

Water Recycling / Reuse in Factories Case Study Soft Drink Factory

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ABSTRACT

The aim of the present work is to study water recycling and reuse in a soft drink Factory.

Water is an essential raw material in the soft drink productions with a consumption of 2.5 to 3.5 liter of water per liter of soft drink. The wastewater generated in this industry is mainly from bottle washing, filler backwashing, washing of bottle machines, equipments, floors and pipe work during flavor changing. The major contaminants in this effluent are caustic soda and sucrose

In order to reduce water consumption and volume of wastewater generated in the soft drink plant, Sulave private sector factory was chosen as a case study of the generated wastewater in the plant. The study was carried out between May till October 2010 for measuring and monitoring various pollutants of the generated wastewater in the plant.

Two strategies had been proposed, in the first wastewater out of bottle washing machine and washing columns could be recycled to the units if treated by: Filtration-Adsorption-Reverse Osmosis system, this proposal reduced water consumption in the factory by about 35% and decreased wastewater effluents by 65% of total wastewater effluents. The second strategy was to reuse water out of the bottle washing machine after treating it by: Filtration-Adsorption system to be used in the washing column. The water consumption in this strategy was reduced by about 15% with a reduction of 35% in wastewater effluents

Keywords: Water recycling, Reuse, Soft drink factory.

إعادة تدوير المياه الصناعية المستخدمة في المعامل الكيماوية (معامل المشروبات الغازية كمثال)

الخلاصة

الهدف من هذا العمل هو دراسة إعادة تدوير المياه وإعادة استخدامها في مصنع المشروبات الغازية. الماء هو المادة الخام الأساسية في إنتاج المشروبات الغازية مع استهلاك 2.5 حتى 3.5 لتر من الماء لكل لتر من المشروبات الغازية.

مصدر المياه الصناعية الملوثة في معامل المشروبات الغازية ينتج عن غسالة القناني الزجاجية وكذلك من غسل المعدات وعلى وجه الخصوص عند تبديل النكهات وإبراز الملوثات في المياه الناتجة تكون الصودا الكاوية والسكرور. تم اختيار مصنع سولاف لإنتاج المشروبات الغازية لدراسة