



Tonkolili Iron Ore Mine, Sierra Leone

PDLA04A

The DIG IG team carried out a number of projects at the Tonkolili Iron Ore Mine; these included:

Infrastructure Works, Concrete Foundations and Enabling Works for:

- Main process plant foundations that will produce 1,000,000 tonnes of iron ore per month, total structural concrete 16,000m completed in 6 months.
- Primary crusher foundations (2500m concrete) and walls (reinforced earth 70,000m with concrete facing panels 1250 no. precast on site) as well as traditional concrete retaining walls.
- Overland conveyor foundations and earthworks grade from mine area to process plant (2.5km total).
- Conveyor foundations within process plant and to train load out station (2km).
- Process water reinforced concrete weir (17m high x 89m wide, 4000m concrete) with associated temporary works and coffer dam, river diversion, pump station to process plant (4 months).
- Zoned (clay/sand) earth fill tailings dam with filter beds (500,000m in 3 months with concrete spillway), to provide storage of 2,500,000m.
- 25km of haul roads (including 10km wide enough for Cat 777 dump trucks to pass) on mountainous topography.
- Numerous culverts and stream diversions.
- Logistics infrastructure including workshops, camp accommodation, offices, mess kitchens and ongoing maintenance.
- Labour, plant, concrete batching and concrete pumping equipment have been mobilised with the logistical issues of supplying materials to a remote part of Sierra Leone.
- Ongoing participation on proposed permanent mine accommodation and access roads.





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PDLA04B



Not all of the specified materials were available in Sierra Leone, and the DIG IG team met the challenge of procuring steel trusses, roof coverings, finishes and fit-out materials from overseas. All aggregates for concrete, filter media to dams, mass rock fill and rail ballast required at Tonkolili were produced by the on-site Wendugu Quarry.

Our on-site laboratory undertook testing and analysis of all construction materials, products supplied, produced and incorporated into the works.

The DIG IG team had full design, ground investigation and geotechnical support teams to assist in commissioning all of the works.

Elements of works designed by the DIG IG team included: Raw Water Dam, Primary crusher foundations and reinforced earth walls, tailings dam, conveyor bridges and haul road alignment and drainage.

Key Achievements

- Provided design and engineering solutions to achieve the Client's target dates
- Completed construction on time and to budget
- Provided a high quality product
- 24,000m concrete, 45,000m of form work and 4000 tonnes reinforcement constructed
- Over 1,100,000m earthworks completed
- Advised client on risk mitigation and value engineering.

Client: African Minerals

Value: \$87,000,000

Duration: 88 weeks