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Calculation and interpretation of effluent discharge objectives of metal industry – case of Protuil manufacturing – Annaba (Northeast Algeria)

Lamine Sayad[a], Larbi Djabri[b], Nadjib Drouiche[c,*], Hicham Chaffai[b], Azzedine Hani[b]

[a]*Department of Geology, Badji Mokhtar Annaba University, Annaba, Algeria, email: sayadlamine@yahoo.fr*
[b]*Laboratory of Water Resources and Sustainable Development, Badji Mokhtar Annaba University, Annaba, Algeria*
[c]*Centre de Recherche en Technologie des Semi-Conducteurs Pour l'Energétique (CRTSE), 2, Bd Dr. Frantz Fanon, P.O. Box: 140, 7 Merveilles, Alger 16038, Algeria, email: nadjibdrouiche@yahoo.fr*

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ABSTRACT

The preservation and protection of wetlands are of paramount concern given their vulnerability, the rich heritage they can hold and the functions they perform. Economic development has led to negative impacts on the environment and the health of populations. Several methods have been developed to limit the concentrations and a load of effluents in the natural environment. Lakes, reservoirs and closed bays are particularly sensitive to contaminant inputs. Their hydrodynamics promote sedimentation and lead to slow mixing of the effluent in the medium. In this context, the present study was concerned with the environmental objectives of discharges (EOD) of the Protuil manufacturing (metal production) in a salted and protected area of the Fetzara Lake. This method permits the calculation of concentrations and loads of contaminants potentially discharged into an aquatic environment without the compromise of water quality. The calculation of EOD for heavy metals (Cr, Cu, Ni, Pb and Zn) has shown a significant overcoming of these toxic contaminants threatening the ecosystem integrity and/or the environment.

Keywords: Rejection Protuil; EDO calculation; Fetzara Lake; Heavy metals; Excess

* Corresponding author.