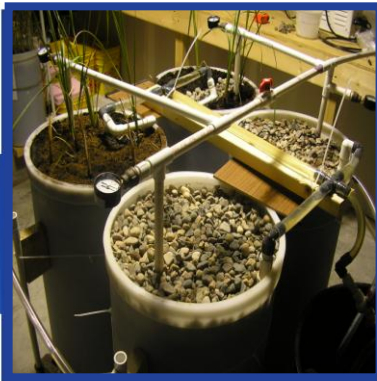


Industrial Pilot Testing

Leading the way with sustainable solutions



LOCATION

White Bear Lake, Minnesota

WASTE TYPE

Industrial Process Wastewater

TECHNOLOGY TESTED

Engineered Wetlands

NEED

Industrial processes can generate large volumes of wastewater often characterized by a complex chemistry and high concentrations. Industries must treat this process wastewater prior to reclamation or discharge. Engineered wetlands can provide a cost-effective, sustainable solution for the treatment of industrial wastewater. A pilot test is an efficient way to determine the feasibility, preliminary sizing and cost of an engineered wetland treatment system.

SOLUTION

Jacques Whitford NAWE performs pilot testing in our laboratory in White Bear Lake, Minnesota. Using strict test parameters, we can determine biodegradation rate coefficients for engineered wetland treatment unit processes. Additional design parameters of interest include plant type and density, aeration rate, light duration, sediment type, and hydraulic residence time. Rate coefficients are used to size engineered wetlands containing Jacques our patented **Forced Bed Aeration™** system. For various types of wastewater, engineered wetlands can provide a cost-effective, innovative, and ecologically sustainable treatment solution.

BENEFIT

Pilot tests for industrial process wastewater demonstrate how engineered wetlands can effectively remove pollutants and provide design parameters for full-scale industrial applications. The White Bear Lake, Minnesota laboratory is fully equipped to conduct pilot testing for numerous industrial process wastewaters in order to optimize the selection of engineering wetland aeration rates, sediment types, microbial degradation communities, and plant species for full-scale application. With a commitment to research and development, numerous successful applications, and years of operational experience, Jacques Whitford NAWE is uniquely positioned to provide innovative solutions for industrial clients.



Jacques Whitford Companies

Jacques Whitford
 Jacques Whitford Co., Inc.
 Jacques Whitford AXYS
 Jacques Whitford NAWE
 Jacques Whitford EcoCheck

Founded in 1972 • More than 45 offices across North America & Internationally •
 Employee owned • More than 1,600 staff • 100,000+ projects in North America &
 over 65 countries • Current projects obtained from repeat clients: 80%



Partners & Affiliates

Minaskuat • EM&I Jacques • FMA • CE Jones •
 Furgro Jacques GeoSurveys Inc. • IR Wilson •
 Kavik AXYS • Tlego'hti Jacques Whitford •
 Nu Nenne Axys Inc. • Westworth Associates •
 Nunami Jacques Whitford • Toxcon •
 FMA Heritage Resource Consultants •
 Neegan Naynowan Jacques Whitford Lp

Speciality Divisions

Jacques Whitford Training Institute •
 Geomatics Solutions

www.jacqueswhitford.com

