

Bio-Stimulation Project in Córrego dos Tropeiros stream, using TWC Blocks.

General Objective:

The bio-stimulation project was implemented in the Córrego dos Tropeiros stream with the goal of improving the quality of water by reducing the load of pollutants such as nitrogen, phosphorus, biochemical oxygen demand (BOD), chemical oxygen demand (COD), and turbidity. The bio-stimulation process involves installing TWC blocks in the river course to stimulate the natural degradation of the pollutants present.

Installation and Operation:

- The TWC bio-stimulation blocks were installed on November 29, 2022, during the rainy season, covering a 12 km stretch of the river near the Ambev factory.
- The blocks remained installed from December 16, 2022, until January 13, 2023.
- Due to access difficulties at the border with IVECO, results from the water quality upstream of IVECO were requested, but no response has been received from their legal department. However, analyses were carried out approximately 200 meters from the border.



Monitoring and Data Collection:

Three collection points were defined for data evaluation: upstream, downstream, and at the Ambev-IVECO border. The monitored parameters include:

- Phosphorus
- Nitrogen
- BOD (Biochemical Oxygen Demand)
- COD (Chemical Oxygen Demand)
- Turbidity

Results:

1. BOD:

- There was no significant difference in BOD levels between upstream and downstream.
- However a 73% reduction in BOD was observed at the border in the last weeks of monitoring.

2. COD:

- Similar to BOD, COD showed no significant variations between upstream and downstream.
- However an 80% reduction in COD at the border in the final two weeks.

3. Turbidity:

- Thanks to stabilization measures at the ETEI (Effluent Treatment Plant), a 20% reduction in turbidity was observed at the border.

4. Nitrogen:

- Since corrective measures were implemented at the ETEI in August 2022, a significant drop in nitrogen levels was observed.
- Up to 85% reduction in nitrogen levels was observed at the border.

5. Phosphorus:

- Interventions to reduce phosphorus in the effluent included removing solids from the aeration system and replacing chemicals, leading to improvements in water quality.

Continuity and Recognition:

In March 2023, O2eco (utilising TWC technology) was ranked 1st in Ambev's selection for innovative solutions in environmental sustainability. This recognition highlighted the effectiveness of the TWC bio-stimulation technology as a key method for water

depollution in Latin America. As a result, Ambev has continued to support O2eco's project, considering it the best solution for the region.

Looking ahead, in February 2025, AB InBev will collaborate with O2Eco on a new project aimed at creating a positive impact on the biodiversity of a river in the interior of São Paulo. This initiative is expected to further enhance natural water restoration efforts and contribute to regional biodiversity.

Conclusion:

The bio-stimulation project in Córrego dos Tropeiros has shown positive results in improving water quality, particularly with significant reductions in pollutants, as well as BOD, COD, nitrogen, and turbidity. With continued support from Ambev and AB InBev, this technology is gaining momentum as a leading solution for natural water depollution across Latin America. The collaboration with AB InBev in 2024 is set to make a lasting impact on river ecosystems, further solidifying O2eco's role in environmental restoration.

Before treatment:







After treatment:

