



CoMag™

Exceptional Performance for Total Phosphorus and Solids Removal

Applications

- Tertiary Treatment
- NPDES Limits < 0.2 mg/L Total Phosphorus
- Fixed Film Effluent Clarification

Technology

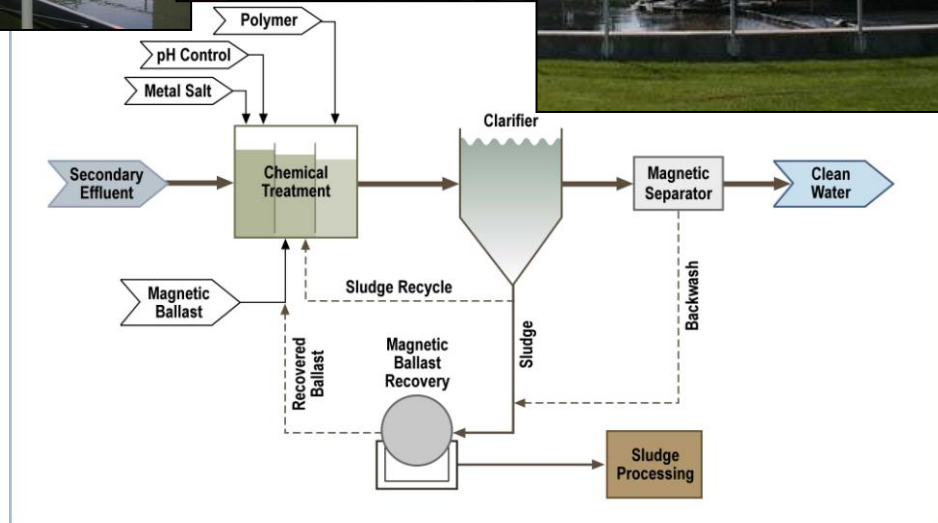
CoMag™ is a patented solids and precipitated particulate removal process that produces an effluent equivalent to ultra-filtration but at a fraction of the capital and operating cost of conventional filtration alternatives. Reliable, robust, simple and compact, CoMag™ systems are high performance, cost effective solutions for the treatment of municipal and industrial wastewater.

The advantages are distinctive; rapid clarification equates to low hydraulic retention times which enable the use of smaller clarifiers for a given flow; smaller clarifiers make for a smaller overall plant footprint and thereby, lower installed costs.



Other Applications

- CSO
- Process Water Production
- Metals Removal
- Chemically Enhanced Primary Treatment



CoMag™ Process Overview

Influent to the CoMag™ process is from the secondary clarifiers or directly from a biological fixed film process. The flow is measured and used to control coagulant addition and other processes.

The wastewater flows to two baffled mixed reaction tanks for coagulation, ballast addition, and flocculation. The hydraulic residence time (HRT) in these tanks is short because the fine ballast does not require the development of large well defined flocs, as would be necessary for conventional coagulation.

The ballasted floc flows to sedimentation clarifiers. Though the clarifiers are small compared to conventional units, they are designed to meet permit limits at maximum daily flow.

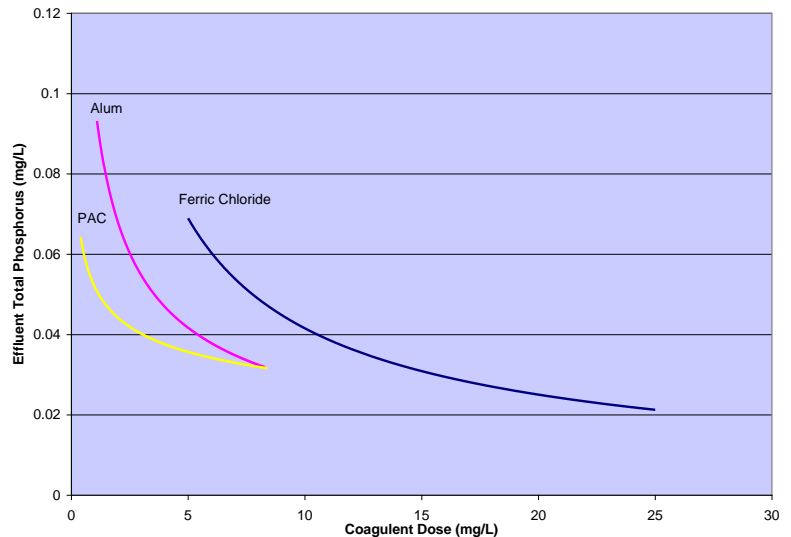
A large percent of the solids underflow is recirculated back to improve flocculation by increasing the mass of solids in contact with the phosphorus precipitate.

The rest of the sludge is wasted from the system. The magnetic ballast is returned to the reaction tanks and the waste sludge is discharged for further processing.

Advantages of the CoMag™ System

The key benefits and advantages to the CoMag™ process are:

- **Low capital and O&M costs**
- **Non-abrasive ballast**
- **High reliability**
- **Intrinsic redundancy**
- **High “turndown” capability**
- **Reliable in upsets**
- **Flexibility of Coagulant Type**
- **UV disinfection enabling**
- **TP Effluents of <0.05 mg/L**



TYPICAL OPERATING PERFORMANCE	
TOTAL PHOSPHORUS	
Influent	0.3 - 5.0 mg/L
Effluent	<0.05 - 0.1 mg/L
Percent Removal	95 - 99%
Coagulant Dosage	3-25 mg/L
Polymer	0.5-2.5 mg/L

To learn more about CWT and how CoMag™ can help solve your water and wastewater treatment challenges contact Bob Backman in our Cambridge office at 617-871-1353 x114 or email Bob at rbackman@cambridgewater.com.