

Mining Project

Underground Mining of Bauxite at "Kaniani Z" underground mine

Phocis Regional Unit, Central Greece

Project

Technical Study for the Underground mining of Bauxite deposits

Project Schedule

Design: 2019

Geology

Parnassos – Giona geotectonic zone
Bauxite of the 3rd horizon

Underground Mining Method

Overhand cut & fill method, mining starting at the lower level and works upward for mine "Kaniani Z"
Room and pillar method for mine "Kaniani Z-SW"

Ore type

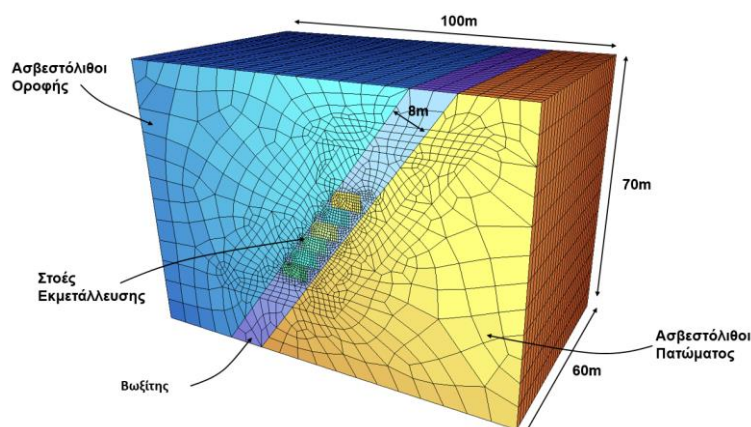
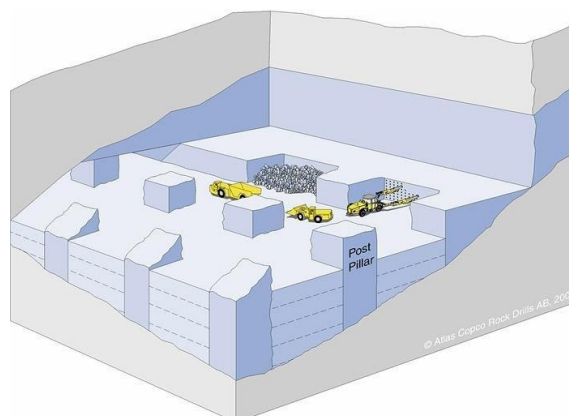
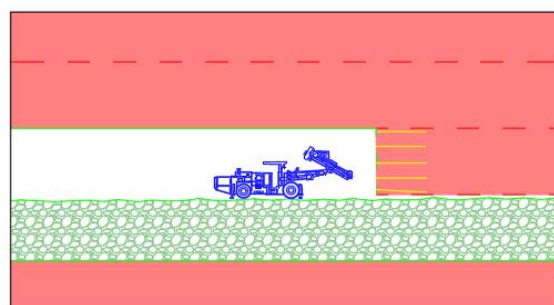
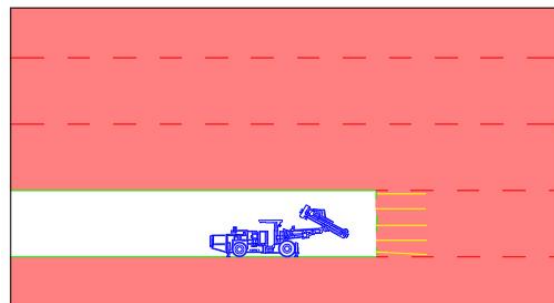
Bauxite

Our Services

- Determination of the optimum mining methods
- Design of underground access and development adits
- Calculation and dimensioning of the main underground ventilation system according to the Mining Legislation
- Analytical design of mining cycle (drilling, blasting, scaling, LHD, rock support) and all corresponding auxiliary works (ventilation, pumping, hydraulic or/and mechanical backfilling)
- Calculation of the mining and recoverable reserves
- Mining works and project's completion time schedule (mining of the estimated recoverable reserves)
- Estimation of capital expenditure (CAPEX) and operational expenses (OPEX)

Client

IMERYS Greece



Three dimensional calculation models and simulations, representations of mining deposits and access works, three dimensional simulation of mine layout

Mining Project

Underground Bauxite Mines

Phocis Regional Unit, Central Greece

Project

Design and Consultancy Services for the optimization / modification of the underground mining method of Bauxite Ore at Koukouvista 1A-5 & Krystallidi 2-49 mines

Project Schedule

Design: 2019

Geology

Parnassos—Giona geotectonic zone
Bauxite of the 3rd horizon

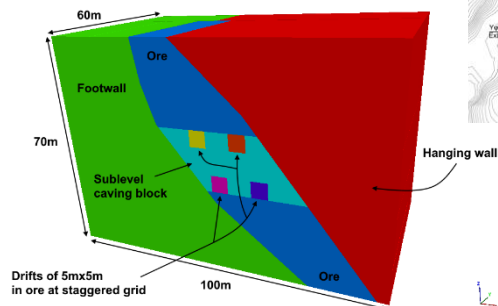
Underground Mining Method

Current Method:

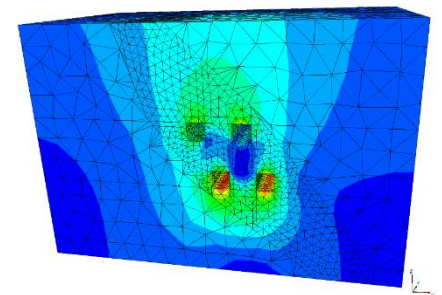
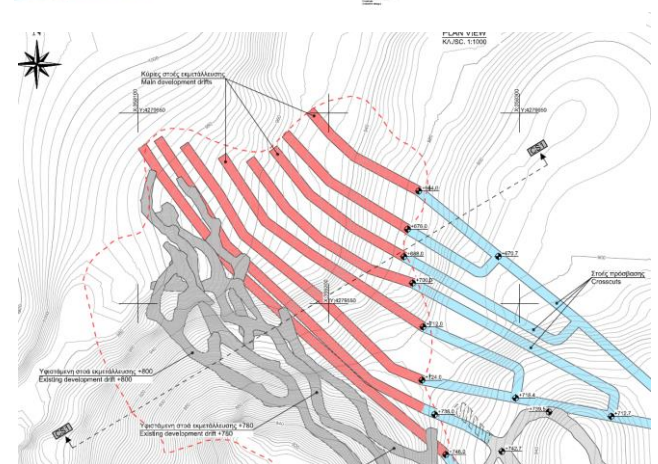
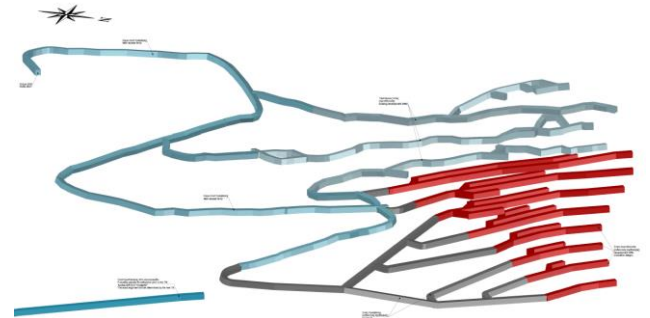
Sublevel stopping combined with room and pillar method

Proposed Alternate Method

Longitudinal sublevel caving

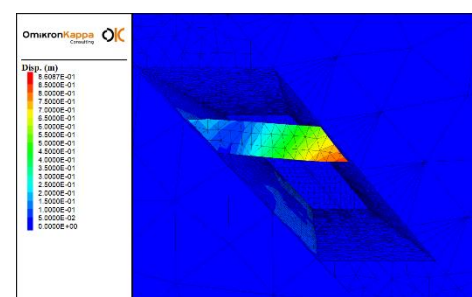
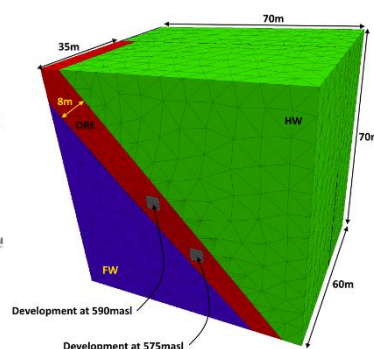
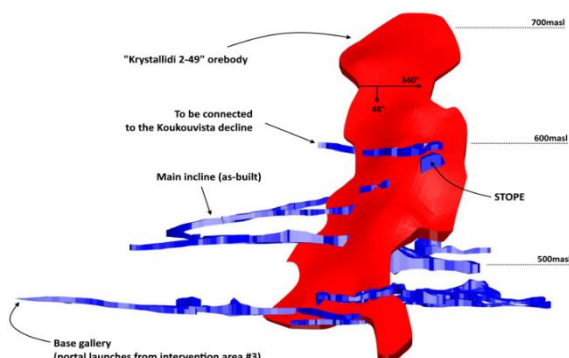


Three dimensional representations of mining deposits and access works, three dimensional simulation of mine layout



Our Services

- Review of existing studies and initial data
- Review of the approved mining study
- Proposal for additional geotechnical investigation program and supervision of respective works
- Geotechnical assessment of the design parameters for the encountered formations during the underground mining
- Evaluation and optimization of the existing approved mining method
- Investigation and preliminary design of an alternative mining method for bauxite mining
- 3D design of access and bauxite development works regarding the proposed alternative mining method
- Elaboration of three dimensional (3D) computational simulations, in order to confirm the feasibility of the proposed mining method
- Elaboration of three dimensional (3D) computational simulations for the back analysis of the developing failure model



Client

IMERYS Greece

Krystallidi 2-49 Mine: Three dimensional (3D) computational simulations for the back analysis of the developing failure model

Vorioi Fakoi Underground Mine

Calculation of groundwater inflows – Dewatering design

Phocis Regional Unit, Central Greece

Project

- Evaluation of the regional groundwater regime, based on available data (groundwater levels in boreholes, on-site review of existing conditions) in underground mine
- Mine dewatering design for inflows up to 300m³/h

Project Schedule

Design: 2018

Geology

Parnassos – Giona geotectonic zone
Bauxite of the upper horizon

Mining Method

Room and pillar

Commodity

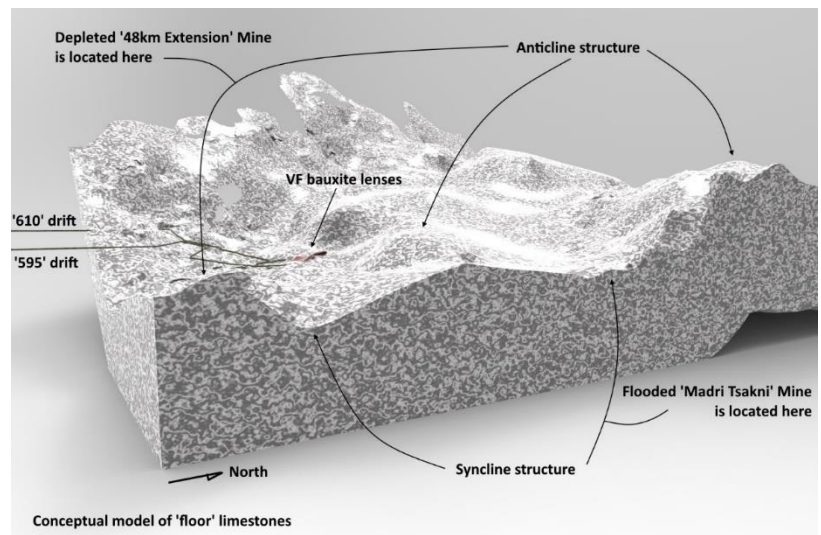
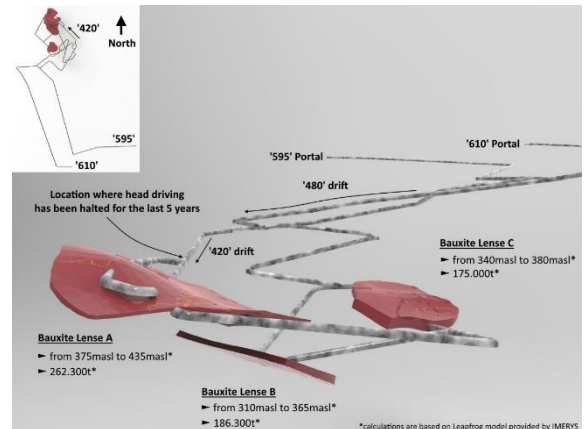
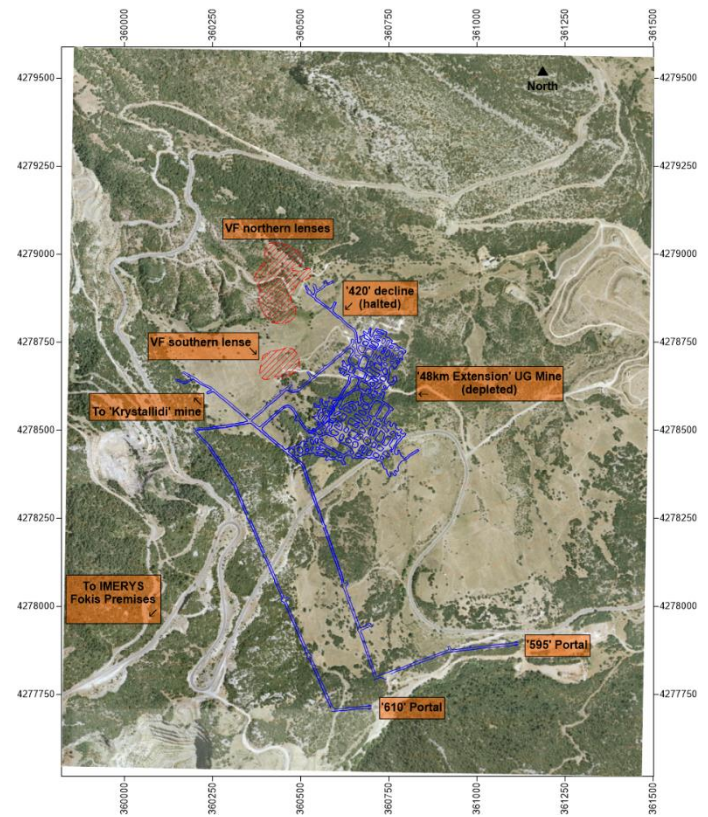
Bauxite

Our Services

- Review of available technical studies, drawings and raw data
- On-site review of existing conditions
- Development of mine-scale geological/tectonical regime
- Numerical assessment of potential groundwater inflows
- Long-term mine dewatering design

Client

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S-SW Nera 3 Underground Mine Supplementary Technical Study Phocis Regional Unit, Central Greece

Project

Mine design for permitting the development of newly discovered bauxite lenses

Project Schedule

Design: 2018

Geology

Parnassos – Giona geotectonic zone
Bauxite of the upper horizon

Mining Method

Room and pillar

Commodity

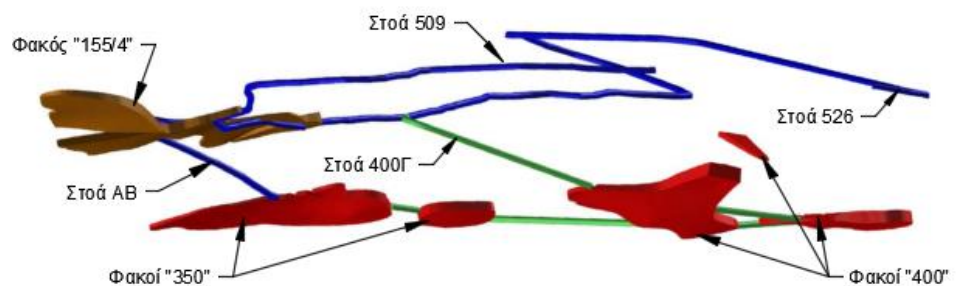
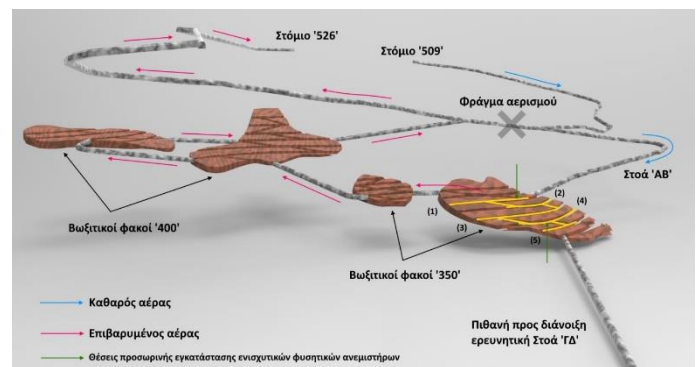
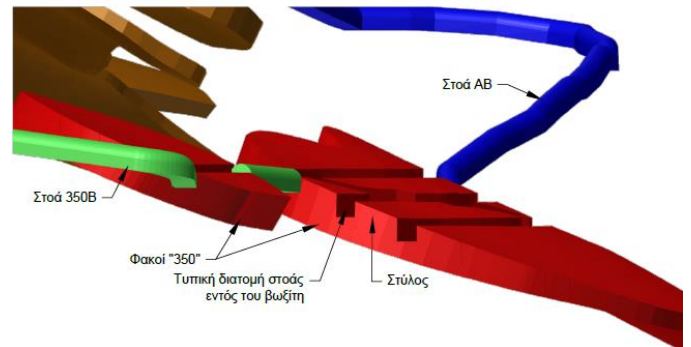
Bauxite

Our Services

- Review of available technical studies, drawings and raw data
- 3D design of main access and bauxite development works
- Analytical assessment of pillar dimensions
- Main and auxiliary mine ventilation design

Client

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Nera 9 & 11 Underground Mines

Optioneering on mine design scenarios

Phocis Regional Unit, Central Greece

Project

Optioneering methodology on potential mining scenarios to put the mines into production the soonest possible

Project Schedule

Design: 2018

Geology

Parnassos – Giona geotectonic zone
Bauxite of the upper horizon

Mining Methods

Room and pillar
Sublevel stoping

Commodity

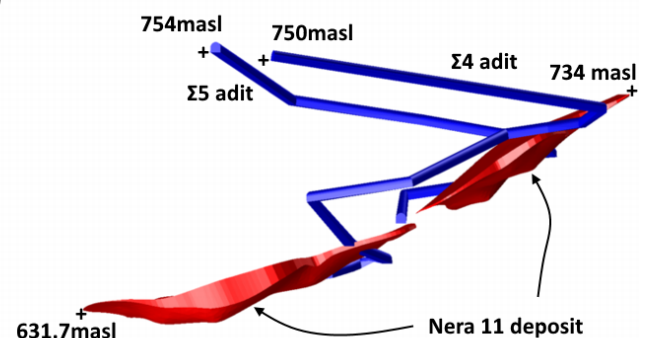
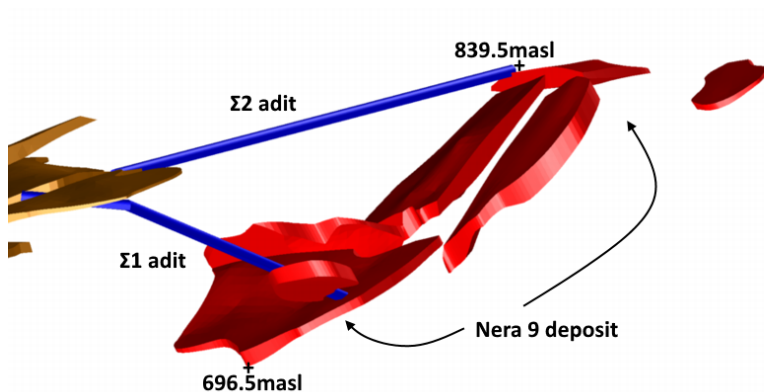
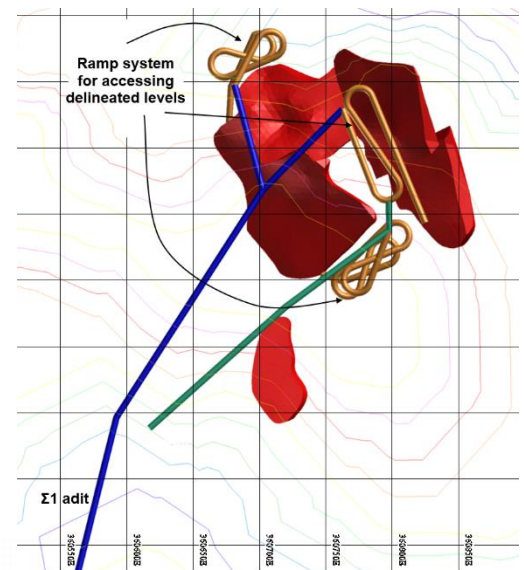
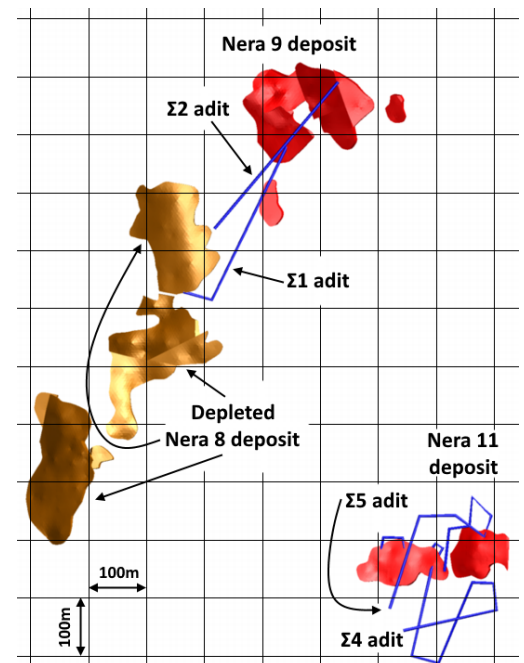
Bauxite

Our Services

- Review of available technical studies, drawings and raw data
- Development of an optioneering methodology to rate mining scenarios
- 3D design of main accesses, crosscuts, breakaways and development works for each scenario

Client

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Koukouvista 1A-5 Underground Mine Portal Area

Optioneering on safe access solutions

Phocis Regional Unit, Central Greece

Project

Optioneering and conceptual design of solutions to safeguard access to the portal and dump areas

Project Schedule

Design: 2018

Geology

Parnassos – Giona geotectonic zone
Bauxite of the upper horizon

Commodity

Bauxite

Our Services

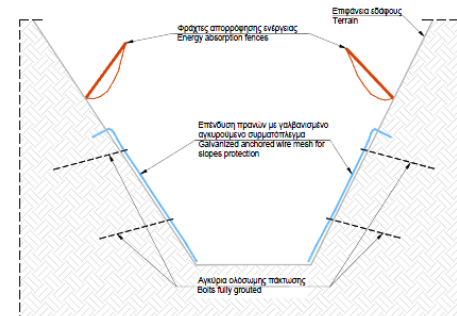
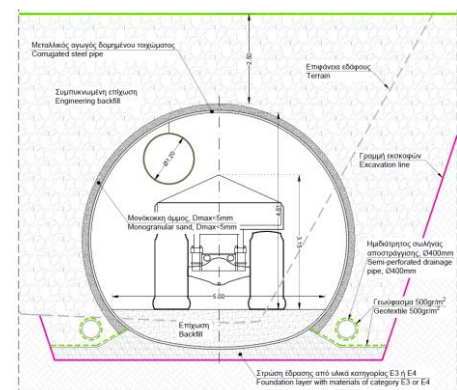
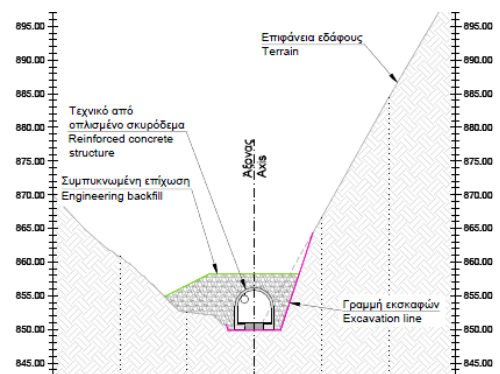
- Optioneering and conceptual design of five (5) technically feasible solutions:
 - Reinforced concrete structure and backfilling
 - Corrugated steel underpass and backfilling
 - New adit and backfilling of existing roadway
 - New tunnel and cross drift
 - Energy absorption fences and slope protection works
- Compilation of a concise technical report presenting the technical aspects of each examined solution
- Elaboration of drawings depicting the implementation of each examined solution
- Bill of Quantities (BoQs) and respective indicative cost estimate per solution
- Comparative evaluation of the proposed solutions in terms of: technical features; construction requirements; impact to the ongoing mining and waste disposal activities; and indicative budgeting

Client

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Portal area of Koukouvista Underground Mine



Indicative cross sections of the conceptual design