



Makoko, Ivanhoe's third major copper discovery in the Democratic Republic of Congo, was announced October 1. Makoko, on Ivanhoe's 100%-owned Western Foreland exploration licences, is near the company's earlier tier-one Kamoanga-Kakula discoveries.



Building what will be
**③ of the world's
best mines**
in Southern Africa's
legendary mineral fields

KAMOA-KAKULA

Initial development
of two mining areas
on **world's 4th-largest**
copper discovery

**Democratic Republic
of Congo's Central
African Copperbelt**

PLATREEF

Mine projected to be
Africa's lowest-cost producer
of platinum-group metals,
plus nickel, copper & gold

**Northern Limb of South Africa's
Bushveld Complex**

KIPUSHI

Ultra-high-grade
historic mine being
upgraded to produce
zinc, copper, silver,
germanium & lead

**D.R. Congo's
Copperbelt**



Kamoakakula, DRC – Kakula Mine

Kakula mine development site, showing surface infrastructure and the portals for the twin declines to access the high-grade copper orebody. More than 2,700 metres – approximately 75% of the scheduled 3,600-metre decline development contract – have been completed.



Kamoa-Kakula – Kakula Mine

Geologist Micheline Kyenge (left) and Senior Geologist Didier Masengo mapping the geology of the underground rock formation in the Kakula service decline.



Kamoa-Kakula – Kakula Mine

Surveyor Chipeng Kavul (left) and Senior Mining Engineer Pontien Kalala in Kakula's conveyor decline.



Kamoa-Kakula – Kakula Mine

Finishing touches being applied to the Kakula Mine's control centre by members of Kamoa Copper's construction crew. Operators will conduct computerized monitoring of key underground activities from the control centre to help ensure safe and highly-efficient mining.



Kamoa-Kakula

Preparing a rig to drill another exploration hole at the Kamoa North prospect area, on the northern portion of the Kamoa-Kakula mining licence.



Kamoa-Kakula

Exploration drillers collecting a core sample from a drill rod at Kamoa North.



Kamoa-Kakula

Technician Emmanuel Ilunga inspecting and logging core from the ongoing exploration drilling at Kamoa North.



Kamoia-Kakula

Community adult literacy program at Kamoia-Kakula, sponsored by Kamoia Copper and Ivanhoe Mines and implemented in partnership with Alfa Congo, a non-profit NGO based in Kinshasa.



Kamoa-Kakula

Fabrice Mazeze with fresh tomatoes produced in the Ecolivelihood vegetable garden. The initiative is part of Kamoa-Kakula's program to support and expand food production in nearby communities.



Western Foreland

An exploration rig drilling at the Makoko Discovery on Ivanhoe's 100%-owned Western Foreland licences.



Western Foreland

Ivanhoe geologists marking another drill target in the company's program to expand and delineate the Makoko copper discovery on the company's Western Foreland licences. Makoko has been drilled over an area measuring 4.5 kilometres by 1.5 kilometres – and remains open for additional discoveries.



Platreef, South Africa

Members of Platreef's development team celebrating Shaft 1's intersection of the top of the high-grade Flatreef Deposit, 780 metres below the surface. The first ore from the underground mine development has been delivered to a surface stockpile for metallurgical sampling.



Platreef

From left: Dr. Danie Grobler, Ivanplats' Manager, Geology, Jan Mapeka, an Ivanplats geologist, and Gerick Mouton, Ivanplats' Vice President & Project Director, at the intersection of the T1 mineralized reef shown in the surrounding shaft wall and bottom.



Platreef

A sample from the first ore excavated from the Flatreef Deposit showing massive pentlandite (nickel sulphide) and chalcopyrite (copper sulphide) mineralization. Grades in the upper part of the T1 and T2 mineralized zones at Shaft 1 range up to 11 grams per tonne 3PE (platinum, palladium and rhodium) plus gold, as well as significant nickel and copper.



Platreef

A piece of high-grade Flatreef ore being examined at the new surface stockpile by Jan Mapeka, an Ivanplats geologist (left), and Gerick Mouton, Ivanplats' Vice President & Project Director.



Removing blasted rock from the box cut for Shaft 2 at the Platreef Mine. Work on the box cut is expected to be completed early in 2019.



Platreef

The box cut for Platreef's Shaft 2 will be excavated to a depth of 29 metres below surface to allow for the construction of the concrete foundation for the headframe that will house Shaft 2's permanent hoisting facilities.



Some of the students who participated in a recent science competition sponsored by Ivanplats, Ivanhoe Mines' South Africa-based subsidiary, to explore and develop creative ideas that could help to address environmental issues. Seven teams from secondary schools in local Mokopane communities near the Platreef Project presented their concepts to a panel of judges from governmental departments. Ivanhoe is committed to helping safeguard the environment it shares with its neighbours.



Kipushi, DRC

Kico employees Shepherd Chipiro and Patient Kadazi fine-tuning Kipushi's new primary rock crusher recently commissioned at the mine's 1,150-metre level.



Kipushi

A Kico electrician installing a programmable logic controller (PLC) underground at the Kipushi mine. A PLC is an industrial computer that monitors inputs and outputs, and makes logic-based decisions for automated processes or machines.



Rigger Eugene Botha (left) and fitter Graham Muldoon installing tail-rope attachments on the new Shaft 5 rock winder.



Kipushi

Installing steel cable for the new rock winder. The rock winder now is fully “roped-up”, with the head and tail ropes successfully installed and both rock skips slung into their new carrying frames, or bridles.



Kipushi

Trainees from the DRC's National Institute for Professional Training (INPP) for artisanal miners. The Kipushi Project is sponsoring training courses for the artisanal miners in plumbing, electricity and welding.



Contractors installing a new 120-kilovolt (kV) isolator switch in the main Kipushi electrical switchyard as part of the project to restring the 120-kV aluminium power line.



Kipushi

Kico employees recently drilled three water boreholes in the town of Kipushi as an Ivanhoe community support initiative. Pumps, powered by solar panels, were installed in the boreholes to help provide residents with access to clean, fresh water.