

FRC

A Sulzer Brand

STATEMENT OF QUALIFICATIONS INDUSTRIAL WASTEWATER TREATMENT SOLUTIONS



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Introduction

FRC Systems International is a leading wastewater treatment solutions provider to organizations across the food, manufacturing, and oil & gas industries. With over 40 years of involvement in the design and construction of infrastructure projects, our multi-disciplined engineering staff has the practical knowledge and experience needed to meet the technical challenges of any industrial wastewater treatment project. We are committed to delivering effective and durable solutions that our clients can rely on.

FRC offers a complete range of services for wastewater management projects including preliminary and detailed process design, controls engineering, manufacturing, installation supervision, inspection, start-up and operator training.

FRC has completed over 500 installations in more than 20 countries around the world and is the premier dissolved air flotation system provider in the industrial wastewater market.

Industries We Serve

- | | | |
|-------------------|----------------------|------------------|
| - Automotive | - Fruit / Vegetable | - Prepared Foods |
| - Bakery | - Manufacturing | - Pulp & Paper |
| - Bio-Diesel | - Meat Processing | - Rendering |
| - Chemical | - Mining | - Textiles |
| - Confectionery | - Oil & Gas | - Vegetable Oils |
| - Cosmetics | - Pet Food | |
| - Dairy | - Pharmaceutical | |
| - Fish Processing | - Poultry Processing | |

Management Strategy

FRC uses the “Project Team” approach to manage and complete projects on time, within budget. A Project Manager directs the team and interfaces with the client to ensure an uninterrupted flow of information. Managers draw upon the versatile personnel at FRC to provide pertinent technical knowledge to a particular project.

FRC employs a “No Surprises” philosophy and we emphasize the following as critical elements in every project:

- Safety & ethics
- Proactive communication
- Responsiveness
- Quality
- Technical accuracy
- Empathy & cooperation

FRC is proud of its reputation as a trusted wastewater treatment solutions provider, which is based on process expertise, top-quality equipment, and operator-friendly systems. Our numerous long-term client relationships are evidence of our positive track-record.

Office Locations

FRC is headquartered in Atlanta, Georgia and has engineering offices in Toronto, Ontario and Bogota, Colombia. Manufacturing shops are located in Alabama and Arkansas.

Our representative network spans every state and territory in North America. This network allows us to quickly respond to the needs of clients and operators across the continent.



Capabilities

Engineering & Design

- Preliminary process design
- Piping and valving design
- Instrumentation & controls
- Equipment specifications
- Hydraulic analysis
- Tank design
- Catwalks/mezzanines
- Systems integration
- SCADA & remote monitoring
- Field engineering & routing

Manufacturing & Construction

- Aerated EQ tanks
- Screen supports
- Feed pump skids
- Flow, level, pH monitoring
- Pipe flocculators
- Chemical reactor tanks
- Dissolved air flotation systems
- Oil/water separators
- Sludge pumps and storage
- Dewatering belt presses

Field Services

- Process audits
- Installation supervision
- System calibration
- Start-up & training
- Troubleshooting
- Repairs & upgrades

Safety

Safety, environmental compliance and quality are core focus areas for every employee at FRC. We are adamant about adhering to established and site-specific health and safety programs and maintaining membership in contractor safety organizations. You can trust that FRC will deliver our solutions safely with respect for our employees and yours.





Turn-Key Projects

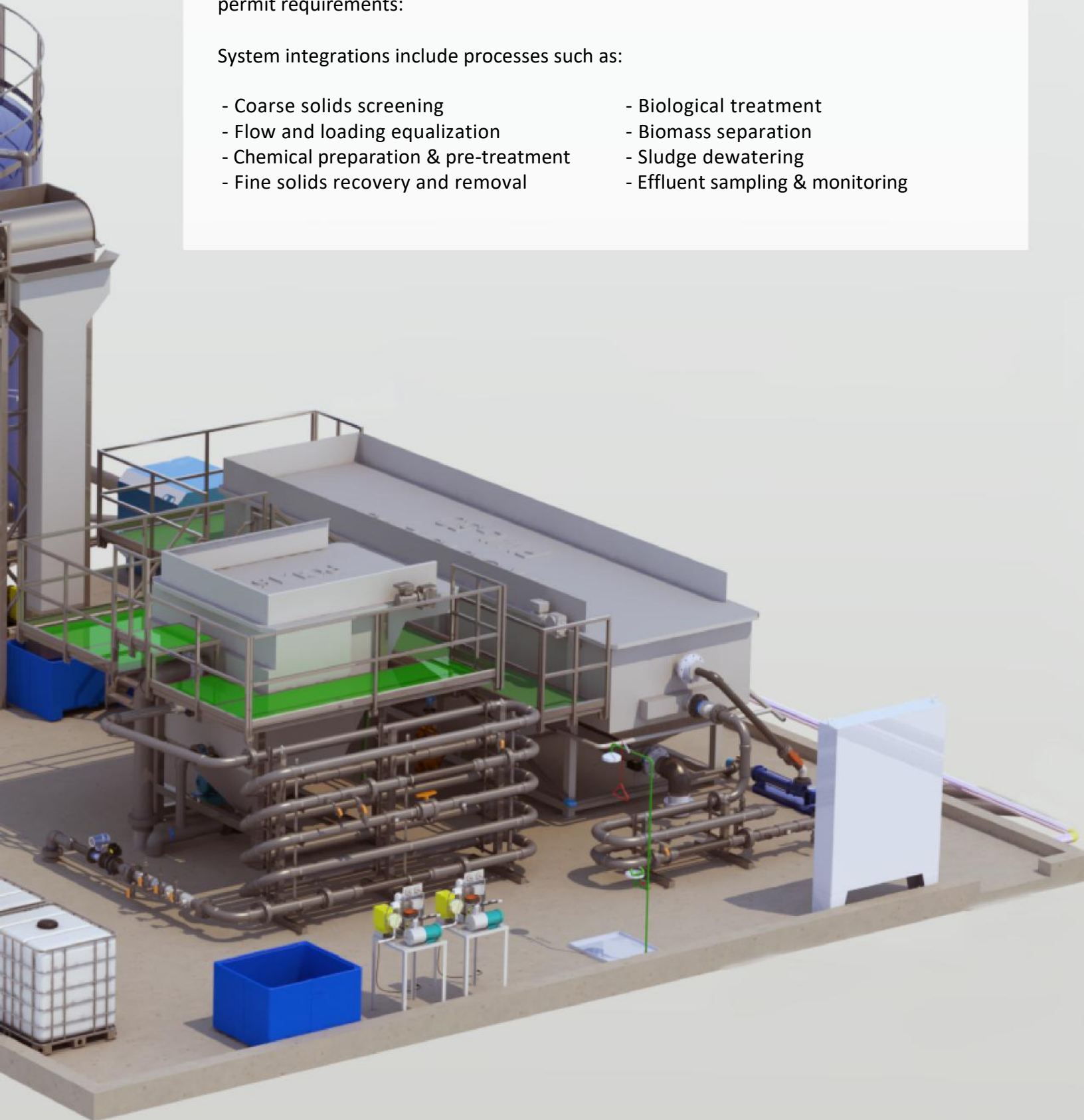
FRC is capable of implementing turn-key projects to carry an idea from initial concept through completion and operation. The turn-key approach simplifies vendor management and expedites project execution.

The image on this page is a 3D rendering from a turn-key system FRC installed for Trident Seafoods in Carrollton, Georgia. The process includes headworks, equalization, chemical/physical separation, biological treatment, and sludge dewatering.

For projects where turn-key delivery is not the client's favored arrangement, FRC can still integrate and pre-fabricate systems with all the major components required to meet permit requirements:

System integrations include processes such as:

- Coarse solids screening
- Flow and loading equalization
- Chemical preparation & pre-treatment
- Fine solids recovery and removal
- Biological treatment
- Biomass separation
- Sludge dewatering
- Effluent sampling & monitoring



Products & Systems

FRC is the premier designer and manufacturer of Dissolved Air Flotation (DAF) systems used to recover solids and reduce contaminant loading sent to downstream process equipment. FRC's DAF systems are engineered in two configurations: plate-pack style and open style. Other components designed and built by FRC are engineered to the specific needs of the project.

DAF Systems

Whitewater generated with an aeration tube and injected into the DAF. The microbubbles in the whitewater then allow the suspended solids to float and be removed as sludge.



Pipe Flocculator

The serpentine structure is a plug-flow reaction vessel made to simulate a long, straight pipe run. Coagulants and polymers are injected and mixed as wastewater accelerates and slows through the different sections of the vessel.





Biological Treatment

MBR (membrane bioreactor) and MBBR (moving bed biofilm reactor) both utilize microorganisms in order to reduce BOD levels in the wastewater. Nutrients are dosed in order to keep the microorganisms alive.

Anaerobic Treatment

Anaerobic biological treatment also utilizes microorganisms in order to reduce BOD levels in the wastewater. The main difference is the absence of oxygen. Nutrients are dosed in order to keep the microorganisms alive.



Belt Filter Press

The continuous dewatering system leverages gravity and mechanical pressing zones to draw residual water out wet sludge. A polymer preparation unit precedes the belt press to bind solids together for more effective dewatering.



Ancillary Components

Transfer pump skids, chemical dosing panels, catwalks, mezzanines and more are all designed for the project at hand. As needed, FRC is able to upgrade existing equipment to work with a new system installation.

Sulzer

Sulzer is a global leader in fluid engineering, specializing in pumping, agitation, mixing, separation and application technologies for fluids of all types. Sulzer has a vast network of about 15,500 employees across over 180 production and service sites in about 50 countries around the world. Sulzer began in Winterthur, Switzerland back in 1834, and grew to be industry leaders with reliable and sustainable solutions for the oil and gas, power, and the general industry markets.

Analyzing and predicting fluid flows is essential to many Sulzer activities, including water, oil, gas, vapor, steam, and even plasma flows for coating applications. Therefore, all Sulzer engineers have extensive knowledge in the field of fluid dynamics and thermal management, which helps to continuously improve the efficiency of products.

In 2018, Sulzer acquired JWC Environmental, LLC., a leading provider of highly engineered solids reduction and removal products, such as grinder, screens and dissolved air floatation systems for municipal, industrial and commercial wastewater applications. The transaction allows Sulzer to grow its wastewater treatment offering.



SULZER

Our Mission

Our ultimate goal in everything we do is to build beautiful, efficient, and effective solutions that our clients can rely on, day in and day out. We achieve this by melding sound design principles, application experience, and site-specific details together to determine the right process fit - and then we deliver on our promises.

We look forward to collaborating with you on future projects and welcome any further requests for information. Please direct all inquiries to Adriaan via email at adriaan@frcsystems.com or contact him by phone at (770) 534-3681.





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