

OPTIMISATION OF BUSHVELD PGE SAMPLING PROGRAMMES THROUGH THE
UNDERSTANDING OF SHORT AND ULTRA-SHORT RANGE VARIABILITY OF
VARIOUS STYLES OF MINERALISATION IN LONMIN'S PGE DEPOSITS.

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A Research Report submitted to the Faculty of Engineering and the Built Environment, University of the Witwatersrand, Johannesburg, in partial fulfilment of the requirements for the degree of Master of Science in Engineering (Mining)

Johannesburg, 2015

ABSTRACT

The short and ultra-short range Platinum Group Element (PGE) grade and thickness variability of the UG2 at the Marikana operations in the Western Bushveld were examined using statistical, geostatistical and geological observations. Methods are presented that can be used to optimise underground channel sample spacing and multiple short deflection drilling. The high relative nugget effect for PGE grade results in smoothed estimates close to the local area average and opportunities for selective mining are minimal in the UG2. Robust grade estimates can still be achieved by a very significant reduction in the amount of channel sampling over that currently being conducted. The information gained from multiple deflection drilling was found to be invaluable both from creating enhanced geological interpretation of the borehole as well as a much improved level of confidence than what would be achieved from a single borehole intersection.