

# LASER ONLINE ELEMENTAL ANALYZER

## FOR ADVANCED PRODUCTION OF PHOSPHATES



NO RADIATION



### CHALLENGE:

A high content of MgO from dolomite in a phosphate rock deposit negatively influences on further production and final product price. Significant variation and diversity of mineralogy within the deposit made it extremely difficult to control the beneficiation process and ensure the desired product quality.

### SOLUTION:

To improve phosphate recovery and maximize the grade, MAYA online analyzer was installed on conveyor belt to control the quality of the feed before the beneficiation.

Continuous measurement of impurities and major constituents in the crushed ore enables the operation to promptly reject off-grade raw materials and sort the product based on the concentrations. At the same time, the dosage of floatation additives is controlled based on the provided data to ensure the maximum amount of phosphate recovery is possible.

### ACHIEVEMENTS:

Real-time process control based on the chemical analysis provided:

- Improved grade of the final product. With lower impurities and higher phosphate concentrations, the product could be sold at a higher price increasing the profit margin.
- Reduced overall consumption of water and flotation reagents required for beneficiation of low-grade ore.

#### INDUSTRY:

Phosphate Fertilizers

#### TECHNOLOGICAL TASK:

Prompt Process Control, Grade Sorting

#### ANALYTICAL TASK:

$P_2O_5$ , Bone Phosphate Lime (BPL), MgO,  $Fe_2O_3$ ,  $Al_2O_3$ , Insoluble phase and Metal Impurity Ratio (MER)



#### FINANCIAL BENEFIT:

- Early removal of impurities
- Additional earnings from higher-grade product
- Reduced consumption of floatation additives and water

#### PAYBACK OF INVESTEMENT

- 6-9 months

#### ENVIRONMENTAL BENEFIT:

- No Gamma, No Neutron, No X-Ray Radiation
- Reduced consumption of water and reagents
- Minimization of heavy metals in the final product

“Decreased level of MgO in the final product allows us to improve the pricing and returned our investment into the project within 6-9 months” The Client