

50 YEARS OF EXCELLENCE

**JMS**

JIM MYERS & SONS, INC.



**Mega-FLOC**

Horizontal Paddle Wheel Flocculator

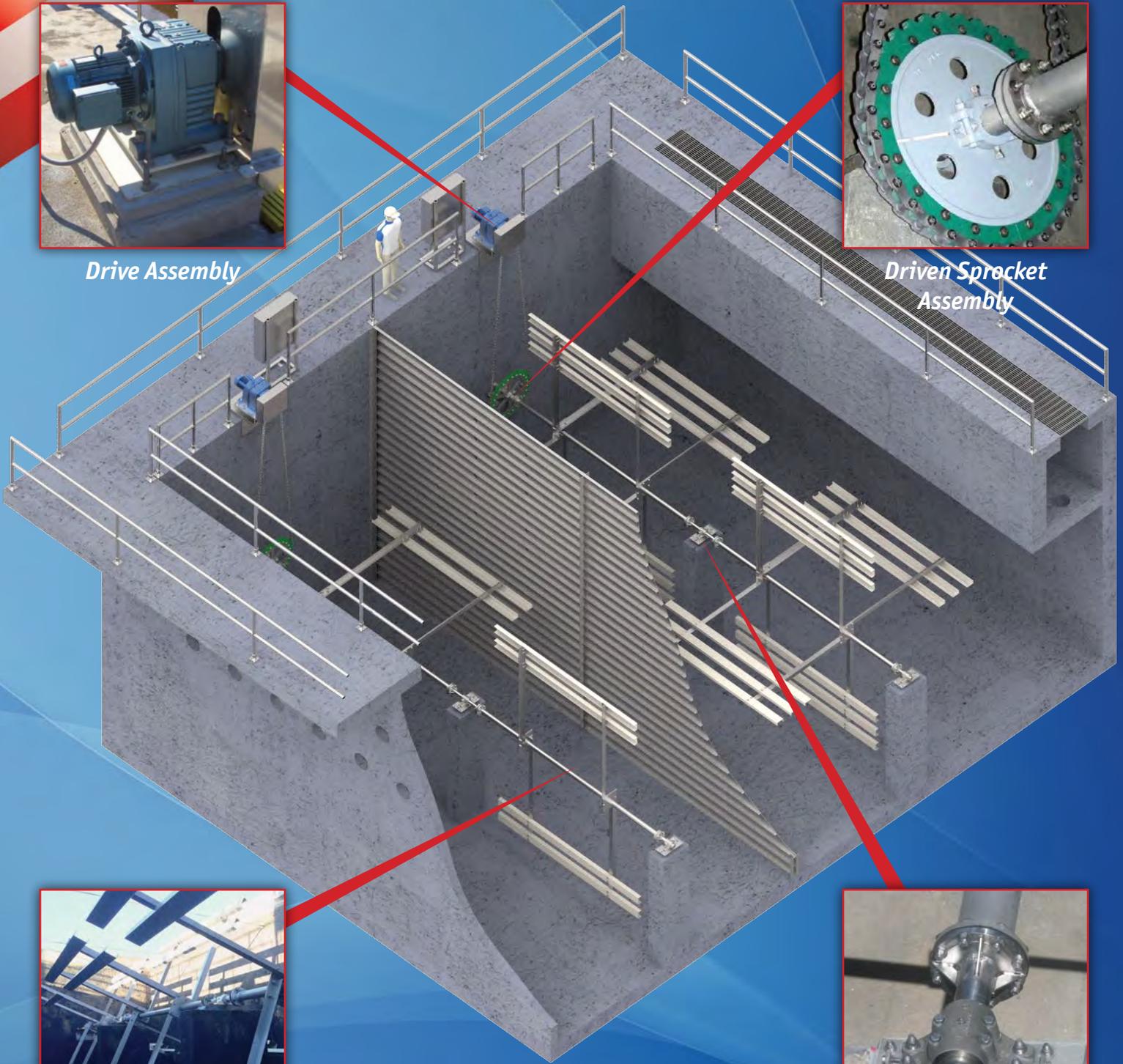
Proven ... Process ... Performance



*Drive Assembly*



*Driven Sprocket Assembly*



*Paddle Wheel Assembly*



*Bearing Assembly*

J I M M Y E R S & S O N S , I N C .



Since being established in 1962, Jim Myers & Sons, Inc. (JMS) has grown continually and today is recognized as one of the nation's leading designers and manufacturers of water and wastewater treatment equipment and systems. We have reached this point by incorporating equal parts innovation, quality and reliability into every component bearing the JMS name. We maintain that leadership position through one of the most comprehensive, solution-driven product offerings available.



Utilizing the latest software for BIM-compliant mechanical and structural design with commercial and proprietary analysis programs, our professional engineering staff makes concepts reality by providing solutions to complex problems.



True to our roots, our 72,000 sq. ft. Charlotte facility is the site for all fabrication, manufacturing, machining, and testing. There, the JMS commitment to excellence, a part of our DNA, manifests itself every day with the promise to continue for generations to come.



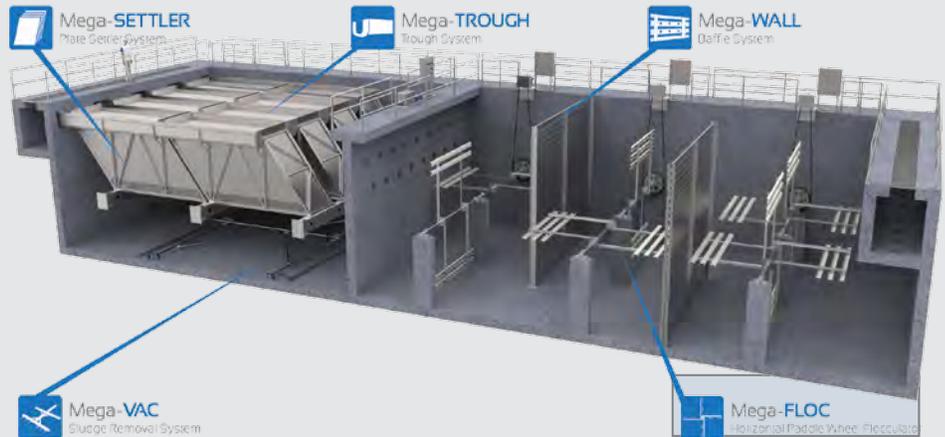
**Mega-FLOC**

Horizontal Paddle Wheel Flocculator

### Proven ... Process ... Performance

It is not possible to sum up in a few words what has taken better than half a century to achieve, but these three come closest. Our Mega-FLOC (Horizontal Paddle Wheel Flocculator) design has already **proven** itself in hundreds of successful applications throughout the U.S. and abroad. JMS in-depth knowledge of both the water and wastewater treatment markets allows us to fully understand your **process** and provide solutions like the Mega-FLOC (HPWF), solutions designed with operational efficiency in mind. Like all JMS products, our Mega-FLOC (HPWF) line offers an unsurpassed level of **performance** geared around the longest possible component life and the lowest maintenance demands of any comparable flocculator system.

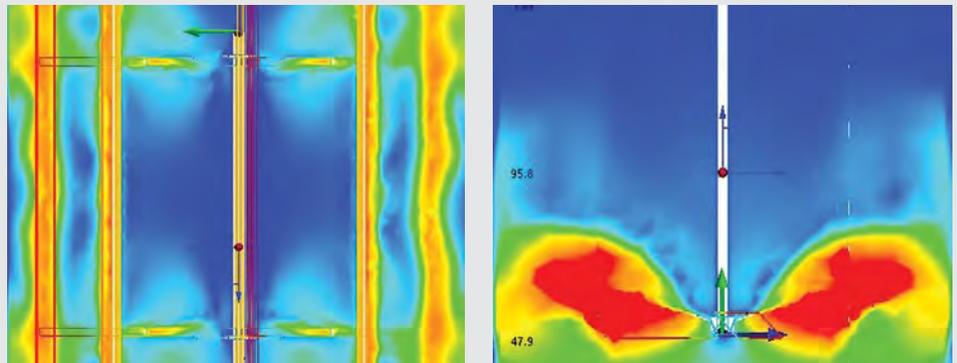
Just three words: Proven, Process, Performance, speak volumes. JMS has the answers you want, the solutions you need, and the support you deserve.



### Process Harmony

One of the key components in the water pre-treatment process, flocculation is most effective when the functions of fluid motion, differential settling, and velocity gradient (during each stage of the process) work in harmony to achieve the ultimate goal: maximizing agglomeration for either settling or filtration.

This concept of harmony is at the heart of JMS Mega-FLOC (HPWF) design. With more surface area than comparable turbine or impeller type units, paddle wheel flocculators can both operate at lower speeds, and achieve the desired velocity gradient. While lower speeds mean measurably reduced operating costs, it is never at the expense of performance. The lower tip speed (an industry standard 3 feet per second [FPS] for paddle wheels, versus 10 FPS for turbine and impeller units) coupled with the increased surface area, reduces floc shear while providing a broader homogeneous mixing action. Dead mixing zones and high shear areas in the basin, common in alternative systems (as seen in the CFD examples below), are all but eliminated.



**CFD Examples of Paddle Wheel (left) and Turbine/Impeller Type (right)**

## Why Go Horizontal?

One of the most economical options available for almost any flocculation need, Mega-FLOC (HPWF) have been utilized in thousands of plants across the country (a large majority of which have been provided by JMS). Ideally suited for large production plants, HPWFs provide the best value per million gallons per day (MGD) of any comparable design available.

## Advantages: Mega-FLOC (HPWF)

### Maintenance Advantages

- Minimal wear parts
- Single drive assembly for multiple flocculation reels
- Proprietary features designed to both reduce maintenance demands and enhance component life

### Process Advantages

- Optimum process control
- Follows "Ten States Standards"
- Low tip speed
- Homogeneous mixing

### Experience Advantages

- JMS is the leading supplier of HPWF systems in the country with thousands of JMS Mega-FLOC units in operation today
- Utilizes proven design enhancements critical for the longevity of the system
- Proven system design based on numerous installations and field testing data

## A Look At the Shaft

Proper sizing, material selection, and internally developed manufacturing processes add to the quality of each JMS Mega-FLOC (HPWF). Solid 17-4 stainless steel (SS) spool shafting at the bearing points utilizes bored blind flanges with special continuous fillet welds on both sides of the flange. A minimum of four gussets are installed for additional reinforcement. Pipe shafts, between bearings, are connected with blind flanges grooved to the correct diameter for precise alignment and joined by a continuous watertight weld. Attention to detail demonstrated after fabrication by surface milling of all flanges to parallel, eliminates stress risers and cyclic fatigue.



*Tuscumbia, AL Mega-FLOC (HPWF) Installation With SS Bearings*

## Getting Your Bearings

The Mega-FLOC (HPWF) design features proprietary split cast SS journal bearings with UHMW-PE or bronze liners (for high grit applications). This component selection offers each plant the aesthetic appearance, low life cycle costs, and durability they are looking for. All bearing assemblies come mounted on a base plate with proprietary leveling assembly for accurate alignment.

## Powerful Drive Train

In no area is JMS knowledge more evident than in the Mega-FLOC (HPWF) drive train with integral chain tensioning. Selection of materials of construction and use of the JMS proprietary design program optimize performance and minimize maintenance costs over the system's life cycle. Having sold more HPWFs than any other supplier, use of JMS know-how determines optimal gearmotor horsepower requirements using the desired velocity gradient, system efficiencies, and safety factors. The industry leading choice of SS for the drive sprocket hub, non-metallic UHMW-PE sprocket teeth, and specialized SS chain are JMS enhancements that utilize the latest in technology, for trouble free continuous operation. Drive trains are available in wet chain, dry chain, and direct coupled options.

*Mega-FLOC Drive Assembly With Proprietary High Durability Chain Powered by Custom Control Panel*

## JMS In Control

Because no two operations are alike, we custom-configure JMS controls to best meet each client's unique system requirements. Utilizing the latest technology, our team of seasoned electronics technicians (working in a UL-approved assembly environment) constructs each panel, quality testing it throughout fabrication. In addition, a rigorous routine of point-to-point wiring testing and power-up verification is done before final approval and certification for delivery.





### Success Stories

The Ed Love Water Treatment Facility is one of two water plants owned and operated by the City of Tuscaloosa, AL. Tuscaloosa is in west-central AL, and is home to more than 95,000 residents and a number of businesses. This facility, built in 1976, sits near Lake Tuscaloosa, the source for incoming water.

In response to population growth, the city embarked on a program to increase water production capacity, including upgrades at the Ed Love Plant, and a new plant to serve the area. At the former, old paddle style flocculators, with multiple reels powered by a single motor, were in dire need of replacement. Working with Almon Assoc., a highly regarded local engineering firm, JMS specialists proposed Mega-FLOC (HPWF) with each flocculator reel on a single drive to give the plant the flexibility they desired.

Four years later, the installation of JMS Mega-FLOC (HPWF) is considered a great success. Mr. Chris Jarrell, a 26 year veteran of the facility, praises the new equipment as more efficient with less maintenance requirements. JMS ability to customize the system, has surpassed their needs in terms of process control, and overall flexibility.



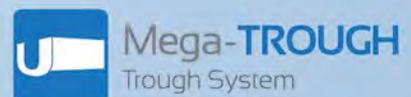
### System Integration

In addition to Mega-FLOC (HPWF), JMS expertise extends to a host of other products and systems shown at right. Having such a broad and varied range of experience means your water and wastewater needs, whether individual component or full-system, are understood. Optimized efficiency and process performance are yours for the asking. Contact JMS today.



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*"Making a Difference for Generations"*



Your JMS Sales Representative:

