



AQUAFIX
Wastewater Laboratories
University of Wisconsin Research Park

Reducing Sludge in a Wastewater Lagoon

SludgeRx Case Study



INDEPENDENT DATA COLLECTED AND SUBMITTED BY:

HILMAR, CA

Study Highlights

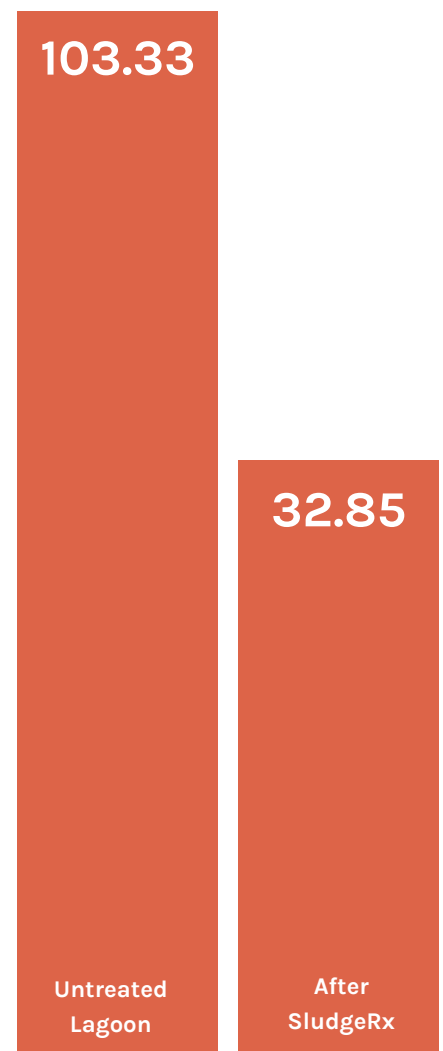
- Sludge depth reduced by 57% overall, down to as low as 1-2 inches in areas.
- Water column clarity improved drastically
- TSS dropped over 50% in the course of the study

Effluent BOD

reduced by

68%

with Sludge Rx



Background

Hilmar County Water District, a small municipality in Hilmar, California, began constructing a new Wastewater Treatment Facility in the early 2000s to combat permit violations. In June 2003, the new facility was fully operational. The Hilmar County Water District Wastewater Treatment Facility is an Advanced Integrated Wastewater Pond System that uses microorganisms, green microalgae, and bacteria to treat sewage.

From 2015 to 2018, HCWD used a coagulant to harvest algae in our Algae Settling Ponds (ASPs) and to help reduce the number of solids in the Maturation Pond. In those few years, we saw adverse effects, including solid build-up in our Maturation Pond and diminished porosity in our percolation ponds. Seeing this, we discontinued using coagulants and made it part of our mission to operate our facility free of ongoing chemical dependency.

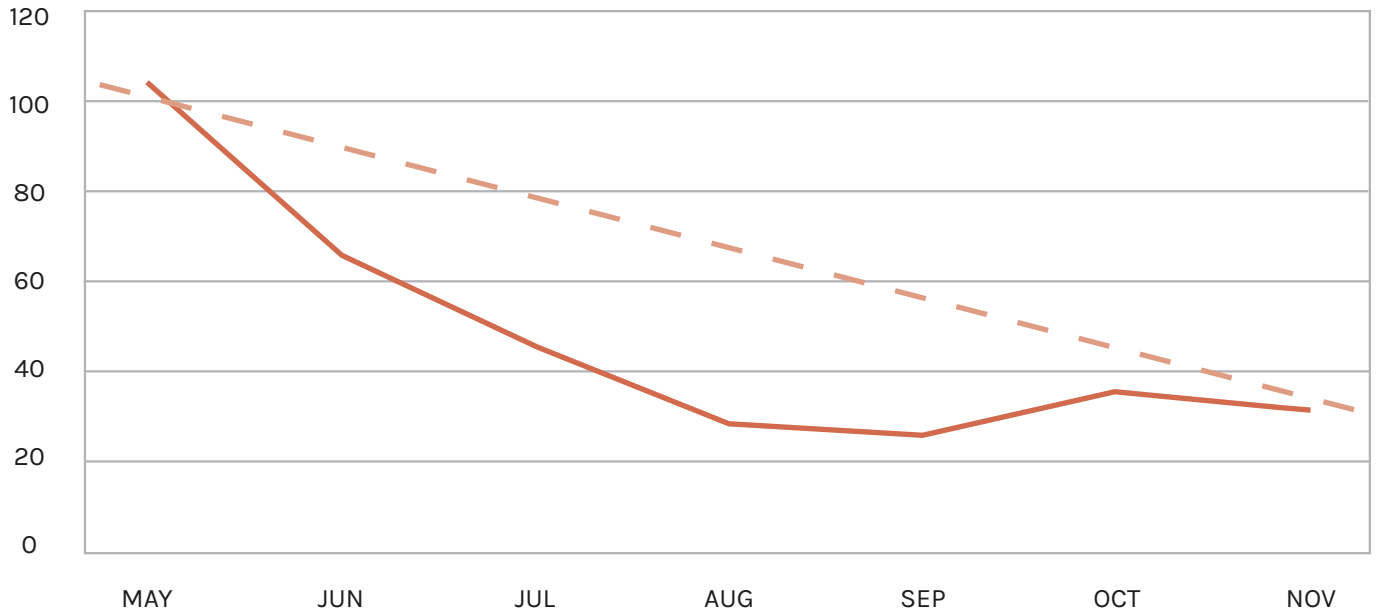
Date	BOD (mg/L)	TSS (mg/L)
May	103.33	81.3
June	65.33	47.43
July	46	46
August	27.8	38.9
September	25	35.3
October	34.25	26.13
November	32.85	32.7

Striving toward that, from November 2019 to January 2021, HCWD started a project to remove algae solids from our Maturation Pond. We successfully removed our solids; however, about a year later, we saw our TSS and BOD levels slowly increasing. We researched several potential solutions that brought us to Aquafix. We worked with Tyler, and he recommended using SludgeRX paired with OxyPaks to treat our Maturation Pond. After a six-month treatment, we've seen our TSS and BOD react very positively, keeping HCWD within our discharge limits.

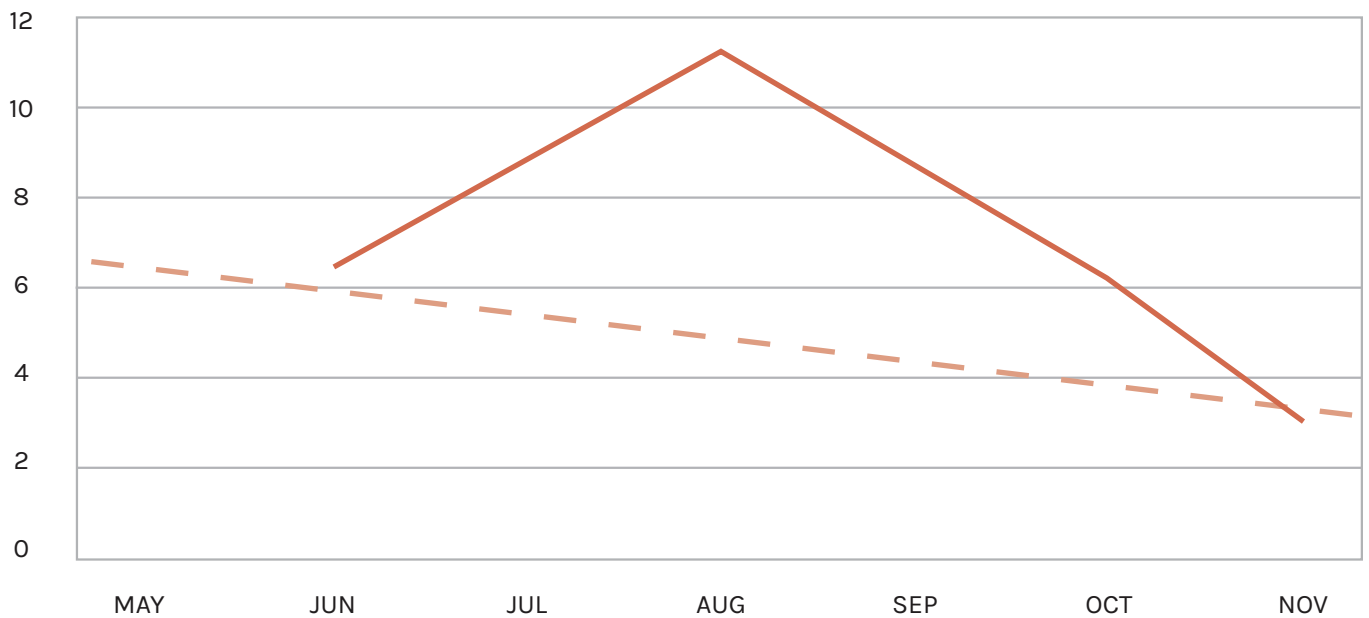
Aggressive Sludge & Nutrient Reduction Plan

Cell	Sludge Rx Dose	OxyPak Dose	Anticipated Timeframe
Mat Pond	180 lb per month	300 lb per month	July-November

BOD Removal



Sludge Depth (inches) -> before and after



Results

The wastewater operators at Hilmar County Water District successfully achieved their goal of improving nutrient removal in their wastewater lagoon system using Sludge Rx over the span of six months throughout 2022. Sludge levels were reduced by an average of 57% with some areas reaching levels as low as 1-2 inches. TSS was lowered by over 50% by the end of treatment. Effluent BOD demonstrated the highest reduction of 68% over the duration of treatment. Qualitatively, water column clarity improved drastically, and cleaner effluent was achieved.



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Hillmar, CA

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