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## ENHANCED COAGULATION FOR ALGAE REMOVAL IN A TYPICAL ALGERIA WATER TREATMENT PLANT

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### Abstract

This work aims to study the physicochemical and biological parameters of Boukerdene Dam's water and treated water at different steps of the treatment processes in Sidi-Amar's Station (Tipaza, Algeria) with a particular interest to the phytoplankton. This work is also related to the demonstration of the enhanced coagulation (EC) process as an efficient method in algae and organic matter (OM) removal from surface water by its application in jar tests. The diversity of the phytoplankton shows the presence of 21 genera comprising 30 algae species out of 8 samples taken from the Boukerdene Dam. Among the identified genera, seven of them are responsible for the unpleasant tastes and odours of water; six others are responsible for filter fouling. Generally, the conventional drinking water treatment processes employed at this water treatment plant shows a limited efficiency of OM and algae removal. The novelty of this work is that the jar tests of EC (pH 6 and alum dose 15 mg L<sup>-1</sup>) as only one stage of water treatment, without chlorination and filtration, improve the removal of OM and algae at 97 to 99%, respectively.

**Keywords:** algae, bacteria, enhanced coagulation (EC), natural organic matter (NOM), surface water

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