

Reduce wastewater treatment project execution time with field-erected treatment systems

AN EFFICIENT AND ECONOMICAL TURNKEY WASTEWATER TREATMENT SOLUTION FOR MUNICIPAL AND INDUSTRIAL APPLICATIONS

Contract-to-completion timelines for site-built concrete treatment plants can be exceedingly long, often ranging from several months to years. For facilities with rapidly declining equipment or significantly rising demand, a faster solution is necessary—and one that doesn't sacrifice water quality, durability, or lifetime of the equipment.

With Evoqua's DAVCO™ field-erected treatment systems, efficiency and economy are delivered in a pre-engineered and factory built single package. Evoqua's single source approach integrates industry-leading expertise and equipment with design, build, installation

and commissioning services, and can deliver a high-quality project in months instead of years.

A SMART INVESTMENT

Field-erected treatment plant components are trucked to the site and installed on a concrete base slab. Typically, the site is prepared and excavated as necessary, and the slab poured while the system is manufactured. The field installation primarily involves assembling and welding the components, then cleaning and coating the entire system.



Evoqua offers a single-source approach that integrates industry leading expertise and equipment with design, build, installation, and commissioning services with the capability of delivering a high-quality project in months instead of years.

Beyond providing speed advantages, field-erected treatment plants provide a cost-effective, long-life solution compared to treatment plant construction. Installing a package plant is considerably less capital intensive than form-built, concrete basin type treatment plants due to the weather-related delays and labor-intensive conditions associated with built-in-place approaches. Field-erected plants are simpler and faster to install because they generally require less physical space, less yard piping and electrical conduit, less maintenance, and significantly less site preparation.

Throughout the course of their lifetime, field-erected treatment plants can save additional costs. They often eliminate the need for both multiple tankage and separate clarification systems and sludge recycle systems. Meanwhile, engineering and construction costs are often dramatically reduced using pre-engineered components and the precision factory fabrication of individual assemblies. The components and internal piping assemblies in these field-erected plants benefit from the machine shop atmosphere of factory construction and provide a major advantage with short on-site installation time.

Evoqua's DAVCO product line is an industry leader in the manufacture and installation of field-erected biological treatment plants for the reduction of

biochemical oxygen demand, total suspended solids, total nitrogen, and phosphorus. Evoqua's solutions support municipalities and industrial clients with capacities ranging from 0.1 MGD to 5.0 MGD. Field-erected solutions are available in a variety of configurations, including activated sludge processes, sequencing batch reactors, and oxidation ditch configurations, basically any biological process can be incorporated in the field erect design. Treatment plant material options include carbon steel, galvanized steel, stainless steel, concrete, or any combination of these materials. Evoqua also offers full turnkey construction, retrofit, rehab, and replacement services.

BUILT TO LAST

Evoqua's DAVCO™ product and service teams have worked with municipalities, developers, and engineers for more than 50 years to deliver turnkey projects and solutions in as fast as 6 months. DAVCO field-erected plants have proven their long-life functionality and durability over decades and in all types of climatic extremes.

Evoqua's DAVCO treatment plants are designed to meet or exceed all specified Federal, State, and Local government requirements. Evoqua has more than two decades of experience in the design of biological nutrient removal processes, meeting stringent effluent requirements. To simplify the process, customers are provided a single point of contact from order placement to commissioning. However, Evoqua's biological treatment process experts are always available to guide process selection and to assist with technical support in all phases of application refinement, process design, and specification development.

Evoqua's DAVCO product and service teams are among the industry's most experienced, relative to the field-erected treatment plant assembly methods, procedures, and quick start-up techniques. Over the years, the Evoqua installation team has earned an enviable reputation for its quality on-site workmanship, and its reliability in meeting strict schedule and budget parameters. With the use of the Evoqua installation team, sole source responsibility is assured. Quality is also top of mind as quality assurance personnel inspects all equipment and components based on strict quality standards.

By combining a single source approach that integrates industry-leading expertise and equipment with design, build, installation and commissioning services.

BENEFITS

- Offers quick installation—the permanent field-erected biological treatment systems are pre-assembled and then erected at the job site.
- Requires less physical space, less yard piping and electrical conduit, and less maintenance than site-built concrete systems.
- Easily incorporates a wide range of biological process options and special configurations such as the unique dual-path design.
- Proves a viable option for colder climates when partially or fully buried to protect from freeze damage.

Field-erected treatment systems in action

POPULATION GROWTH REQUIRES NEW WASTEWATER TREATMENT PLANT

Exponential growth and the construction of new housing developments in Jacksonville, FL, put a strain on the existing wastewater treatment plant. To meet rising demand, Jacksonville Electric Authority needed to expand its Blacks Ford Water Reclamation Treatment facility from 3 million gallons per day (MGD) to 6 MGD. Jacksonville Electric Authority (JEA) installed Evoqua's DAVCO field-erected treatment plant to meet the additional treatment requirements until construction on their existing plant is completed.

JEA selected Evoqua's DAVCO's five-stage steel field-erected biological wastewater treatment plant and a Gravisand® traveling bridge filter to meet tertiary filtration requirements. The field-erected system has added a capacity of 600,000 gallons per day.

Despite numerous challenges with extreme heat and rain, the schedule and budget were met for the project. In fact, the project was completed in 109 fair weather

days. This quick installation allowed housing developers to move residents into their new homes as they were built.

Upon completion of Jacksonville Electric Authority's expansion, the DAVCO™ field-erected treatment plant will be repurposed in the authority's other facilities to supplement capacity.

PROVIDING CRITICAL WATER REUSE AND EXPANDED TREATMENT CAPACITY

Water scarcity poses unique challenges to KW Resort Utilities Corp. (KWRU) the utility firm that provides wastewater management, wastewater recovery, and wastewater treatment across Key West, Florida. KWRU first installed an Evoqua DAVCO field-erected extended aeration treatment plant in 1983 and once again in 1995 to add even more capacity following growing tourism and population growth.

Around 2015, the utility was starting to exceed 90% of capacity. KWRU expanded the treatment capacity of



The DAVCO™ Field-Erected Treatment Plant installed at the Blacks Ford Water Reclamation Plant in Jacksonville, Florida provided a short-concept-to-completion project timeline to address the growing needs of a residential community.

the existing Davco field-erected biological treatment system to 849,000 GPD by adding a new three-stage 350,000 GPD plant to augment the existing plant capacity of 499,000 GPD.

KWRU's ability to produce water for reuse has been critical as the Florida Keys and surrounding waters have been declared a National Marine Sanctuary. Through the DAVCO field-erected treatment system, KWRU is leading Monroe County in reuse water production by a wide margin with daily production of 120,000 gallons, nearly equal to that of all other producers combined. KWRU is reducing the burden on the potable water supply at an annual rate of 42.3 million gallons.

By integrating the industry's most advanced treatment processes into a cost-effective package solution, the result is a highly flexible and efficient treatment facility that can be operational in months instead of years.



The DAVCO™ Field-Erected Treatment Plant was selected by KWRU because of its ability to be constructed quickly and adaptable to meet changing treatment needs

ABOUT EVOQUA'S DAVCO PRODUCT LINE

Evoqua, through its Davco product line is an industry leader in the manufacture and installation of water and wastewater treatment equipment and systems including field erected biological treatment plants, screw pumps, filtration equipment and clarifier rehabilitation. Davco products and services are supported by experienced project teams that have been working with municipalities, developers and engineers for more than 50 years to deliver turnkey treatment projects and solutions. Evoqua offers a single source approach that integrates industry-leading expertise and equipment with design, build, installation and commissioning services, and can deliver a high-quality project in months instead of years.

[Click here](#) to learn more about Evoqua's DAVCO field-erected treatment systems or contact a product expert.

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