the Report in accordance with the Global Reporting Initiative ("GRI") Standards at a core level (ICMM Subject Matter 5)

### Standards and verification processes

The above Subject Matters has been assessed against the criteria provided in the ICMM Sustainable Development Framework Assurance Procedure.

We have also carried out our work in accordance with ISAE 3000 - International Standard on Assurance Engagements Other than Audits or Reviews of Historical Financial Information issued by the International Auditing and Assurance Standard Board (IAASB) of the International Federation of Accountants (IFAC).

Our review work consisted in the formulation of questions to the management, as well as to the various areas of Minera San Cristóbal that have participated in the implementation of the ICMM Principles and in the preparation of the 2018 Sustainability Report. In summary, the activities were:

- Semi-structured interviews with managers in charge of the key processes of the company, to identify progress, good practices and challenges of the implementation of the ICMM principles, as well as to know the management principles, systems, and approaches applied to prepare the Report.
- Guided visit to the operation of Minera San Cristóbal and the areas of influence to learn about the day-to-day operation and conduct interviews with the community.
- Interviews with community leaders / beneficiaries of social investment programs.
- Analysis of the processes to collect and validate the data presented in the Report.

### Conclusion

Based on our procedures described, nothing has come to our attention that causes us to believe that the selected Subject Matters, contains significant errors or has not been prepared in accordance with: (i) the GRI Standards: Core option, and (ii) the Principles of Assurance of the ICMM sustainable development framework (including the 10 Principles and the applicable Position Statements).

### Responsibilities of Minera San Cristóbal and Deloitte Management

- The progress in the implementation and communication in the alignment of the ICMM Principles in the 2018 Sustainability Report of Minera San Cristóbal, as well as its content, is the responsibility of the organization which is also responsible for defining, adapting and maintaining the management and internal control systems from which information is obtained.
- Our responsibility is to issue an independent report based on the procedures applied in our review.
- This Report has been prepared exclusively in the interest of the organization in accordance with the terms of our service proposal. We do not assume any responsibility towards third parties other than the Company's Management.
- We have carried out our work in accordance with the standards of independence required by the Code of Ethics of the International Federation of Accountants (IFAC).
- The scope of a limited review is substantially less than that of an audit. Therefore, we do not provide an audit opinion on the Sustainability Report.

**Deloitte Asesores y Consultores**  
**Jorge Enrique Múnera D.**  
 Partner  
 Medellín, October 2019



#### ANNEX 1. Declaration of independence

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## GRI content index

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Jesús Rodríguez



## GRI content index (102-55)

GRI Standard Number	Description	Status or Location	ICMM		Page
			Related principles	Related position statements	
102-1	Name of the Organization	About Minera San Cristóbal			
102-2	Activities, brands, products and services	About Minera San Cristóbal / Infographic: Our company			
102-3	Location of headquarters	About Minera San Cristóbal / Our company			
102-4	Location of operations	About Minera San Cristóbal / Our company			
102-5	Ownership and legal form	Ethics and Business Conduct / Corporate governance structure			
102-6	Markets served	About Minera San Cristóbal / Infographic : Our company			
102-7	Scale of the organization	About Minera San Cristóbal / Operational highlights			
102-8	Information on employees and other workers	Our People / Infographic : Our People			
102-9	Supply chain	About Minera San Cristóbal / Infographic: Our company			
102-10	Significant changes to the organization and its supply chain	About Minera San Cristóbal / Operational highlights			
102-11	Precautionary Principle or approach	Environment / Approach	2, 4		
102-12	External initiatives	Our sustainability approach / Commitment to external initiatives	10		
102-13	Membership of associations	Our sustainability approach / Memberships and Associations	2	Mining partnerships for development	
102-14	Statement from senior decision-makers	About Minera San Cristóbal / Message from the President and General Manager	2		
102-15	Main impacts, risks and opportunities	Ethics and Business Conduct / Comprehensive risk management	2, 4		
102-16	Values, principles, standards and norms of behavior	Ethics and Business Conduct / Corporate governance structure / Our values	1, 2		
102-17	Mechanisms for advice and concerns about ethics	Ethics and Business Conduct / Code of Ethics and Business Conduct / Ethics and Business Conduct / Whistleblower Regulation	1, 2		
102-18	Governance structure	Ethics and Business Conduct / Corporate governance structure	1, 2		
102-20	Executive-level responsibility for economic, environmental and social topics	Ethics and Business Conduct / Corporate governance structure	1, 2		

GRI Standard Number	Description	Status or Location	ICMM		Page
			Related principles	Related position statements	
102-21	Consulting stakeholders on economic, environmental and social topics	About Minera San Cristóbal / Material topics	1, 2, 10		
102-25	Conflicts of Interest	Ethics and Business Conduct / Code of Ethics and Business Conduct Ethics and Business Conduct / Whistleblower Regulation	1, 2		
102-29	Identifying and managing economic, environmental and social impact	Ethics and Business Conduct / Comprehensive risk management	1, 2		
102-30	Effectiveness of risk management processes	Ethics and Business Conduct / Comprehensive risk management	1, 2, 4		
102-31	Review of economic, environmental and social topics	Ethics and Business Conduct / Comprehensive risk management	1, 2, 4		
102-32	Highest governance body's role in sustainability reporting	About Minera San Cristóbal / Material topics	1, 2		
102-33	Communicating critical concerns	Ethics and Business Conduct / Whistleblower Regulation	1, 2, 10		
102-34	Nature and total number of critical concerns	Our sustainability approach / Stakeholder engagement and social license to operate / Stakeholders	1, 2, 10		
102-40	List of stakeholder groups	Our sustainability approach / Stakeholder engagement and social license to operate / Stakeholders	10		
102-41	Collective bargaining agreements	Our People / Labor relations	3		
102-42	Identifying and selecting stakeholders	Our sustainability approach / Stakeholder engagement and social license to operate / Stakeholders	10		
102-43	Approach to stakeholder engagement	Our sustainability approach / Stakeholder engagement and social license to operate / Stakeholders Neighboring communities / Community relations management. Neighboring communities / Social capital	10		
102-44	Key topics and concerns raised	Our sustainability approach / Stakeholder engagement and social license to operate / Stakeholders. Neighboring communities / Social capital	10		
102-45	Entities included in the consolidated financial statements	Economic performance and contributions / Economic performance			

GRI Standard Number	Description	Status or Location	ICMM		Page
			Related principles	Related position statements	
102-46	Defining report content and topic boundaries	About this report / Material topics			
102-47	List of material topics	About this report / Material topics Infographic: Material topics			
102-48	Restatements of information	Economic performance and contributions / Economic performance			
102-49	Changes in reporting	Economic performance and contributions / Economic performance			
102-50	Reporting period	About Minera San Cristóbal / About this report	10		
102-51	Date of most recent report	About Minera San Cristóbal / About this report			
102-52	Reporting cycle	About Minera San Cristóbal / About this report	10		
102-53	Contact point for questions regarding the report	We value your comments	10		
102-54	Claims of reporting in accordance with the GRI Standards	About Minera San Cristóbal / About this report			
102-55	GRI content index	GRI content index			
102-56	External assurance	About Minera San Cristóbal / Verification of sustainability report			
103-1	Explanation of the material topic and its boundary	About this report / Material topics Infographic: Material topics			
103-2	The management approach and its components	Ethics and business conduct / Human rights. Our People / Employee Grievance Mechanisms Environment / Environmental complaints Neighboring communities / Community relations management Neighboring communities / Social capital			



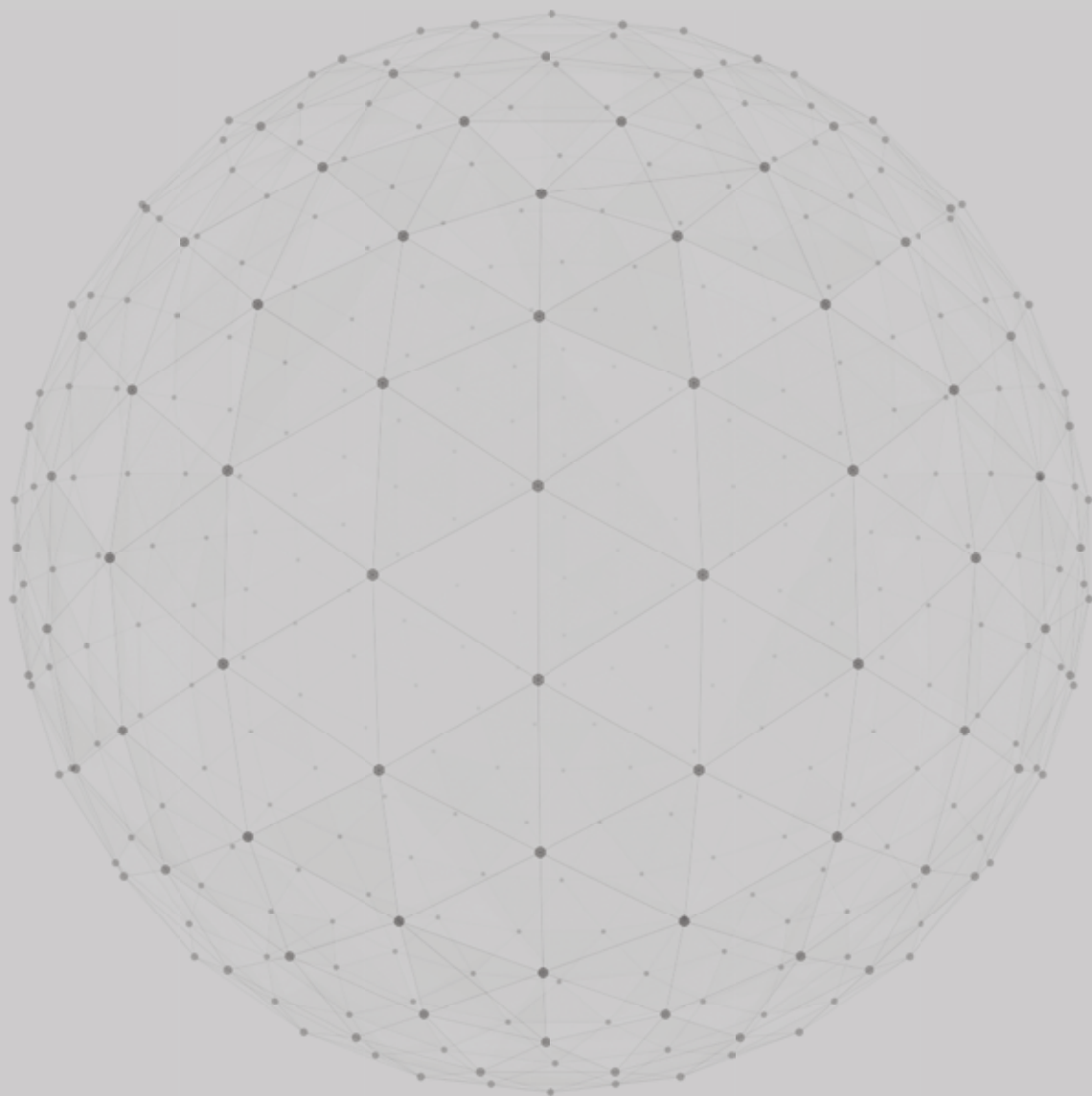
GRI Standard Number	Description	Status or Location	ICMM		Page
			Related principles	Related position statements	
103-3	Evaluation of the management approach	Our sustainability approach / Management system of Minera San Cristóbal Infographic: Our Management System			
201-1	Direct economic value generated and distributed	Economic performance and contributions / Economic performance	9	Transparency of mineral revenues	
202-2	Proportion of senior management hired from the local community	Our People / Local recruitment	9		
203-1	Infrastructure investments and services supported (communities)	Economic performance and contributions / Indirect economic impact Economic performance and contributions / Community investment	9	Indigenous peoples and mining	
203-2	Significant indirect economic impacts	Economic performance and contributions / Indirect economic impact	9	Transparency of mineral revenues	
204-1	Proportion of spending on local suppliers	Economic performance and contributions / Local procurement and our relationship with local suppliers	9		
205-1	Operations assessed for risk related to corruption	Ethics and business conduct / Anti-Corruption/Anti-Bribery	1		
205-2	Communication and training about anti-corruption policies and procedures	Ethics and business conduct / Anti-Corruption/Anti-Bribery Omission: Information not available. Training data is available on anti-corruption given during induction, but currently there is no structured information as specified in the standard. MSC will structure the corresponding data base.	1, 2		
205-3	Confirmed incidents of corruption and actions taken	Ethics and business conduct / Anti-Corruption/Anti-Bribery	1		
302-1	Energy consumption within the organization	Environment / Energy	6	Climate change	
302-3	Energy intensity	Environment / Energy	6		
302-4	Reduction of energy consumption	Environment / Energy	6		
303-1	Water withdrawal by source	Environment / Water efficiency	6	Water stewardship	

GRI Standard Number	Description	Status or Location	ICMM		Page
			Related principles	Related position statements	
303-2	Water sources significantly affected by withdrawal of water	Environment / Water efficiency	6	Water stewardship	
303-3	Water recycled and reused	Environment / Efficient use of water / Industrial water consumption (2015-2018)	6	Water stewardship	
304-1	Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	Environment / Biodiversity	2, 7	Mining and protected areas	
304-2	Significant impacts of activities, products and services on biodiversity	Environment / Biodiversity	7	Mining and protected areas	
304-3	Protected or restored habitats	Environment / Biodiversity	6, 7		
304-4	IUCN Red list species and national conservation list species with habitats in areas affected by operations	Environment / Biodiversity			
305-1	Direct (Scope 1) GHG emissions	Environment / Emissions / Greenhouse gases	6	Climate change	
305-2	Energy indirect (Scope 2) GHG emissions	Environment / Emissions / Greenhouse gases	6	Climate change	
305-4	GHG emissions intensity	Environment / Emissions / Greenhouse gases	6	Climate change	
305-5	Reduction of GHG emissions	Environment / Emissions / Greenhouse gases	6	Climate change	
306-1	Water discharge by quality and destination	Environment / Waste management / Waste rock dumps	6	Water stewardship	
306-2	Waste by type and disposal method	Environment / Waste management / Solid waste	6		
306-3	Significant spills	Environment / Significant spills	6		
307-1	Non-compliance with environmental laws and regulations	Environment / Approach	6		

GRI Standard Number	Description	Status or Location	ICMM		Page
			Related principles	Related position statements	
401-1	New employee hires and employee turnover	Our People / Changes in human resources			
401-2	Benefits provided to full-time employees that are not provided to temporary or part-time employees	Our People / Changes in human resources			
401-3	Parental leave	Our People / Changes in human resources			
403-1	Workers representation in formal joint management-worker health and safety committees	Our People / Hygiene, occupational safety and wellbeing mixed committee	5		
403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism and number of work-related fatalities	Our people / Health and safety performance / Safety performance Our people / Health Omission: Information is partially available. MSC will work to complete the information as required by standard	5		
403-3	Workers with high incidence or high risk of diseases related to their occupation	Our people / Health / Prevention and control of health problems of the worker	5		
403-4	Health and safety topics covered in formal agreements with trade unions	Our people / Labor relations / Agreements signed	5		
404-1	Average hours of training per year per employee	Our People / Training and development	5		
404-3	Percentage of employees receiving regular performance and career development reviews	Our People / Training and development	3		
405-1	Diversity of governance bodies and employees	Our people / Gender equality / MSC employees by place of residence	6		
405-2	Ratio of basic salary and remuneration of women to men	Our People / Gender equality			
406-1	Incidents of discrimination and corrective actions taken	Our People / Employee Grievance Mechanisms	3		
407-1	Operations and suppliers in which the right to freedom of association and collective bargaining may be at risk	Our People / Labor relations	3		



GRI Standard Number	Description	Status or Location	ICMM		Page
			Related principles	Related position statements	
<b>408-1</b>	Operations and suppliers at significant risk of child labor	Our People / Employee Grievance Mechanisms	3		
<b>411-1</b>	Incidents of violations involving rights of indigenous peoples	Neighboring communities / Approach	3	Indigenous peoples and mining	
<b>413-1</b>	Operations with local community engagement, impact assessments, and development Programs	Neighboring communities / Community relations management The activities with local communities are associated with the only MSC operation, therefore the scope is 100% of the operations	9		
<b>415-1</b>	Political contributions	Stakeholder engagement and social license to operate / Stakeholders	1		
<b>419-1</b>	Non-compliance with laws and regulations in the social and economic area	Economic performance and contributions / Approach	4		
<b>MM3</b>	Total amounts of overburden, rock, tailings, and sludges and their associated risks	Environment / Waste management / Plant tailings	7	Tailings governance	
<b>MM4</b>	Number of strikes and lock-outs exceeding one week's duration, by country	Our people / Labor relations / Activities carried out without signing a collective agreement	3		
<b>MM5</b>	Total number of operations taking place in or adjacent to Indigenous Peoples' territories, and number and percentage of operations or sites where there are formal agreements with Indigenous Peoples' communities	Neighboring communities / Approach / Infographic: Area of influence Our operations (100%) in our only site are performed adjacent to indigenous peoples territories, therefore the four communities of direct influence have formal agreements signed (100%)	3, 10	Indigenous peoples and mining	
<b>MM7</b>	The extent to which grievance mechanisms were used to resolve disputes relating to land use, customary rights of local communities and Indigenous Peoples, and the outcomes	Not applicable	9, 10	Indigenous peoples and mining	
<b>MM9</b>	Sites where resettlements took place, the number of households resettled in each, and how their livelihoods were affected in the process	Neighboring communities / Approach / Resettlement and mitigation of impacts	3, 10		
<b>MM10</b>	Number and percentage of operations with closure plans	Environment / Mine closure planning 100% of MSC operations have a closure plan	6, 9		



## PHOTO GALERY

Minera San Cristóbal from the sky



Dome and lime silo



Hauling in Jayula pit





Tailings thickener

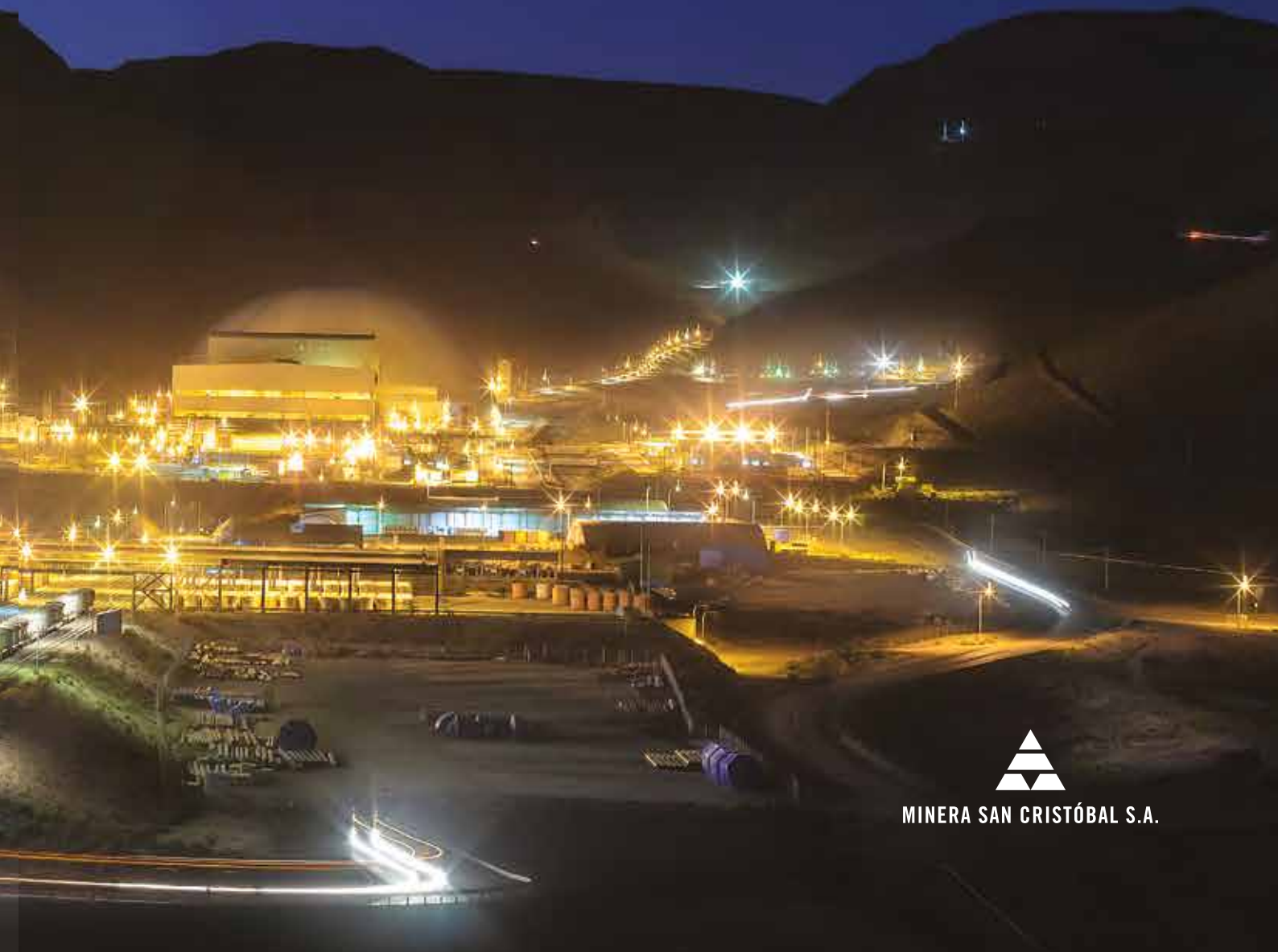


Wila Khara tailings deposit





# Building a Future



MINERA SAN CRISTÓBAL S.A.





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