AMMC Field Excursion

Kalmakyr and Yoshlik-I Open Pits • Core Storage Facility • Geological Model of the Ore District

#1

in the world by gold content in copper ore

#3

in the world by volume of ore reserves (JORC)

9 km

length of the future unified open pit

FIELD EXCURSION PROGRAMME

GEOMIN 2026 • Almalyk, Tashkent Region • 65 km from Tashkent

01 Kalmakyr Open Pit Viewing Platform

- Panoramic view of the 3.7 × 1.7 km pit — one of the largest in Central Asia
- Depth of over 500 m — a breathtaking scale of mining operations
- Core samples from all AMMC sites are displayed at the platform
- Safety briefing and protective equipment are provided by the host

02 AMMC Core Storage Facility

- The first modern core sample archive in Uzbekistan
- 2 warehouses of 50×25 m — capacity of 60,000 core boxes
- Core from deposits: Kalmakyr, Yoshlik I, Angren, Chadak, Khandiza, etc.
- Core documentation to the JORC standard is available on request

03 AMMC Department of Resources and Mining

- A 2×2 m relief geological model of the Almalyk Ore District
- A collection of reference rock and ore samples from all deposits
- 3D digital resource models (JORC standard)
- Briefing on geology, exploration history and development prospects

ALMALYK ORE DISTRICT — GEOLOGY AND HISTORY

850 km² • South-western spurs of the Kurama Range • Tashkent Region, Uzbekistan

1925 Geologist S.F. Mashkovtsev first describes oxidized copper ore outcrops at the surface of Kalmakyr

1927 B.N. Nasledov publishes the first systematic description of the deposit

1931 Start of systematic exploration — a major copper-molybdenum porphyry object is confirmed

1940 Initial reserves approved: 1.7 Mt of copper in oxidized ores

1949–54 Detailed exploration; design documentation for mine construction completed

1959 Launch of the Kalmakyr open pit — birth of AMMC (1 July 1959)

1996 Final reserve estimate: ~4 billion tonnes of ore

2017+ Start of developing Yoshlik I — the largest undeveloped Cu-Au deposit in the CIS

DEPOSITS AND SITES OF THE ORE DISTRICT

Kalmakyr: Cu-Mo porphyry. 3.7×1.7 km, depth >500 m. In operation since 1959.

Yoshlik-I: The largest Cu-Au asset in the CIS. Capacity 74 Mt/year. Since 2017.

Yoshlik-II: An adjacent prospective area; reserve estimation is ongoing.

Sary-Cheku: A satellite of Kalmakyr; a similar type of Cu-Mo mineralization with higher copper grades.

Barakali: A satellite Cu-Mo deposit of the Almalyk ore field.

Balykty: A north-western structural zone; prospective for Cu-porphyry targets.

Angren: A coal and polymetallic (Pb, Zn) deposit.

Chadak / Khandiza: Pb-Zn skarn deposits, Namangan and Surkhandarya regions.

MINERALOGY OF THE KALMAKYR–YOSHLIK SYSTEM

Cu-Mo porphyry system in Middle Carboniferous syenite-diorites and Upper Permian granites

Ore minerals: Chalcopyrite, molybdenite, pyrite, bornite

Oxidation zone: Malachite, azurite, chrysocolla, native copper

Gold and silver: Electrum, native gold (Au in chalcopyrite matrix)

Molybdenum: Molybdenite (MoS_2) — an economically significant component

Host rock (vein): Quartz, K-feldspar, biotite, sericite, chlorite

Main host rocks: quartz porphyries, diorites, syenite-diorites

Main elements: copper, molybdenum, gold, silver

Secondary minerals: Jarosite, goethite, hematite (gossan cap)

⭐ Reference samples of all mineral groups are displayed at the AMMC Department of Resources

Reference samples of the Almalyk Ore District

KALMAKYR OPEN PIT AND VIEWING PLATFORM

In operation since 1959 • 24/7 mining • ~35,000 AMMC employees

VIEWING PLATFORM

A specially equipped platform with railings and information stands
Panoramic view of the 3.7 km-long pit — a breathtaking industrial spectacle
Real-time observation of drilling and blasting, excavation and ore haulage
Safety briefing and PPE are provided by the host

KEY DATA

Pit dimensions	**3.7 × 1.7 km**
Depth	**> 500 m**
Ore type	**Cu-Mo porphyry**
In operation since	**1 July 1959**
Excavators	**15 (8× 15 m³, 7× 10 m³)**
Processing	**CEP-1, 2, 3 (60 Mt/year)**

Core samples from Kalmakyr, Yoshlik-I, Barakali, Balykty and other sites of the ore district will be displayed at the platform for hands-on study

YOSHLIK-I OPEN PIT — CONVEYOR ORE DELIVERY TO CEP-3

Development began in 2017 • The largest undeveloped Cu-Au asset in the CIS • Merger with Kalmakyr by 2028

#1 by gold content in Cu ore

#2 by average Au fineness in Cu deposits

#3 by volume of ore reserves

#6 by copper content

⚙ IN-PIT CRUSHING AND CONVEYING TECHNOLOGY — CEP-3

- Ore is crushed in-pit: KKD-1500 cone crushers down to a 300–350 mm fraction
- 6 apron feeders deliver the crushed material onto 2 main conveyors
- 2 conveyor belts with a total length of 4.2 km (each ~1.4 km + transfer points)
- Danish-made; belt speed of 7 m/s; transport costs reduced threefold
- Ore is delivered directly to CEP-3 (design capacity of 60 Mt/year)
- Fully automated Siemens system — controlled from a single dispatch centre

Construction of the Yoshlik-I deposit and CEP-3

DEVELOPMENT PROSPECTS

By 2028 the Kalmakyr and Yoshlik-I open pits will merge into ONE 9 km-long mega-pit, which will surpass Chile's Escondida deposit and become the largest copper open pit in the world. Total investment: $4.62 billion. Annual output: 917,000 t of copper concentrate + 2,500 t of molybdenum. The Yoshlik-I ore contains nearly every element of the periodic table.

AMMC CORE STORAGE FACILITY — ARCHIVE OF GEOLOGICAL MEMORY

The first modern core sample archive in Uzbekistan

INFRASTRUCTURE

- 2 dedicated warehouses, 50 × 25 m each — the first of their class in Uzbekistan
- Total capacity: 60,000 core boxes for the entire life of the mine
- Climate protection, systematic labelling and archiving of material

CORE SAMPLE COLLECTIONS

- Kalmakyr and Sary-Cheku — Cu-Mo porphyry stratigraphy (since 1959)
- Yoshlik I — world class: Cu-Au intervals with sensational grades
- Angren, Chadak, Khandiza — polymetallic and skarn series
- Barakali, Balykty and all sites of the Almalyk Ore District

DOCUMENTATION TO THE JORC STANDARD

Core documentation, sampling and quality control (QA/QC) can be prepared in accordance with the JORC Code at the AMMC Department of Resources and Mining upon request from accredited organizations.

AMMC specialists documenting core material

CORE STORAGE FACILITY — SCALE AND SIGNIFICANCE

One of the AMMC core storage warehouses — a capacity of 60,000 boxes

Uniqueness

The first archive of this scale in Uzbekistan — built to international standards for storing and systematizing core material

Diversity

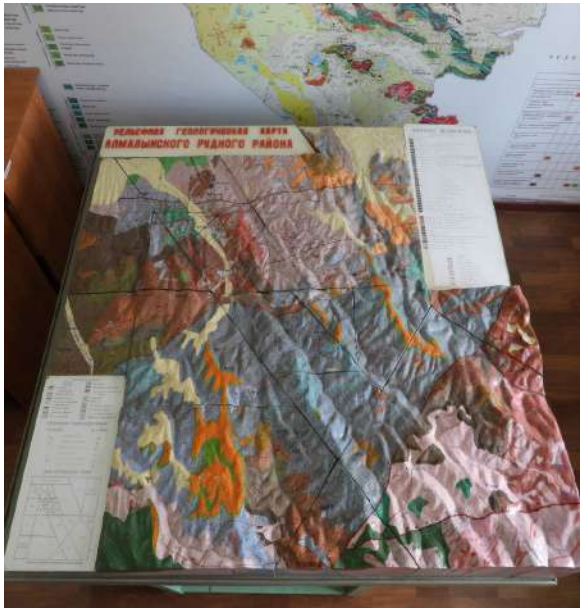
The facility holds core from ALL of AMMC's main deposits, making it an indispensable resource for geological research

JORC / Code

Full documentation to the JORC Code is available on request, including descriptions, photo-logging and QA/QC documentation

AMMC DEPARTMENT OF RESOURCES AND MINING

Science, data and geological heritage — at the heart of Almalyk's mining future



Relief geological map of the Almalyk Ore District

Collection of reference rock and ore samples

Relief model

A physical 2×2 m relief geological map — a unique visualization of the structure of the entire ore district

Reference samples

A complete collection of rocks and ores from all deposits: from chalcopyrite to molybdenite and rare elements

3D JORC models

Digital block resource models to the JORC standard — the result of decades of exploration work

Briefing

AMMC specialists will present up-to-date data on reserves, exploration history and strategic prospects

📍 Address: 53 Amir Temur St., Almalyk • 65 km from Tashkent • Website: agmk.uz

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Please register by emailing aaly@seg.org

Kalmakyr Open Pit
Viewing platform and core samples on site

AMMC Core Storage
The first archive of this level in Uzbekistan

Geological Model
Relief map and reference ore samples


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