GOOD PRACTICES AND TECHNOLOGIES
Reducing Footprint in Water
El Agua Nos Une – SuizAgua América Latina

GRUPO MINEROS S.A.
MINERÍA RESPONSABLE DEL SIGLO XXI

Determination of Cyanide in Non-Domestic Wastewater - Underground Mining

SDG: 6.3 Water quality

Company / implementer
Mineros S.A

Sector: ISIC 0722 Mining of gold and other precious metals

Location:
El Bagre , Antioquia, Colombia E 918.125 - N 1.328.439

Update: 01 Feb. 2018

Results

- By monitoring the concentration of cyanide dumped from the Tailings Dam to the water source, the company reduces and controls contamination due to toxic substances. The internal measurements resulted in mg CN/L values ranging between <0.50 to 0.90 without exceeding the permissible limit of 1.00 mg/L.

Other benefits

- Availability of results in real time that facilitate decision-making processes and the application of controls.
- Savings due to lower demand for analysis of samples in external laboratories. 12 samples per month for savings equivalent to **$6,913 USD/year.**
- The project makes it possible to evaluate the efficiency of the detoxification system used for the treatment of the effluents coming from the cyanidation circuit.

Supplier References

Supplier: Hidroasesores
Contact information: Laboratories approved by IDEAM in Colombia for the analysis of cyanide in water.
http://www.hidroasesores.com/servicios/monitoreo-y-analisis-de-aguas/servicios-de-laboratorio

Implementing Company:

Implementing company: Mineros S.A/Minería Subterránea.
Contact information: Luis Felipe Castañeda.
E-mail: luis.castaneda@mineros.com.co

Description

Cyanide is used to extract gold from the ore after being subjected to an oxidation treatment. The dumping of this substance must be monitored to ensure the effectiveness of the process. The titrimetric method was assembled in the metallurgy laboratory to determine the cyanides present in the non-domestic wastewater samples, with concentrations greater than 0.5 mg CN-/L. The necessary laboratory equipment to analyze samples in real time is available.

Operation and Investment Costs

Monetary Costs: 17'000 USD for the assembly of the method (Infrastructure, equipment, conditioning of the area and technical assistance by external experts). USD 50 for operating costs (reagents and staff).
Life span: 10 years.

Limitations and Recommendations

- Due to the demand of time required to perform the analysis of a cyanide sample in ARnD (from 5 to 6 hours), the frequency and number of samples subject to titration or distillation is limited. We have established three samples per week to guarantee the required control.
- For a stricter control, we recommend assigning a person on a full-time basis to characterize and determine cyanide concentration in a greater number of samples.

References

http://www.mineros.com.co/es/sostenibilidad/gestion-ambiental

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