



Extrait du OIEau

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Neutralization of supplied waters Which solutions to replace maerl ?

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Date de mise en ligne : lundi 19 février 2007

OIEau

The maerl is a lime deposit resulting from marine algae, the lithothamnion, which crystallizes the mineral elements of sea water ; it is thus very rich in calcium and magnesium.

This product was initially used for soil improvement then in drinking water treatment, for recarbonation and pH correction.

In France, the main maerl deposits are found in Brittany, with the Glénan (Finistère) deposit having a good quality that can be used by many water production units.

Initially small-scaled, its exploitation has been industrialized for thirty years with an extraction by dredgers, thus threatening the outstanding biodiversity found in the maerl deposits and causing conflicts of interest, especially between fishermen and extracting people.

With the aim of deciding the future of maerl deposit exploitation, the Ministry of Economy, Finance and Industry wished to have an assessment of the current knowledge on the maerl deposits and their various uses. A consortium, led by CREOCEAN and made up of the laboratory of Marine Environmental Sciences of the University of Western Brittany, the SCE consulting firm and the International Office for Water, was in charge of this study.

IOWater carried out an analysis of the current maerl use in drinking water treatment. This product is very easy to use : a mere filtration on this lime material is enough to lower the water pH to a value meeting the regulatory constraints ; in addition, a gravity water supply of the filter does not need electricity and a delivery in bags by tractor allows supplying drilling sites in forested areas not served by road. Consequently, it is mainly used by small drinking water treatment units, serving small communities.

A second stage consisted in identifying substitution processes in case of a shutdown of maerl extraction.

It seems that few products have characteristics, either technical (physical, chemical) or economic, allowing them to directly replace the lithothamnion as filter material. The choice of an alternative to the maerl process will rely on a case-by-case analysis of local conditions of the water production plant, and the adopted solution will result from a complex combination of factors taking into account raw water quality, the expected production rate, the reactivity and cost of the chosen reagent, the necessary complementary treatment(s), the infrastructures, either existing or to be created, etc.