

Low Dose™, the first fully automated water treatment software to reliably optimize coagulant and polymer dosage.

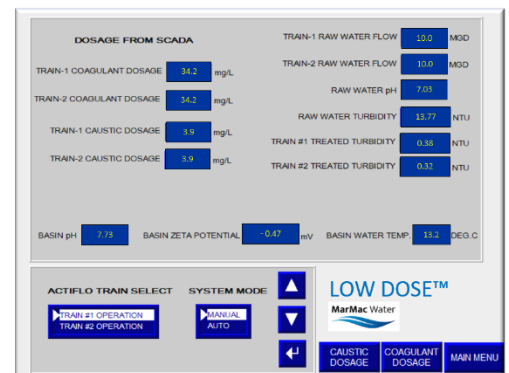
CASE HISTORY – SALISBURY-ROWAN UTILITIES; NORTH CAROLINA

BACKGROUND

Salisbury-Rowan Utilities operates a conventional flocculation – sedimentation - filtration water treatment plant, with a ballasted sand clarifier. The plant historically experienced insufficient clarifier performance, resulting in carry-over turbidity, polymer residual and limited filter run times. Rain events placed additional stress on the plant's performance.

SOLUTION

Our Low Dose™ software system was recommended by the consultant, after laboratory testing indicated the plant would benefit. Low Dose™ is chemical dosing software that incorporates pH control with accurate water temperature compensation, and zeta potential measurement. A full-scale demonstration was initiated in October 2021. Upon commissioning, the Low Dose™ system reduced the amount of coagulant necessary to remove turbidity and successfully eliminate polymer carry-over, resulting in a significant reduction of head-loss. It also extended filter run times by more than 50%. Additionally, because of the reduction in the amount of coagulant used, Salisbury-Rowan saved on the expense of 1) sludge disposal, 2) caustic, and 3) lime.



RESULTS

- Fully automated dosing
- Extended filter run time
- Turbidity event mitigation
- Reduced coagulant demand
- Improved recycle performance
- Reduced filter head-loss
- Improved dewatering

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IMPROVEMENTS

Parameter	Before Implementation PACI	After Implementation ACH	Improvement
Coagulant Dose (PACI)	30 ppm	6 ppm	20% of existing dose 80% with ACH
Average clarifier discharge turbidity	2.2 NTU	0.7 NTU	70%
100-hour filter run head-loss	7 psi	1 psi	25%+
Solids generation	13,208#/day wet	5,283#/day wet	40% of existing
Corrosivity before correction; LSI	-2.33 moderate	-1.39 minimal	40% reduction
Lime for corrosion control	34 mg/L	6 mg/L	83% reduction



Left: Without Low Dose™ control
Right: After Low Dose™ control

FEATURES

- Fully automated
- Multiple analyzer inputs
- Auto & Enhanced Coagulation
- Corrosion Monitoring
- Auto TOC and DBP Compliance
- Charged Value Polymer Dosing
- Zeta Potential Driven
- Temperature Compensation
- SCADA Integration

Low Dose™ is a trade name of Marmac Water, Inc.

The Low Dose™ automated chemical dosing software is patented; USPTO 11,505,478

Marmac Water, Inc.
Greenwood Village, Colorado USA

Gregg McLeod
gregg@marmacwater.com | 720 219 3236

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