

## CUSTOMER

- ▶ Acciona Agua
- ▶ Prime contractor: Preditec
- ▶ Amount: 625.000 €
- ▶ Implementation: 2014-2015



## PROJECT AND SOLUTION

In 2000, the EPM group launched the program to recover the Medellín River with the commissioning of the San Fernando wastewater treatment plant. In 2012, and with the aim of providing continuity to the program and achieving the treatment of 95% of these waters, the EPM Group subsidiary Aguas Nacionales/Concorsio Aguas de Aburra built and commissioned the north interceptor and Bello wastewater treatment plant.

This megaproject means that wastewater from the cities of Medellín and Bello can be transported to this plant where, using

activated sludge, it undergoes secondary treatment before flowing into the Medellín River. By reducing the organic load entering the river, this will raise the amount of dissolved oxygen in the water up to minimum level of 5 mg/l, complying with the concentration set by the environmental authority.

Included in the construction plan for the Bello wastewater treatment plant is a vibration monitoring system to improve the performance of the main machinery. The scope of this monitoring system covers the continuous monitoring of 41 power trains, as well as the provision of portable vibration meters in order to undertake measurement routes in less critical machinery. All of this will enable the introduction of a predictive maintenance system based on awareness of the condition of the machinery through vibration analysis and diagnostics.

The machinery to be monitored includes inflow pumps to the wastewater treatment system, blowers for the ventilation system, primary and secondary sludge pumps, agitators, centrifugal thickening and dewatering pumps and gas-powered motor generators. The temperature of rolling and plain bearings are also monitored.





The system supplied by Grupo Álava has two primary objectives: first, to ensure equipment and personnel are protected by avoiding possible catastrophic failures in the most critical equipment; and second, to enable the continuous, remote monitoring of the equipment's operation, as some is located outside of the plant facility.

The variables measured are sent to the plant's distribution control system to be analyzed by the operators who, thanks to the diagnostic tool hosted on an external server, can generate reports and assessments taking into account historical data regarding previous measurements. The system's architecture includes a fiber optic ring network that enables remote access.

## Think Big

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