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## **The Ivanplats Platreef Project, Northern Limb, Bushveld Complex**

Grobler, D.F.<sup>1</sup>, Dunnett, T.<sup>1</sup> and Brits, J.A.N.<sup>1</sup>

<sup>1</sup>Ivanplats, 82 Maude Street, Sandton, Johannesburg, [danieg@ivanplats.com](mailto:danieg@ivanplats.com)

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Since inception of the project in 1999 Ivanplats Pty Ltd (part of Ivanhoe Mines Ltd) has accumulated more than 726,000 metres of drill core. During this time, spanning a period of eleven years, 1,206 diamond drill holes were done in the process of advancing the Project from green field exploration on shallow mineralised zones through to deeper, underground targets. At the height of the drilling campaign, thirty diamond drill rigs from five exploration drilling companies were producing over 10,000 metres of core a week. In addition to resource drilling a number of dedicated geotechnical and metallurgical drill holes were done targeting the Indicated Resource area declared in March 2013. Over the history of the project, more than 40,000 density measurements, 120,000 core photos and 323,000 assays were performed at various accredited international assay laboratories. The year 2007 marked a pivotal point for the Project with the commencement of a diamond drilling campaign on an 800 m spaced drill grid which were to test the down-dip potential for the Project, the end result of this campaign being the declaration of the first underground resource in March 2011.

During advanced resource definition phases, geophysical surveys were used to create 3D conceptual models for the ore body at depth. In addition to the initial aeromagnetic surveys, the airborne Falcon gravity survey, flown in 2012, formed the basis for creating a comprehensive 3D gravity inversion model. Interpretation of this model was supplemented by a 3D seismic survey, conducted in 2013. This survey, in conjunction with down hole VSP surveys, formed the apex for integration of datasets which allowed for a detailed structural interpretation of the project area. Down-dip exploration drilling since 2011 confirmed the occurrence of cyclical magmatic units within recognisable Upper Critical Zone (UCZ) stratigraphy on the farms Turfspruit 214KR and Macalacaskop 213KR. The most important breakthrough was made with the recognition of a laterally extensive, ~20m thick, mineralized PGE-enriched pegmatoidal pyroxenite. This unit is found within the cyclic magmatic package at a stratigraphic elevation similar to the world renowned Merensky Reef. The unit was named the Turfspruit Cyclic Unit (TCU) [1] and marks the recognition, for the first time on the Northern Limb, of a stratigraphic interpretation that explains a clear definition of a type locality equivalent for the Bastard, Merensky and UG2 reefs. Subsequent work is continuing to advance understanding of the magmatic layering associated with the TCU and it's correlation with the rest of the Bushveld Complex.

The Ivanplats Platreef underground mine design is aimed at optimal mining of the indicated resources, based on a combination of longhole and drift-and-fill ore extraction methods. At a 2 g/t cut-off, the Indicated Resource contains 214 Mt at 4.13 g/t 3PE+Au, which equates to 28.5 Moz 3PE+Au. Phase 1 of the project includes the construction of a concentrator and other associated infrastructure to support a start-up to production at a nominal plant capacity of 4 Mtpa. Phase 2 includes additional ramp-up to a

plant capacity of 8 Mtpa and Phase 3 to 12 Mtpa. Construction of the Shaft 1 infrastructure commenced in 2015 with several additional vertical shafts and vent raises scheduled for construction in the near future.

*References:*

[1] Grobler D F et al. (2012): 5th Platreef Workshop. Mokopane, 9th – 11th November, 2012.

