The Goldex property is located in the Dubuisson Township of Quebec and forms part of the southern Abitibi Greenstone Belt. The sequence of intermediate to mafic and ultramafic volcanic rocks that underlie the property dips steeply to the northeast. They are intruded by a large table-shaped quartz-diorite body – known as the Goldex Granodiorite – that also dips steeply to the northeast.

Mineralization

Goldex is a large, relatively low-grade orebody defined by the intensity of stockwork veins and gold grades rather than by individual veins. Most of the gold occurs as microscopic particles associated with pyrite, while the rest occurs as coarse native gold grains. There are several zones of gold mineralization with isolated ore-grade intercepts over mineable widths on the property, and all of them except the South Zone are hosted by the Goldex Granodiorite. The M and E Zones and the Deep 1 Zone contain gold-bearing quartz-tourmaline-pyrite veins and veinlets. The South Zone consists of quartz veins that have higher grades than those in the primary mineralized zones at Goldex.

The satellite Akasaba West property located 30 km from Goldex hosts a low-grade, gold-mineralized envelope characterized by the widespread presence of finely disseminated chalcopyrite; the mineralization is primarily contained within the quartz diorite unit.

Mining

Commercial production of the Goldex M and E zones was achieved in October 2013. The M and E zones are mined using long-hole stoping in primary and secondary stopes with paste backfill.

The mining method in the Deep 1 Zone is also long-hole stoping with cemented paste backfill. An automated conveyor system ("Rail-Veyor") installed on Level 120 is used for ore handling between the lowermost level of Deep 1 (Level 120) and the current ore handling facilities (Level 76). In the fourth quarter of 2020, the Rail-Veyor system reached a milestone with 5.0 million tonnes hauled since its commissioning, and in the fourth quarter of 2021, the Rail-Veyor operated at 7,143 tpd, above its design capacity of 7,000 tpd.

The South Zone is accessible from the Deep 1 Zone infrastructure, and currently provides additional incremental ore feed and grade flexibility to the Goldex mill.

Work on the pastefill network was completed in November 2021, returning it to normal operating levels. Production in the higher grade South Zone and Deep 1 Zone resumed as per the adjusted mining sequence.

In 2022, Goldex achieved multiple milestones, including record gold production since operations restarted in 2013, record annual tonnes hauled by the Rail-Veyor system, record ore tonnes hoisted and record ore tonnes milled.

Processing

Ore is treated using a two-stage crushing process, followed by a two-stage grinding circuit that consists of a semi-autogenous grinding mill and a ball mill. Most of the ground ore is fed to a gravity circuit that recovers about two-thirds of the gold, which is then smelted on site to form doré bars. Flotation recovers the rest of the gold, producing a gold-bearing pyrite concentrate.

Based on a 2006 agreement with the Quebec government, the tailings from the Goldex mill (which are not acid-generating and have good neutralization potential) are disposed of at the Manitou site 24 km away, a tailing site formerly used by an unrelated third party and abandoned to the Quebec government. The covering of the Manitou site by Goldex tailings is helping to rehabilitate the Manitou site, which has had past issues relating to acid drainage. At the same time, land use has been optimized, by avoiding the creation of a new tailings storage site for Goldex.

The thickened gold-silver concentrate from the Goldex processing plant is trucked to the LaRonde Complex, where it is fed to a cyanide leach circuit. Gold-bearing leachate is fed directly into the carbon-in-pulp circuit to recover precious metals, which are smelted into doré bars.

Exploration

The main exploration targets at Goldex continue to be the Deep 2 Zone beneath the Deep 1 Zone, and the South Zone, which is located in the volcanic rocks south of the Goldex main deposit. The South Zone gold mineralization is hosted in multiple quartz-biotite-sulphide veins that have higher grades than those in the primary mineralized zones at Goldex. Locally, there are wider mineralized areas.

In 2023 at Goldex, the Company expects to spend approximately $4.8 million for 41,100 metres of drilling comprised of 25,300 metres of capitalized exploration drilling and 15,800 metres of expensed exploration drilling, focused on the M Zone, W Zone, South Zone and at depth in the Deep 3 Zone.