Performance of 500 m$^3$ TankCell® at Kevitsa Cu-Ni-PGM concentrator

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Abstract. Outotec TankCell e500 flotation cell, with 500 m$^3$ of efficient flotation volume, has been in operation since October 2014 at Kevitsa Cu-Ni-PGM concentrator as the first Cu rougher flotation cell. The 500 m$^3$ flotation cell has proven to provide metallurgical superiority at very low specific power. On average the cell has recovered 71% of copper contained in the flotation feed. The cell has produced the concentrate with the Cu grade equal to 17% Cu. The typical specific power for the cell is around 0.4 kW/m$^3$ (blower power not included). After the start-up of the cell the operating parameters have varied. The mixing speed have varied from 4.9 to 7.0 m/s and the superficial gas velocity from 0.3 to 1.5 cm/s. At various operating parameters the mixing, gas dispersion and metallurgical performance of the cell have been evaluated. In this paper a review of the hydrodynamic and metallurgical performance of the cell is presented. The paper focuses on the interactions of mixing intensity, bubble size and metallurgical performance in industrial application.

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