

Real time phosphorus analysis using GEOSCAN on belt analysers at Assmang Khumani Mine in the Northern Cape

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ABSTRACT

GEOSCAN on belt analysers have been widely utilised in iron ore for nearly two decades. Since the first installations in 2003, the availability of accurate and reliable grade data has become standardised across iron ore mines in the Northern Cape, where various streams are monitored continuously to ensure the optimal functioning of plants. Assmang Khumani has been at the forefront of technology adoption and has implemented 19 GEOSCANs at various locations throughout the plant, monitoring run-of-mine, stockyard feed, beneficiation plant feeds, and products.

Over the years, collaborative advances in the technology have allowed for numerous benefits and gains to be made. In recent times, there has been a concerted effort on the development of analysis for phosphorus in the material flows, and based on Scantech's experience in the phosphate industry, this element has now been calibrated to achieve statistically acceptable and repeatable accuracies for real time analysis of this element on many of Khumani's GEOSCAN analysers.

This paper provides an overview of GEOSCAN use at Khumani, while focusing on the development of phosphorus analysis. A case study of analysis results is presented for a range of analysers that have been calibrated for this element, as well as a discussion on the benefits obtained as a result of this analysis.