Michael Gardesey

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Educational Background

University of Mines and Technology, (2021 – 2024)
Bachelor of Science in Minerals Engineering.

Tarkwa Senior High, (2016 – 2019)
West Africa Examination Certificate.

Relevant Coursework

- Metallurgical Plant Design and Control.
- Hydrometallurgy and Hydrometallurgical Application.
- Electrometallurgy and Electrometallurgical application.
- Pyrometallurgy.
- Bio-metallurgy and microbial technology.
- Comminution and Mineral Beneficiation.
- Process Control and Instrumentation.
- Mineral and Analytical Chemistry.
- Environmental chemistry and Management of Mine Waste Waters.

Relevant Project Works

- Influence of pH modifiers and pulp density on pulp rheology and carbo-in-leach gold recovery.
- Oxalic acid leaching of lithium from spodumene after modified microwave pre-treatment.
- The combined effect of oxalic and tartaric acid leaching of lithium from spodumene after microwave pre-treatment.

Technical Proficiencies

Core Mineral Processing Principles:

Comminution, Flotation, Gravity Separation, Leaching, Solid-Liquid Separation, Ore Characterisation.

Metallurgical Research and Analysis:

Metallurgical Research Methodologies, Laboratory Testing Techniques (Bond-work index determination, Grindability testing, Sample Preparation, Ore Microscopy, Leaching test works, Cyanide amenability studies), Metallurgical Accounting.

Process Optimization & Control:

Elution Process Optimisation, Carbon Management Strategies (Concentration tracking, Carbon transfer mechanisms, Carbon recovery strategies), Process Flow Diagram (PFD) Interpretation, Mass Balance Calculations.

Software & Tools:

Modsim and METSIM (Simulation Software) and Microsoft Office Suite (Excel – Metallurgical accounting and Data Analysis and Word).

Skills

- Mining Regulation and Procedure Knowledge.
- Safety Protocol and Risk assessment adherence.
- Production Problem Solving (Project-base).
- End-End Project Management.
- Diverse Team collaboration and communication.
- Mining Environment and Fieldwork Proficiency.
- Proactive, Reliable, independent and detailed focused

Professional Summary

Highly motivated and recent Mineral Engineering graduate with practical experience in metallurgical research, ore characterization, and Carbon-in-Leach (CIL) plant operations gained through attachments at Prestea Sankofa Gold Limited and the University of Mines and Technology. Demonstrated ability to apply mineral processing principles and eager to contribute to operational excellence in a challenging Minerals Processing Engineer position. Proven analytical and problem-solving skills with a strong theoretical-practical knowledge base. Proficient in Modsim and Microsoft Office Suite (Advanced Excel) and committed to rapid learning and adaptability in dynamic technical environments. Seeking a role where I can apply my technical skills and contribute to innovative solutions in the minerals industry.

Professional Experience

National Service Personnel | Assaying

Ghana Bauxite Company Limited - Awaso, October 2024.

- Systematically collect representative samples of mined bauxite ore according to the established standard operating procedures.
- Prepared and processed collected bauxite samples for downstream analytical testing, ensuring sample integrity and homogeneity.
- Accurately prepared various stock solution and chemical reagent for laboratory analysis.
- Performed a comprehensive analysis of the bauxite samples to identify and quantify their elemental composition.
    - Determined the percentage of Iron Oxides in dried bauxite, using mercurous nitrate.
    - Determined the percentage of silica in dried bauxite.
    - Determined moisture content and the percentage of Lost on Ignition.
    - Determined the percentage of titanium in dried bauxite.
- Calculated and reported the percentage composition of the major element within the bauxite samples (Fe^{3+} as Fe_2O_3, Si^{4+} as SiO_2, Ti^{4+} as TiO_2, Al^{3+} as Al_2O_3 and LOI (Lost on Ignition)).

Metallurgical Engineer | Attachment

Prestea Sankofa Gold Limited, November – December 2022.

- Operated all process plant circuits, some independently to achieve daily set target Which includes the grinding, carbon in leach (CIL) and elution.
- Monitored critical operational parameters in the Carbon-in-Leach plant, including cyanide concentration using a volumetric method (titration), Dissolved Oxygen concentration and pH using DO and pH meter respectively, Pulp density using a Marcy scale.
- Managed carbon within the CIL processes plant, specifically tracking carbon concentration, overseeing carbon transfer and its mechanisms, and recovering loaded carbon, acid washing recovered carbon for stripping and thermal regeneration of barren carbon contributing to stable plant operations.
- Monitored and recorded operating performance of the processing circuit mainly of the ball mill and cyclone.
- Prepared solution used in the processing plant including Lime and Cyanide solution for pH control and complexing respectively, silver nitrate and eluent.

- ❖ Performed sample collection, preparation for both internal and external analysis, ensuring accurate and representative data for metallurgical assessments.
- ❖ Implemented the Zadra Stripping process for elution, adhering to safety protocols and operational guidelines to achieve efficient recovery of gold from loaded carbon.
- ❖ Maintained a high housekeeping standard in each of the processing circuit.
- ❖ Conducted shift handover detailing relevant information correctly and detail all information in various logbook and report book.

Minerals Laboratory Research | Laboratory Attachment

University of Mines and Technology.

- Performed advanced technical assessments, including Bond-work index determination and comprehensive grindability testing, to provide crucial data for comminution circuit design and optimization.
- Executed sophisticated sample preparation and characterisation techniques, including specialized ore microscopy, to analyse mineralogical properties and inform processing strategies.
- Conducted specialized leaching test works on various ore samples, meticulously documenting procedures and results to determine optimal leaching conditions and predict metal recovery rates.
- Executed cyanide amenability studies on different ore samples, following established laboratory protocols and safety procedures to assess the feasibility and efficiency of cyanide leaching for gold extraction.

REFERENCE

Available upon request