Social responsibility solutions provided by WebGen™ wireless initiation system in open cut mines

Authors: W. Vilas Boas[1], D. Machado[2] and L Steffen[3]

Co - authors: C. Braga, G. Gontijo, L. Muñoz, R. Macedo – Orica Brazil, G Stevenson – Orica Global[4]

1.Technical Services Engineer, Orica Brazil, 30.390-070. Email: washington.vilasboas@orica.com
2.Territoy Manager, Orica Brazil, 30.390-070. Email: daltro.machado@orica.com
3. Drill & Blast Manager, Kinross Paracatu, 30.390-070. Email: lucas.reis@kinross.com
4. Manager Global Surface Mining – WebGen IPT, Orica Global, +61 413217049 Email: geoff.stevenson@orica.com

Keywords: Social responsibility, environmental impact, technology innovations, wireless initiation system, communities, new blasting techniques.

ABSTRACT

Mines operating close to communities face growing challenges, especially with their drilling and blasting activities. Proper management of environmental and community impacts is critical to provide sustainability to the mining business in the long term, by enabling the licensee to operate. This paper will present new technology solutions to minimize the impacts to communities and the environment from blasting operations. A case study of the wireless initiation projects conducted at Kinross Morro do Ouro mine, (located in Paracatu, Minas Gerais – Brazil), will be presented.

Focused on overcoming the complex challenges in the mine, Orica and Kinross searched for initiatives to optimise the drilling and blasting operations. The team evaluated the *WebGen*™ wireless initiation system for controlling environmental impacts as well as operational flexibility and productivity. Since January 2023, three planned wireless blasts to demonstrate the technology and applications were executed. In the tests, the vibration level was able to be maintained lower than the limit of 3.0mm/s while dust and flyrock impacts were well controlled.

The main benefits of using this technology for the Morro do Ouro mine are: reducing the number of blasts while increasing the blasted mass per month; control of projection of fragments using additional cover; dust control by watering the bench easily; lightning initiation risk reduction due the absence of wires or tubes on the surface; flexibility in changing the blast day to better control the noise and dust; flexibility in mine planning mining (potential application in the future).

The use of the *WebGen*™ wireless initiation system, enables improved productivity while enhancing safety and reducing impacts to communities. Implementation of this technology has enabled Kinross Morro do Ouro mine to build trust with its neighbours, maintain the license to operate, and helping to mobilise resources in a sustainable way. This has allowed Kinross to position Morro do Ouro mine as a world reference operation, especially in relation to innovation, safety, and social responsibility.