PRESENTATION

AMP
Advanced Mineral Processing S.L.

Company Description

- ✓ Advanced Mineral Processing S.L is specialised in **process engineering** and **design plants and equipment** for the efficient treatment of minerals, sand, gravel, clay, chemical and other raw materials processed by various industries.

- ✓ We offer a wide range of **laboratory and pilot plant** scale tests on ores, sands, and other materials which will allow us to determine from the earliest stages of the project the most suitable process aplicable at industrial scale.

Company Description

- ✓ We offer a **global service** in the assembly and commissioning work and operation of the plant.
- ✓ We organise specific **training programmes** for the customer´s operators and management personnel during the assembly, commissioning, testing and operation of the plant in running mode.
- ✓ We’ve got an **after sales service** and **technical assistance.**
- ✓ Our headquarter is in Móstoles and we also have a warehouse in San Martín de la Vega, both are in Madrid.
- ✓ We have presence in Sweden through **AMP Nordik.**
- ✓ ***There are no borders for us and we assemble our plants internationally.***

European Funds awarded to AMP

MINE.THE.GAP brings together SMEs from the raw materials and mining sector with companies that have solutions for a more digital, greener, and circular mining value chain. Through open calls and support services, MINE.THE.GAP makes business ideas a reality.

ROTATE is an EU-funded project that aims to provide environmental solutions to help facilitate the generation of synergies between various industrial sectors related to mining and quarrying. The objectives of ROTATE are to boost efficiency, enhance circularity, develop sustainable uses of resources and improve social awareness of the importance of this strategic sector and its commitment to sustainability. In meeting these objectives, ROTATE also seeks to ensure a sustainable supply of critical raw materials crucial to EU industry.

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Our Project **COLENPRO** has indirectly received funding from the European Union's Horizon 2020 Research and Innovation programme, via an open call issued and executed under Project MINE.THE.GAP (G.A 873149)

Minas de Cassiterite de Sobreda based in Portugal, exploits a Cassiterite Mine in which some amount of Coltan Ore has been detected. This Company requires the implementation of a most profitable and workable technology to make the most of his current deposit for the beneficiation of this valuable Metal Ore present in its deposit, producing a final refined and enriched concentrate able to be saleable in the usual sales channels.

One of the main objectives pursued with the conducting of this assessment work is to find an easy, workable and profitable way to process and make the most of these by-products, for the **separation and final refining of valuable species as per Nb & Ta mineral**. In addition, other valuable minerals will be also used and valued.

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- **COLENPRO** Project, is mainly focused on the development of a new process technologies for the use, benefit and valuation of minerals with high added value and with an important impact in the market.
- In parallel, another of the aims of this project is to improve the recovery and final quality of Cassiterite. This is in fact an ore mineral they are currently producing and the focus target is the increasing both its yield rate and final ore grade.
- Cassiterite and Ilmenite are considered as Strategic Raw Materials (SRM)
- Europe is highly demandant of CRM & SRM so every single gram produced will be immediately sold in the conventional European raw materials market.
- Lastly, based on the new European guidelines and regulations on the 2050 horizon, regarding with the need to drastically reduce dependence on raw materials that come from outside Europe (especially China), the market life cycle for these raw materials, both critical and strategic, is presented as very favourable to ensure profitability in the production of this type of mineral and therefore of the project.

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Five main targets will be sought with the conduction of this project, as follows:

1. Increasing the profitability of exploitations with high value minerals.

2. Reducing the environmental problems due to the disposal of potentially dangerous minerals.

3. Enlarging current low performance beneficiation processes.

4. Optimization of the economic and energy efficiency of strategic materials beneficiation processes.

5. Definition and Implementation of a well proven, stable and safe beneficiation process for strategic materials, scalable to any kind of mining operation.

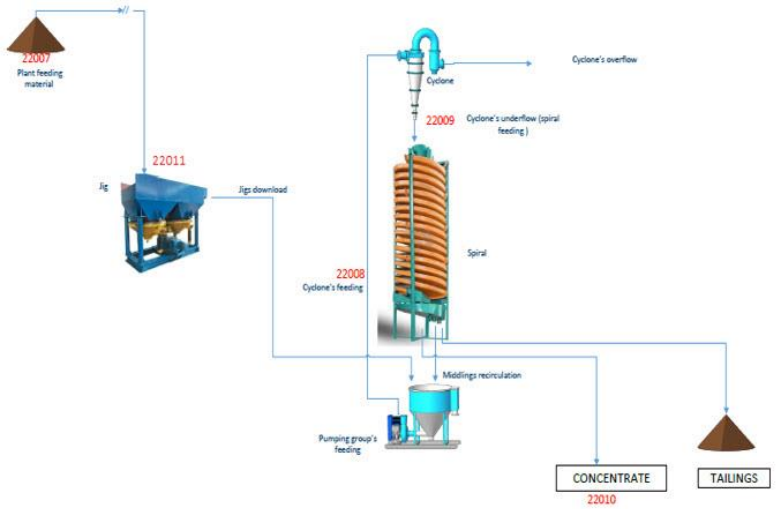

Figure 1: Overview of the different samples taken from the process

Project stages

CHEMICAL ANALYSIS OF SAMPLES

CONCENTRATION OF COLTAN USING DIFFERENT TECHNIQUES

VALIDATION OF PURITY AND QUALITY FOR COMMERCIAL USE

INSTALLATION OF THE INDUSTRIAL PLANT

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Thanks to the fund received from the European Union, the **COLENPRO** project was born, with the aim of **recovering the existing coltan in the sands** of one of our clients.

A **field survey** was conducted to determine the location of AMP's proprietary spiral pilot plant, as well as any necessary refurbishment of the same. Finally, after a second visit, the final location of the pilot plant was defined.

In the **first stage** of trials, we fed the pilot plant with the material from the JIG. Samples were obtained from the different stages of the process. The samples were treated in the laboratory to evaluate the quality of the pilot process.
The mass balance of the spiral during the tests was also determined.

During the **second stage** of trials, the pilot plant was fed with the material extracted directly from the JIG feed. Given its granulometry, a curved grid was installed attached to the pilot plant to control the size of the particles entering the spiral pilot plant.
A second batch of samples was taken from these tests to validate the process again as well as corroborate the implementation of the curved grid.

For the **final stage** of the project, the aim is to concentrate the coltan obtained, as well as to evaluate its quality and purity for commercial use.
For this purpose, different techniques have been carried out, such as chemical and mineralogical analyses, electrostatic separations and, finally, concluding with the industrial proposal for the plant.

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R8TATE

CIRCULAR ECOLOGICAL ESSENTIAL
& CRITICAL RAW MATERIALS

Horizon Europe research and Innovation programme (Nº 101058651)

Rotate's general objective is to provide the Mining and Quarrying market with profitable and replicable solutions:

1- That will **increase the cut-off grade** for production of Critical raw Materials, and to improve the common extraction and processing for open cast mines for all raw materials in an ecological way, minimising the environmental impact in terms of zero emissions, materials, resources and consumption efficiency

2- Rotate will also deliver **circular solutions for waste valorisation**, creating a symbiosis between mining and Quarrying industry and the construction sector.

3- Along with the **technical solutions**, cocreative strategies to enhance social acceptance of the open cast Mining and Querrying sector will also be delivered, supported by robust policy interaction and a strong clustering network

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R8TATE
CIRCULAR ECOLOGICAL ESSENTIAL
& CRITICAL RAW MATERIALS

Amp's tasks in the EU-funded project will be as follows

Increased yield and efficiency in the recovery process of celestite and reuse of celestite tailing

Development of a **Super-thickener** for the high-rate sedimentation of mineral sludges and subsequent increasing of water recovery

Use and recovery of valuable CRMs from aggregates exploitations

Advanced treatment of water in front of mine, for its subsequent reuse in the process itself and/or for discharge

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New european grant awarded

HORIZON-CL4-2024-RESILIENCE-01-04. [SCIMIN-CRM] Sustainable & Circular Production of Mineral Critical Raw Material

SCIMIN-CRM is a project focused on **reducing Europe's dependence on raw materials** by utilizing mining waste facilities (MWFs) to access both critical and non-critical raw materials, addressing environmental concerns in the process. The project plans to develop a streamlined process and a digital platform for efficient assessment and valorization of raw materials in MWFs across Spain, Sweden, Austria, and Bosnia and Herzegovina. Key goals include the extraction of valuable materials like fluorspar, baryte, rare earth elements, bauxite/aluminium, copper, and aggregates. SCIMIN-CRM aims to transform discarded materials into valuable resources, significantly increasing valorization and reducing assessment time. By 2030, it intends to standardize sustainable MWF assessment practices in line with the Critical Raw Materials Act, enhancing the EU's access to raw materials, economic performance, recovery rates, and responsible supply. The project involves 21 participants from 10 countries, promoting sustainable market solutions, capacity-building, social acceptance, and industry collaboration.

Thank you

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ISO CERTIFICATIONS
ISO 9001:2008 & 14001:2004

ISO 9001 BUREAU VERITAS Certification

ISO 14001 BUREAU VERITAS Certification

www.ampmineral.com

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COLENPRO PROJECT https://sites.google.com/view/colenpro-mine-the-gap/home