

TREATMENT OF PULPING WASTES BY PERCOLATION  
THROUGH GRANULAR BITUMINOUS COAL

by

P. L. Silveston  
University of Waterloo

ABSTRACT

A group of experiments on the removal of suspended solids, lignins and their derivatives, and other soluble components causing chemical oxygen demand (C.O.D.) from industrial pulping wastes are summarised. An HVCB coal from Nova Scotia was used for most work. Percolation of a ground wood white water waste (total solids - 1850 ppm) through 28/48 mesh ground coal gave about 80% reduction of suspended solids and 20% removal of the soluble components exerting a C.O.D. Percolation of a sulphite residual cooking liquor (total solids 106,000 ppm) containing mainly lignin derivatives show substantial adsorption of lignins. Reduction of the C.O.D. of a Kraft bleachery effluent was also found. Batch adsorption measurements show Nova Scotia coal capable of adsorping lignins up to 4% of its weight. Coal based treatment may be feasible when suspended solids are the important pollutant, but when lignin content or the soluble C.O.D. is to be lowered this treatment is probably feasible only when coal is used as a pulp mill fuel.