## Geological exploration for 2021

***Summary***

- New mineral deposit "Zafar" discovered at Gedabek
    - Maiden Mineral Resource published on 16 August 2021 with the final Mineral Resource published on 21 March 2022
    - Extensive core drilling carried out throughout the year at the deposit
- New sub-vertical gold vein, "Hasan", discovered at Gosha
    - Located to the immediate south of the existing Gosha mine
    - Vein can be easily accessed from existing underground mine workings
- The Gedabek and Gadir underground mines are now connected and form one continuous tunnel system and extensive underground core drilling took place in 2021
    - Extensions to the underground mines discovered
- New mineralisation body discovered at Gilar
    - Ore body is a south-west continuation of the deposit
- Infill drilling carried out in pit 5 and pit 9 of the Gedabek open pit
    - Drilling intersections returned with grades of up to one per cent. copper in this copper-rich area of the main open pit
- No geological field work was carried out at Ordubad during 2021 due to COVID-19 travel restrictions

***Gedabek***

*Zafar deposit*

The discovery of a new mineral deposit "Zafar" was announced in early 2021. The deposit is located 1.5 kilometres north-west of the existing Gedabek processing plant.

The geology of the area is structurally complex, comprising mainly of Upper Bajocian-aged volcanics. The mineralisation seems to be associated with a main north-west to south-east trending structure, which is interpreted as post-dating smaller north-east to south-west structures. In the south-west area, outcrops with tourmaline have been mapped, which can be indicative of the potential for porphyry-style mineral formation. The exploration area is located along the regional Gedabek-Shekarbek fault system, with Shekarbek being another target area known to host copper mineralisation, situated in the north-west of the zone.

75 core drill holes with a total length of 36,432 metres were completed at Zafar in 2021. 20 drill holes returned grades above reportable limits. One drill hole encountered abundant sulphide mineralisation with a thickness of 133 metres and grading 0.85 per cent. copper, 1.35 per cent. zinc and 0.58 grammes of gold per tonne. Bench scale X-RAY diffraction ("XRD") analysis of drill core samples commenced during the year. This uses a portable XRD machine to undertake geochemical analyses of core samples. The results are obtained in "real time" without the need to wait for laboratory analysis which enables a better focused drill programme.

The maiden Mineral Resource estimate for the Zafar deposit was published on 16 August 2021. The final Mineral Resource estimate was completed during 2021 and early 2022 and published on 21 March 2022 and is contained within table 5 above.

*Gedabek and Gadir underground mines*

The Gedabek and Gadir underground mines are now connected and form one continuous underground network of tunnels accessible from both the Gadir and Gedabek portals. However, a significant fault structure separates the two mines. Underground drilling was conducted along the tunnel connecting the Gedabek and Gadir mines and 45 core drill holes (19 BQ and 26 HQ/NQ diameter) with a total length of 3,328 metres were completed. This underground drilling enables the Company to capture truly 3-dimensional data. Underground mapping was also carried out. The drilling results have yielded extensions to the Gedabek and Gadir underground mines.

*Infill drilling at pit 5 and pit 9 of the Gedabek open pit*

Infill reverse circulation drilling at pit 5 and pit 9 of the Gedabek open pit was carried out in 2021. The drilling was for grade control and to locate ore extensions for mining. 95 drill holes for a total length of 7,484 metres of drilling were completed. Notable intersections included 6 metres at 2.86 per cent. copper and 5 metres at 3.06 per cent. copper in this copper-rich area of the Gedabek open pit.

*Avshancli*

Avshancli is a significant mineral district which is 10.5 kilometres north-east of the Gedabek open pit. Avshancli is a gold-copper occurrence comprising three defined areas, Avshancli-1, -2 and -3. 92 reverse circulation drill holes with a total length of 2,176 metres were completed at Avshancli-1 and 9 reverse circulation drill holes with a total length of 1,022 were completed at Avshancli-2 in 2021. The geological work to date at Avshancli-1 shows discontinuous surface mineralisation with gold grades dropping off from the surface as the structures narrow with depth. Given the distribution of mineralisation, economic volumes of ore are likely to be small.

*Gilar*

Gilar is a mineral occurrence located approximately two kilometres south of Avshancli-1. The area hosts two styles of mineralisation, gold in quartz veins and hydrothermal gold-copper. 37 surface core drill holes were completed in 2021 for a total length of 14,165 metres. The drilling allows the determination of zone continuity and a new mineralisation body was discovered which is a south-west continuation of the deposit. The Company continues to assess the economic feasibility of tunnelling for further exploration at Gilar to allow for underground drilling and bulk sampling.

*Ugur open pit and Ugur Deeps*

The Ugur pit has now been fully exhausted. However, in the first half of the year, drilling continued in the vicinity of the depleted open pit (Ugur Deeps region) to locate possible extensions to the deposit. Ten core drill holes with a total length of 3,360 metres were completed, targeting high-grade copper-silver

mineralisation. However, the drill rigs at Ugur Deeps were redeployed in the second half of the year and no further drilling was carried out. Limited trench sampling was undertaken in the second half of the year.

**Gosha**

The Gosha contract area, which hosts the Gosha mine, is located next to the Armenian border. Due to the conflict between Azerbaijan and Armenia, geological field work was carried out only in the second half of the year. This was mainly surface core drilling in the vicinity of the Gosha underground mine. However, some outcrop and trench sampling was also carried out. The surface core drilling resulted in the discovery of a new sub-vertical high gold grade mineralised vein ("Hasan"), after surface mapping suggested the presence of gold at the location. The new gold vein can be accessed via a short tunnel from the existing tunnelling at Gosha.

The Gosha mine was previously thought to consist of two narrow gold veins, zone 13 and zone 5 to the south. Mining has previously taken place from both veins. Hasan is located immediately south of the zone 5 and intersects it at one point. The host rock mostly exhibits silicification and kaolinisation alteration which changes to quartz-haematite alteration in andesite.

During 2021, 15 core drill holes for a total length of 4,618 metres were completed. Outstanding grades of up to 229.5 grammes of gold per tonne were returned, with significant drill intersections as follows:

| Hole i.d | Depth | | Downhole Length | Gold | Silver |
|---|---|---|---|---|---|
| | *From* *meters* | *To* *meters* | *meters* | *g/t* | *g/t* |
| 21GODDH01 | 65.80 | 69.40 | 3.20 | 53.42 | 5.00 |
| | 66.80 | 67.30 | 0.50 | 229.50 | 5.00 |
| | 61.00 | 71.00 | 10.00 | 23.24 | 5.00 |

New geological maps were also compiled for the Gosha Contract Area using all previously obtained data. This is the first stage of a desktop study to consolidate all historical and newly obtained data to better understand the regional geology.

***Ordubad***

Due to COVID-19 restrictions, drill access was restricted during 2021 and therefore very limited geological field work was completed.

The Company is awaiting results from the samples collected by the geological team from the Natural History Museum London as part of their ongoing "From Arc Magmas to Ores" ("FAMOS") international research project. This study is being carried out to determine whether there are any indications of a

porphyry system within the Ordubad Contract Area. The results of this investigation have unfortunately been delayed by the COVID-19 pandemic.