

## Case Study: AquaPure™ Cal 50

# Helping an anodizing facility meet permit limits.

## The Challenge

An anodizing facility was struggling to meet a pretreatment permit discharge limit of 10mg/L for Total Phosphorus. If the facility could not retain pretreatment permit limits, they would be at risk for fines and potentially having their permit revoked. Influent water showed an incoming Total Phosphorus averaging 700mg/L. Phosphorus came from the anodizing process rinse waters. pH adjustments, chemical dosing changes, and system changes did not remove enough phosphorus to get below the facility's discharge limits.

## The Process

The Hubbard-Hall team, called in by the facility owners to help solve the issue, began by evaluating different chemistries to determine which chemistry would meet discharge criteria consistently.

Hubbard-Hall used the Molybdovanadate Method with Acid Persulfate Digestion – an approach that the HACH company has adapted from Standard Methods for the Examination of Water and Wastewater. A series of progressive tests were conducted using wastewater from the anodizing process rinses. These samples had a starting Total Phosphorus average of 700mg/L.

With pH maintained at 7.5, the testing was conducted using a HACH DR 890 Colorimeter and HACH Test Method 10127 for High Range



**Treating**  
the Hard to Treat

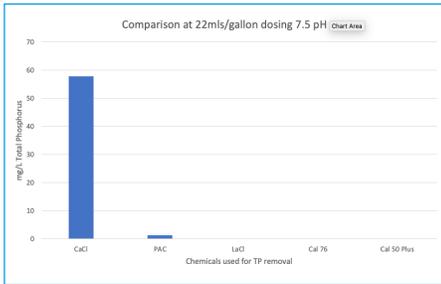
## Executive Summary

**Hubbard-Hall our customer update their treatment chemistry and protect their pretreatment permit.**

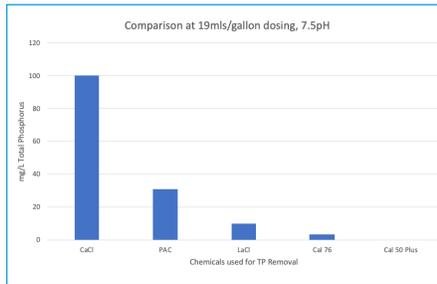
- Progressive testing using the Molybdovanadate Method
- Identified optimal chemistry - AquePure Cal 50 - and minimum dosage
- Coordinated with the facility and local municipality to run successful trial

Total Phosphorus. This testing process reads total phosphorus from 0-100mg/L. Any test result over 100mg/L is marked as 100mg/L.

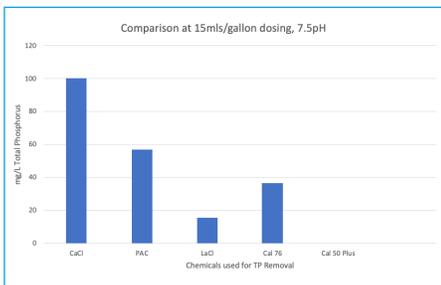
During testing, Hubbard-Hall used different chemistry concentrations to find the lowest dosage to achieve desired results.



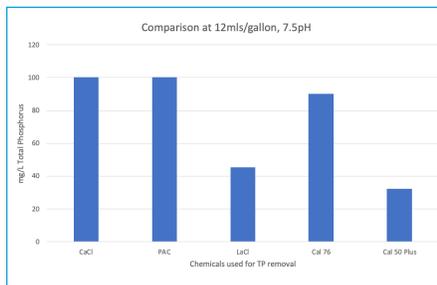
**Chart A: Comparison of CaCl, PAC, LaCl, Cal 50 Plus, Cal 76 at a dosing of 22mls per gallon**



**Chart B: Comparison of CaCl, PAC, LaCl, Cal 50 Plus, Cal 76 at doing of 19mls per gallon**



**Chart C: Comparison of CaCl, PAC, LaCl, Cal 50 Plus, Cal 76 at doing of 15mls per gallon**



**Chart D: Comparison of CaCl, PAC, LaCl, Cal 50 Plus, Cal 76 at doing of 12mls per gallon**

## The Outcome

Based on the bench test results, Hubbard-Hall recommended AquaPure™ Cal 50 Plus, which showed optimal results at just 15ml./gallon dosage. Working with their local municipality, the facility ran a two-week trial to ensure the bench test results would carry over to the wastewater system while manufacturing was in full production.

TT-0221

“We’ve found that when we’re able to go tank side, we can really make a difference for our clients.”

**Robin Deal**  
Wastewater Specialist  
Hubbard-Hall

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