



# Minas Gerais Mining Complex, Brazil

## Brazilian Mine Increases Safety & Profitability Through Dust Suppression with Rain Bird Products

Minas Gerais, a large state located in southeastern Brazil, is known for its mineral riches. Minas Gerais is Brazil's fourth largest state by land mass and second largest by population. Between 1692-95, gold was discovered in Minas Gerais, leading to a boom in new mine creation and positioning Minas Gerais as a leading area for mineral mining in Brazil.

### THE CHALLENGE

Uncontrolled dust levels at mines can create health, environmental, and safety concerns for workers and the surrounding community. Mines can face temporary closure due to poor visibility levels and incur fines when dust is left uncontrolled. Dust control with water trucks consumes a large amount of water and energy. Brazil's Minas Gerais iron ore mine is looking for a more efficient, automated dust control system.



XLR Series Water Jets

### THE SOLUTION:

Design and install an intelligent dust control system with the help of local Rain Bird distributor, IRRICOM. Utilize state-of-the-art irrigation technology with a variety of sensors to automate operation, reduce costs, and increase safety.

### KEY OBJECTIVES

- ✓ **Control Dust Levels**
- ✓ **Maximize Profit by Reducing Costs**
- ✓ **Minimize Community Health Risks**
- ✓ **Increase Safety for Workers**

### Core Products Used:

- [XLR Series Water Jets](#)
- [LDI/SDI Two-Wire Decoder Interface](#)
- [EFB-CP Series Valves](#)
- [MI Remote Interface for SiteControl](#)
- [Rain Bird® Central Control](#)
- [Automatic Screen Filters](#)
- [Flow Sensors](#)



## Site Report: Minas Gerais Mining Complex, Brazil

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### APPROACH:

#### Install XLR Series Water Jets

The XLR has an adjustable nozzle trajectory of 15–45 degrees and a radius of 81–177 feet. It's capable of wetting large, sloping stockpiles and can reach into tall railway cars and haul-truck beds.

*"The XLR proved to be the best solution for a wide range of applications at the site due to its adjustable angle and arc and long throw distance,"* explains Sergio Horta of IRRICOM.

#### Centralize Water Management

SiteControl—a central control system for a single contiguous site—was chosen for the Minas Gerais complex. SiteControl uses decoders to control the operation of the valves as well as flow and weather sensors to automate the system. It also integrates with traffic sensors and other third-party sensors at the mining complex.



“Dust control requires precise and uniform water application and reliable equipment. The project at this iron ore mining complex challenged us to provide a versatile and flexible solution.”

SERGIO HORTA  
DIRECTOR, IRRICOM

### RESULTS:

#### Reduced Operating Expenses

The XLR reduces the need for the water truck, thus saving on fuel and labor costs while delivering more effective dust control.

#### Increased Site Safety

Automation with SiteControl saves water by turning on the XLR only when dust levels and environmental conditions—which are monitored by sensors—warrant its use. The new system has replaced nearly all of the water trucks previously used to control dust and significantly reduced labor and fuel costs for Minas Gerais.

