

# innovations

from The University of Vermont

**TITLE:** PHOSPHORUS REMOVAL SYSTEM AND METHOD

**INVENTOR:** Aleksandra Drizo, Ph.D.

**DESCRIPTION:** Management of excess phosphorus (P) from agricultural and other wastewater runoff has received increased attention due to the role of P in accelerating the depletion of oxygen levels and increasing algal growth on surface waters. Finding a solution for managing excess P from agricultural fields is particularly important due to the fact that relatively small amounts of P can cause water quality impairment. This invention provides a P removal system in a series of filter units that removes P by specific absorption on metal hydroxides and Ca-P precipitation via steel slag material. The system is inexpensive (has minimum land and energy needs); flexible (easily sets up in both city and rural situations (farms and houses) and is very efficient (can remove 95% of P from wastewater effluents with P concentrations of up to 50 mg/L). In addition, the system provides for pH neutralization and a long term solution for P removal via slag regeneration.

**ADVANTAGES:** Current phosphorus removal practices are finite systems attached to or part of large treatment lagoons or below ground infiltration systems that require large, inflexible, and sometimes not feasible land applications. This system has simple regeneration capabilities, has minimum land needs, can handle a large diversity of P concentrations in effluents from below 5 mg/L to 50 mg/L, and is easily combined with existing treatment systems.

**PATENT STATUS:** Patent pending

**LICENSING STATUS:** Worldwide rights available

**CONTACT:** Todd S. Keiller, Director, Technology Transfer University of Vermont

1 Pendulum Pass  
Hopkinton, MA 01748

tel (508) 497-2497  
fax (508) 497-0733  
Todd.Keiller@uvm.edu