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# Environmental Monitoring Programme – Northern Mozambique and South Malawi

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In order to comply with environmental management plan requirements for construction and operation of 912km of railway and a coal port terminal at Nacala-à-Velha in Mozambique, a water quality monitoring program was implemented by a coal logistic company knows as CLN to monitor the impact of the project on water quality. It is currently the only environmental monitoring program known to cover such a large geographical area in Southern Africa, including three Provinces in Mozambique (Tete, Niassa, and Nampula) and five districts of the southern region in Malawi. The monitoring program included all water resources potentially to be impacted on by the Project.

The program included the monitoring of surface waters (river crossings) and groundwater supply points along the railway and monitoring of ground and marine waters along the port perimeter. The monitoring program also aimed to verify the efficiency of the control systems and environmental performance of each unit against the Mozambique standards.

The monitoring program involves sampling and laboratory analysis of the water collected. Although the field conditions and geographical extent were challenging and not always favourable, the methods used for field sampling and laboratory analyses were in accordance with the United States Environmental Protection Agency (USEPA) and accredited in accordance with the recognised international standard.

Results show that surface water has good quality and was not affected by the project activities and that the groundwater quality at the port was strongly influenced by the oceanic tides possessing high salt content (Na, Cl, and Mg). The marine water quality tend to be influenced by the season presenting high levels of turbidity during raining season and relatively low levels during dry season.

**Key words**: Water quality monitoring, Surface water, groundwater, Mozambique