QUANTIFYING RESOURCE RISK BY NON-CONDITIONAL SIMULATION.

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Raising capital to drill a deeper dislocated portion of an existing orebody could only proceed once the project had attained an indicated resource status. A subjective decision about what level of confidence was sufficient for classification as an Indicated Resource was made and then, from an exhaustive data set obtained from current mining levels several hundred metres above, a theoretical estimation variance study was carried out to determine the required grid and grid pattern.

Having established the drilling grid, it was necessary to quantify the risk associated with calculating resources from such a grid. At this stage only a handful of holes had been drilled into the dislocated orebody, insufficient for any attempt at meaningful resource estimation. Using existing data from the current production levels of the mine as a “training image”, a non-conditional simulation was carried out to quantify the risk posed to the project by drilling at this grid and spacing. Geological characteristics of the mineralised surfaces above and below the dislocating fault are similar.

Using the Gaussian Turning Bands method, 50 realisations were carried out for each grid node. These point non-conditional simulation realisations were then transformed into grade-tonnage curves after a gaussian change of support method was applied to obtain results for selective mining units. Results for a number of confidence levels were generated for input into a financial model and decision making.

This paper discusses the drilling grid and non-conditional simulation studies.