



# Process Control

Wastewater Treatment Industry



Solids Analysis

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Volatile Solids Analysis

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Trace Metals Analysis

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# Improve your wastewater treatment process with rapid solids analysis.

## SMART 6

Microwave + Infrared Moisture & Solids Analyzer

### Enhance Wastewater Process and Quality Control with Real-time Results

Solids management from the clarifier to final disposal represents 50 – 60% of the total operating expenses of the wastewater treatment process. The SMART 6™ system provides a rapid, accurate analysis that allows real-time adjustments of the dewatering process.

### Reduce Polymer Costs with Equipment Adjustments

The compact SMART 6 provides accurate solids analysis in under 3 minutes. This versatile and easy-to-use system can measure effluent solids as low as 500 ppm and sludge up to 60% solids. Having the ability to rapidly determine the cake solids during dewatering, enables quick equipment adjustments to reduce polymer costs. For example, if the lowest polymer cost per dry ton of solids is achieved at a target value of 20% solids, operators can perform hourly solids tests and reduce the polymer feed every time the cake is greater than 20%. Even a modest 10% reduction in polymer use could save thousands of dollars per year.

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Under 3 minute test times.

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Easy-to-use, rugged, and durable.

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Optimize polymer usage.

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Improve accuracy of blending in composting and chemical stabilization.

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Help maintain high solids to reduce incineration and transportation costs.



# Increase operational efficiency with rapid volatile solids analysis.

## Phoenix BLACK

### Microwave Muffle Furnace

#### Optimize Operation with Improved Testing Capabilities

The Phoenix BLACK™ is the world's fastest muffle furnace, allowing rapid determination of volatile solids in waste treatment plants. What previously took operators hours can now be accomplished in minutes with this 1200°C ASTM conforming muffle furnace. The Phoenix BLACK performs many high temperature applications, up to 10 times faster than traditional methods. Most volatile solids analyses can be performed in 10 – 15 minutes, versus hours using standard methods.

Volatile solids analysis can provide the information needed to optimize operation of the wastewater facility. Having test results within minutes transforms the exercise from mundane record keeping to active process control.

#### Optimize Waste Feed Rates of Incinerators

The Phoenix BLACK can determine the ash content of waste samples in minutes. This rapid testing method allows waste characterization information to be utilized for optimal waste feed rates. Adjustments can be made to the waste feed rates to reduce fuel consumption costs and control variances in emission levels.

Complete system for weighing, ashing  
of samples, and collection of data.

Unique airflow design to  
reduce combustion time.

Built-in exhaust system requires  
no fume hood space.

Menu-driven software for simple entry  
and storage of operating parameters.

Calibration software for precise  
temperature control.



# Speed your testing for trace metal analysis with microwave digestion.

## MARS 6

### Microwave Digestion System

#### Rapidly Prepare Samples for Trace Metals Analysis

The MARS 6™ can process up to 24 samples in under an hour for ICP-OES or ICP-MS analysis. The Clean Water Act Methods Update Rule for the Analysis of effluent effective July 19, 2021 expanded the use of microwave digestion to include 26 elements and analysis by both ICP-OES and ICP-MS.

#### Maintain NPDES Trace Metals Limits

The speed and ease of use of the MARS 6 assists wastewater plants in maintaining compliance with their NPDES permits for trace metals. Both effluent and influent streams can be tested to ensure compliance. Monitoring and detecting high levels of metals in influent can identify the source of contamination prior to processing at the wastewater facility. The MARS 6 provides the capacity to increase testing in your laboratory.

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Digest 24 samples in 30 minutes.

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Higher temperature digests provide a cleaner sample for analysis.

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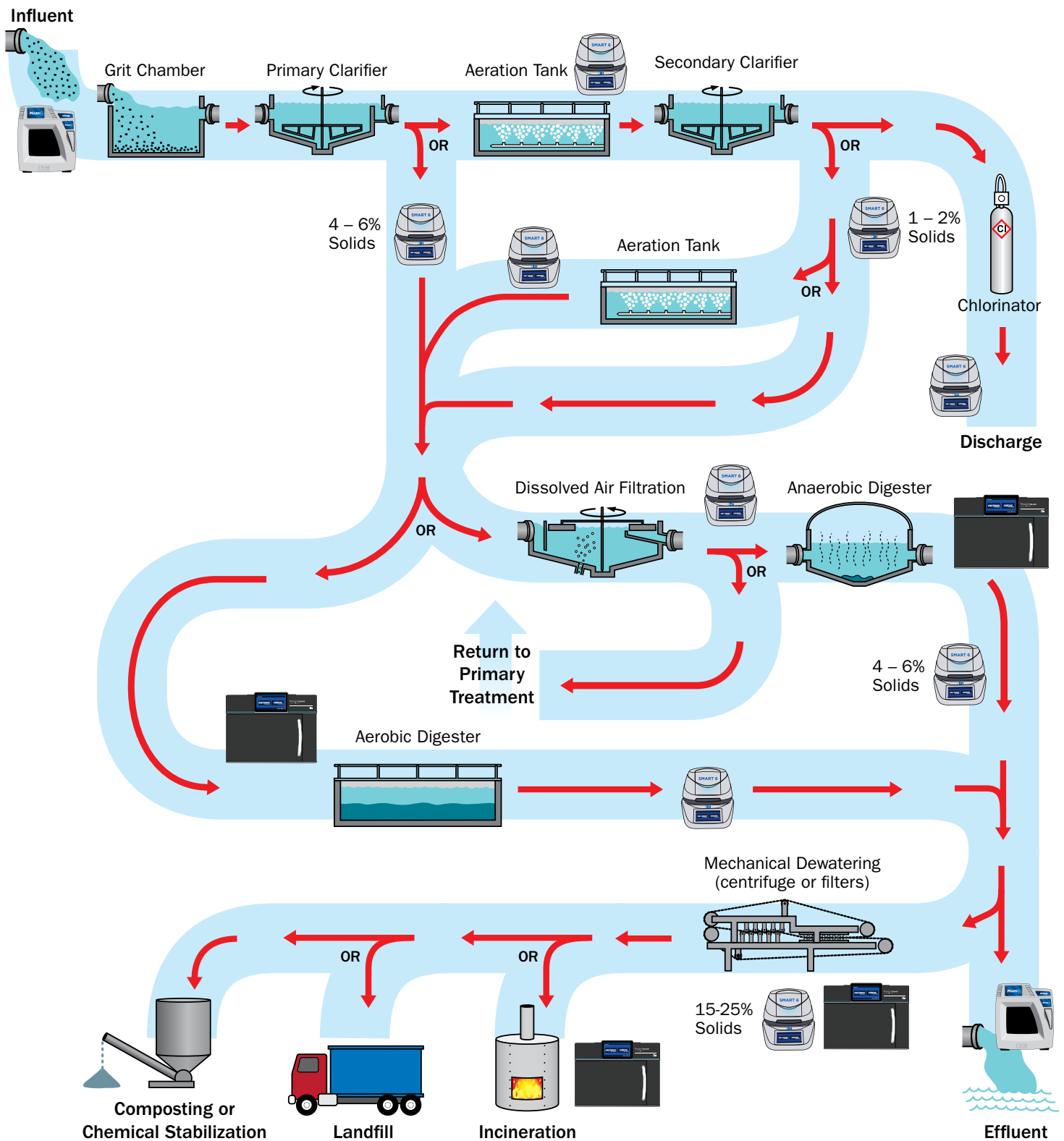
Pre- programmed USEPA method makes it simple.

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No repeated acid additions; saves time and acid usage.



# Where does CEM analysis fit in the wastewater treatment process?



The SMART 6, in combination with the Phoenix BLACK can be used for volatile solids/suspended solids analysis, with results in less than 20 minutes. Add MARS 6 for complete trace metal analysis for both influent and effluent, as advised by the Clean Water Act.







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