



## PROJECT BRIEF

Paper Packaging Manufacturer Reduces Wastewater Discharge by 30% with Efficient SAMCO Wastewater Treatment System Design

### PROJECT OVERVIEW

Challenged to bring its wastewater treatment system (WWTS) into compliance with paper industry standards, a Missouri flexible packaging facility looked to SAMCO an efficient solution that optimized recycling and reuse rates despite a complex and variable combined discharge stream.

### OBJECTIVE

Upgrade WWTS per compliance guidelines and improve pollution prevention (P2) efficiency in treating for complex contaminants, including:

- Oil and grease
- Heavy metals
- Suspended solids
- Starch paste

### SCOPE OF SERVICE

SAMCO provided design and engineering services, including a detailed plant survey, treatability and waste minimization studies, project estimation, on-site pilot studies, and delivery of custom WWTS concept.

### CHALLENGES

- Complex wastewater streams with physical, biological, and chemical contaminants
- Stringent testing limits for biochemical oxygen demand (BOD) and chemical oxygen demand (COD)

### SOLUTION

Drawing on plant survey and P2 optimization data, SAMCO delivered a scalable WWTS design to minimize waste and meet stringent discharge limits. The innovative design maximized return on investment by incorporating source segregation, allowing the plant to recapture materials for reuse and recycling, and reduce wastewater discharge by 30%. The WWTS design improved efficiency by targeting specific removal processes such as precipitation, suspended solids flocculation, clarification, and sludge handling, following separation of combined contaminant streams, including starch paste and heavy metals-based pigments. By focusing on efficiency, the WWTS design reduced pollutant concentration by 50%. while included programmable logic controls (PLC) and remote telemetry minimized operational and maintenance demands.

### TECHNOLOGY

Plant design concept included:

- Equalization and reaction tanks
- Chemical feeds
- Clarifier system
- Biological system
- Sludge handling/filter press
- Influent and recycle pumps
- PLC controls

## OVERVIEW

**Industry**  
Paper

**Location**  
Missouri, US

**Objective**  
Treat wastewater per stringent BOD & COD testing limits; improve P2 efficiency

**Solution**  
8,000 GPD Wastewater Treatment System Design