

# THIOGUARD® TST

TOTAL SYSTEM TREATMENT PROCESS APPLICATIONS FOR MUNICIPAL WATER AND WASTEWATER

Benefits outlined in this table require Thioguard's superior technical grade magnesium hydroxide combined with the Thioguard Advantage Package of consulting, performance testing, inventory control and delivery services.

With the Thioguard Advantage Package, it's your process *Mg<sup>+</sup>nified!*<sup>(TM)</sup>



THIOGUARD BENEFIT	HOW IT WORKS	WHAT TO LOOK FOR	HOW TO MEASURE	OPTIMAL RESULT/ BENEFIT/ SAVINGS	COMMENTS	
<b>COLLECTION SYSTEM</b> Odors Corrosion FOG (Fats, Oil, Grease) Air Relief	1. Increases wastewater pH 2. Buffers long-range 3. Absorbs and complexes odor compounds 4. Facilitates chemical and biological breakdown of FOG 5. Minimizes gas evolution 6. Neutralizes acid/prevents corrosion 7. Reduces collection system gas binding	1. Reduced odors 2. Increased Surface pH 3. Reduced FOG accumulations 4. Decreased Pump Station runtimes	1. Odalogs 2. Surface pH paper 3. Visual Inspection 4. Pump out frequency 5. Air Relief Valve Discharge Volume and Frequency	1. 95% reduction in odors 2. Surface pH >4 3. Minimal/No FOG 4. Reduced PS Energy Costs	1. Customers can "dial in" the desired level of treatment 2. Best acid neutralization prevents premature infrastructure corrosion & replacement, adds numerous benefits downstream 3. Thioguard can reduce FOG related SSOs. 4. Thioguard can reduce pumping costs on long force mains	
<b>WASTEWATER TREATMENT</b> BOD (Biological Oxygen Demand) TSS (Total Suspended Solids) NH <sub>3</sub> (Ammonia) Phosphorus FOG	1. Increases wastewater pH 2. Sustainable non-carbonate alkalinity 3. Provides nutrient enhancement for biological efficiency 4. Improves nitrification efficiency	1. Increased Bioreactor Aeration Basin pH 2. Increased Bioreactor Alkalinity 3. Lower SVI (Sludge Volume Index)	1. Basin pH profile 2. Soluble Alkalinity 3. Higher F/M (Food/Mass) Ratio 4. Lower Mixed Liquor Suspended Solids 5. Blower Run Times	1. Increased Oxygen Uptake Rate 2. Lower Aeration Energy Costs 3. Lower SVI 4. Lower Solids Production	Thioguard is the only liquid phase treatment used in the collection system that can enhance the treatment process at the Wastewater Treatment Plant.	
<b>BIOSOLIDS TREATMENT</b> Digestion CH <sub>4</sub> Methane Production Enhanced Dewatering	1. Increases pH and buffering alkalinity 2. Stabilizes and enhances volatile acid and methane generation	1. Increased digester pH and alkalinity 2. Higher Alkalinity/Volatile Acid ratio	1. pH Meter 2. Alkalinity Titration 3. Volatile Acid Analysis 4. pH profile across process basins	1. Higher Digester Gas quantity and quality 2. Increased Digester Load Capacity 3. Lower Solids Disposal Costs	Thioguard added to the collection system or sludge digestion process can also help the digestion and dewatering processes at the Wastewater Treatment Plant	
<b>NUTRIENT REMOVAL/ MODIFICATION</b> Phosphorus-Removal Nitrogen-Removal	1. Increases pH and buffering alkalinity 2. Nutrient enhancement of Phosphorus uptake	1. Increased Biological Nutrient Removal pH and Alkalinity 2. Reduced Total Phosphorus and Nitrogen	1. pH Meter 2. Alkalinity Titration 3. Phosphorus and Nitrogen Balance	Improved Phosphorus uptake and condition for Phosphorus wasting or recovery through side-stream treatments	Thioguard added at the plant or collection system is the only odor control strategy that can have positive influence on a BNR process.	

Harnessing the Power of Technical Grade Magnesium Hydroxide for the Benefit of your System

Your Strategic Partner, Delivering System Wide Benefits from Source to Treatment to Discharge

A DIVISION OF

