Azerbaijan International Mining Company

Lithological-Structural Setting and Mineralisation Styles of Reza High Sulfidation Epithermal Gold Deposit of Ugur Exploration Area, Gedabek Ore District, Lesser Caucasus, Azerbaijan: A Newly Discovered Orebody in the Western Asia

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1. INTRODUCTION

Ugur ore perspective exploration area is located in the Gedabek ore district of Shamkir uplift of the Lok-Karabakh island arc volcanic structural-formation zone in the Lesser Caucasus Mega-anticlinorium, Azerbaijan, Western Asia. The Reza gold deposit, SHAH Yatag, Gyzydjadag, Dashbulag and Yukhari Narzan mineralisation areas are all located within the Gedabek-Bittibulag regional deep fault system of the Ugur exploration area.

The Reza high sulfidation epithermal gold deposit was discovered during geological exploration work of the northwest flank of the Gedabek gold-copper mine by Gedabek Exploration Group (GEG) in 2016. Gedabek Exploration Group discovered 2 deposits (Gadir Low Sulfidation and Reza (Ugur) High Sulfidation deposits) in last 4 year.

The gold mineralisation in the Reza deposit developed mainly during the Upper Bajocian tectonic-magmatic cycle. During Upper Bajocian times, the central tectonic zone formed a right-lateral strike-slip fault represented by a number of sub-parallel-trending faults (055°-085°) with a combined length of 1.0 to 1.5 kilometres

Location map of Azerbaijan

Location of Ugur Exploration Area on Gedabek-Bittibulag regional deeper fault system

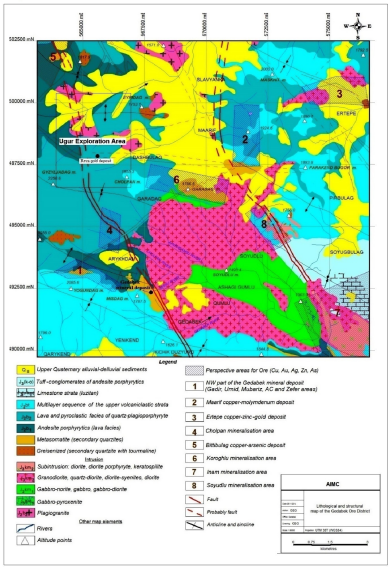
2. GEOLOGICAL SETTING

The Reza gold deposit was emplaced at the intersection of NW, NE, N and E trending structural systems regionally controlled by a first order NW transcurrent structure. The fault dips between 70° to 80° to the north-west. The faults of the central zone control the hydrothermal metasomatic alteration, gold mineralization, Upper Bajocian Atabek-Slavyanka plagiogranite massive intrusion, and in some cases are the borders of the elevated tectonic blocks formed by Lower Bajocian volcanic rocks.

In cross-section, the geological sequence is dominated by secondary quartzites (strongly altered rhyolite) being formed under the influence of the Atabek-Slavyanka plagiogranite intrusion exposures observed to the north of the gold mineralisation area. The mineralisation zone thickness within the area varies between 80 to 120 metres.

The formation of the gold mineralisation at the deposit is interpreted as being of shallow high sulfidation epithermal systems type. The mineralisation occurs in two different styles; 1) well-confined hydrothermal breccias and 2) associated with underlying pyrite stock-stockwork.

Rocks in the alteration zone area strongly brecciated, and exhibit argillic alteration, with strong limonite and hematite alteration. Crystalline hematite is also observed in gossan zones. Near surface intense barite and barite-hematite vein and veinlets are present.



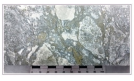
Lithological-structural map of the Gedabek Ore District (perspective areas for Cu, Au, Ag, Zn & As).

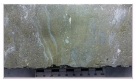
3. MINERAL ZONATION

Main mineralisation in the Reza gold deposit consists of hematite-barite-quartz-kaolin veins - veinlets and breccia, pyrite stock - stockwork and quartz - sulfide veins. The central surface expression of the mineralisation exhibit accumulations of hydrous ferric oxides cementing breccias of quartz and secondary quartzites overlaying secondary quartzites with vein-veinlets barite-hematite mineralization.In areas of erosion, gossans are represented by "reddish mass" of oxidation products of stockwork limonite-hematite ores is observed. Within trenching and shallow pits, mineralised zones vary in thickness from about 5-10 metres and contain gold with a grade of 0.3-3.5 g/t and silver with a grade of 1.0-45.0 g/t. Subsequent drilling has defined the depth of oxide zone mineralisation up to 100 metres, with an average depth of 60 metres.

Barite-hematite-quartz-kaoline. The dominant style of mineralization on the project is from 1cm to 1m-wide veins filled with variable amounts of red hematite, specular hematite, and quartz. In outcrop the dominant mineral is earthy red hematite, which is ubiquitous in these stockwork, but remnant patches and stockwork of barite can be found, indicating that the red hematite is likely a weathering product of hypogene barite. Larger stockwork include higher amounts of quartz. Many veinlets contain vugs and open-space-filling textures of euhedral quartz and kaoline. The majority of hematite-barite- quartz-kaoline mineralization observed to date occurs as sub-decimeter fractures, either as individual veinlets, zones of parallel sheeted veinlets, or networks of cross-cutting veinlets in some places forming stockwork zones.

Disseminated pyrite. The first stage of mineralization is mainly represented by disseminated pyrite occurring together with quartz and adularia alteration through the below contact of the deposit. Gangue minerals are mainly represented quartz and adularia, and minor chalcopyrite. The size of disseminated pyrite is inferio r to 1mm, but the intensity of pyrite dissemination is variable in different parts of the andesite porphyry





MINERAL ASSOCIATIONS

The high grade gold observed in the following mineral association (based on assay data):

1. Barite-hematite-quartz-kaoline;
2. Hematite-quartz-kaoline;
3. Barite-sulfide-quartz;

The low grade gold observed in the following mineral association:

4. Disseminated pyrite;
5. Stock-stockwork pyrite;
6. Disseminated and veinlets covellite-pyrite (+/- turquoise) mineral associations.

The 2-3 stages associations are clearly connected with the mineralization process. Each association can occur separately, spots and impregnations. As well, these alteration packages can occur together. All mineral associations can occur in the mineralized halo showing intense silicification of the rocks. Disseminated pyrite observed all of primary rock in the deposit.

ORE MINERALS The ore minerals are concentrated essentially as breccia-stockwork and disseminated type mineralisation in central part of the deposit. The stockwork zone has been developed due to ore-associated silica precipitation following the second boiling of the hydrothermal system, which was triggered by the Atabek-Slavyanka plagiogranite intrusions.

Ore minerals are mainly disseminated as fine grains in the stockwork of the brecciated secondary quartzite. In addition to the minerals described above, thin-flakes of sericite can occur in the centre of the quartz veins and spots and can be replaced by chlorite or chlorite-ankerite. Chlorite occurs only in contact with carbonate with sericite forming the edges between these minerals. Chalcopyrite rarely occurs together with pyrite and forms thin veinlets and impregnations.

4. HYDROTHERMAL ALTERATION

At the deposit, mineralization occurs with strong argillic alteration, with stockwork, disseminated, and veinlets, within secondary quartzite breccias and mineralized east-northeast structures. Oxide facies dominate at the surface but become sulfide mineralization at depths of less than 50-100 m.

Two distinct alteration events are recognized by GEG AIMC, 2016. During emplacement, the early granodiorite intrusions altered the andesite porphyritic rocks. Later, the main mineralization altered the silicified andesite porphyritic and secondary quartzite rocks generating a zoned alteration assemblage that includes moderate to selective quartz, sericite, argillic and silicification alteration among others. Alteration to kaolinite and iron oxides occur locally, as does an apparent epithermal overprint that produces banded and chalcedonic textures and which may be associated with observed barite-hematite and pyrite mineralization.

Gold at Reza deposit is concentrated in the gossan, argillic and limonitezation-hematitized alteration zones and low grade gold in phyllic zone (pyrite stock and stockwork).Transition zone at the oxide-phyllic zones boundary is largely north-south trending fault-controlled silica flooding, which becomes northeast striking, east and west of the boundary.The deposit alteration studies about 20-25pcs samples from intrusive and host rock showed in order of dominance, intermediate argillic, propylitic, advanced argillic, phyllic, silicification and gossan alteration zones.

The dominant types of alteration on the project are hematite alteration and secondary mineralization of pyrite . Minor silicification and clay alteration of andesite porphyritic rocks are also present. Hematite alteration consists of hematite staining surrounding hematite - barite- quartz association. This type alteration is accompanied in some places by silicification and limonitezation

Hematite mineralization, oxide zone:
Left side-hematite vein on andesite porphyritic fractures and Right side- barite veinlets oxidation secondary

DEPOSIT TYPE The Gedabek NW project is a new local ore belt system discovered by GEG while following-up high priority alteration targets in a key mineralization area located in the Gedabek-Bittibulag ore belt of the Gedabek ore district in Azerbaijan. The ore belt contains a series of Jurassic-age porphyry, high-sulfidation and low-sulfidation epithermal gold deposits and mineralization occurrences. GEG geologists believe there existed good potential to discover additional, gold and gold-copper deposits in the underexplored extensions of this belt (see previous geological exploration reports, 2013-2015)

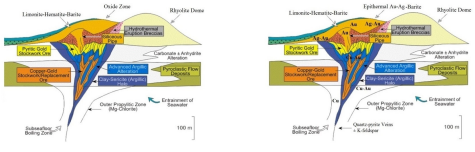
The remote sensing anomalous (in NW and SW) area is believed to remain open in all directions under shallow, post-mineral cover. Deposit alteration signature has characteristics which suggest the current outcrop level may be near the top of a mineralized, gold-bearing high sulfidation epithermal (HSE) system.The gold mineralization at the deposit is interpreted as forming in shallow high sulfidation epithermal systems. The mineralization has been noted to occur in two different styles:

- well-confined hydrothermal breccias;
- associated with pyrite stock-stockwork.

The majority of the deposit material and current estimates are formed within the barite-hematite-quartz-kaoline mineralization in the secondary quartzite rocks. The main brecciation and stockwork are hosted within secondary quartzite, sometime massive silicified andesite porphyritic rocks.

Outcropping gold mineralization at the project is oxidized with no sulfides recognised at surface. Mineralization is hosted by brecciated, and intense advanced argillically-altered andesitic volcanics and possible domes, including large areas of "powdery" probably alunite-opal alteration . The outcropping alteration at the deposit is typical of the upper steam-heated levels of high-sulfidation epithermal (HSE) deposits, which in most mineralized systems of this type, may cap higher-grade gold mineralization which is hosted by underlying vuggy and oxide zones.

From our current mapping and sampling, the gold mineralization at the deposit appears to form a crescent shape surrounding a "core" of barite - hematite mineralisation in advanced argillically & silicification - altered porphyritic andesite host rock.



Geological model of the Ugur Area (based on international experiences)