



DECENTRALIZED WASTEWATER TREATMENT & WATER RE-USE

HEADWORKS MBBR/IFAS TECHNOLOGIES OFFER AN IDEAL PACKAGED WASTEWATER TREATMENT SOLUTION

OPPORTUNITIES AND CHALLENGES

Hotels, resorts, shopping centers, schools, hospitals, residential communities, construction sites, and industrial concerns are frequently best served by on-site, decentralized wastewater treatment. Connecting to a distant central treatment facility is either prohibitively expensive, or the option doesn't exist. End-users can customize their on-site wastewater treatment system to generate effluent quality suitable for re-use. Recycling water in this manner reduces their water demand and environmental impact and lowers overall operating costs.

Golf courses and other heavy water-use facilities can tap into nearby sewer mains as a water source, employing an on-site treatment package designed to treat the wastewater for irrigation use and other purposes.

The challenge remains to find an affordable on-site treatment system that is reliable, simple to operate and maintain, and robust enough to produce consistent effluent quality despite wide swings in flow and influent quality commonly experienced in these applications.



Typical UF Polishing Stage

HEADWORKS HAS THE SOLUTION

GENERAL RE-USE



POTABLE WATER RE-USE















Headworks Integrated Treatment (HIT) System™ offers a modularized, skid-mounted and fully integrated high-rate wastewater treatment process employing both Moving Bed Biofilm Reactor (MBBR) single-pass and optional Integrated Fixed Film Activated Sludge (IFAS) return sludge technologies. For water re-use applications, treatment can be easily enhanced with tertiary filtration and disinfection.

THE HIT SYSTEM™ SPECIFICATIONS

FLOW	TYPICAL FOOTPRINT		POWER REQUIRED	
	IRRIGATION *	RE-USE **	IRRIGATION *	RE-USE **
100 m ³ /day 26,500 GPD	20 m ²	22 m ²	7 KW	10 KW
250 m ³ /day 66,000 GPD	24 m ²	34 m ²	10 KW	16 KW
500 m ³ /day 132,000 GPD	40 m ²	60 m ²	21 KW	30 KW
750 m ³ /day 198,000 GPD	55 m ²	88 m ²	32 KW	48 KW
	* Effluent for Irrigation BOD < 10 mg/l, TSS < 20 mg/l			
	** Effluent for re-use BOD < 5mg/l, TSS < 2 mg/l, NH3-N < 1mg/l			

THE HIT SYSTEM™ OFFERS:

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Concentrated Treatment
 Thousands of proprietary ActiveCell® biofilm carriers (media) support massive biofilm growth enabling high-rate BOD removal and protecting the biofilm from shock loads, fluctuations in flows and temperatures, and toxic chemicals
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Small Footprint
 Enhanced treatment capacity requiring minimal volume and footprint
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Easy Expansion
 Modular treatment system allows for multi-step plant expansion by adding more media and installing more treatment modules
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Resilient Process
 Treatment can handle wide swings in flow and influent quality and offers easy recovery from washout situations as attached growth provides an inventory of biomass
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Nutrient Control
 The system can be designed to provide high-rate nitrification, denitrification, and phosphorus removal for nutrient control applications
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Durability
 The heart of the process, the ActiveCell® media, will last for 20 years before replacement is required
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Low Maintenance, Simple Operation
 Self-regulating process automatically responds to fluctuations in organic loads without the need for operational adjustments
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Flexibility
 Multiple sizes and configurations for the process are available
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Odor-Free Operation
 Treatment odors can be contained and easily mitigated
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Polishing
 Non-potable and potable water quality is attainable with minimal solids-handling requirements
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Quick Installation
 Containerized and skid-mounted configurations are designed for easy transport and installation and are operation-ready with minimal on-site fuss
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Great Value
 High-rate, high-quality on-site treatment at a fraction of the cost of centralized treatment when factoring in design, initial capital costs, and ongoing operation and maintenance expenses