

AGAR[®] PnP



Aqwise Containerized WWTP

AGAR® PnP

Aqwise Containerized WWTPs

Various Applications

- Small or Remote Communities
- Residential complexes
- Office buildings
- Resorts & Hotels
- Industrial Parks
- Mines
- Marine Platforms
- Rest Areas
- Gas stations
- Shopping malls

The Need

Water scarcity, sustainable development, climate change, urbanization and increasing demands on resources are changing traditional forms of water/wastewater management and treatment. The environmental impacts of long sewage pipes are also moving stakeholders to adopt decentralized local wastewater treatment options.



The Advantages

There are clear advantages to decentralized WWTPs:

- Eliminate the need for long sewage pipes and pumping stations.
- Minimal sewage discharge fees
- Create an alternative local water source .
- Reduce risk to groundwater pollution.
- Lower carbon and environmental footprints.



AGAR® PnP

The AGAR® PnP is a decentralized “plug and play” containerized WWTP which was developed following our long years' experience in wastewater treatment and decentralized units.

The unique design and proprietary technologies which are utilized in the AGAR® PnP ensure superior efficiency & very simple operation with minimal maintenance.



The AGAR® PnP Family

We have developed three AGAR® PnP types to suit various market needs and comply with the latest regulatory standards.

AGAR® PnP-O: BOD & Ammonia removal

The **PnP O** is designed for removal of Organic matter, ammonia and solids. The unit consists of two AGAR® MBBR stages and an AGAR® MC.

Effluent quality:

- BOD < 20 mg/l
- TSS < 30 mg/l



AGAR® PnP-N: BOD & TN removal

The **PnP N** is designed for removal of organic matter, TN and solids. The unit consists of one anoxic, two aerobic MBBR stages and an AGAR® MC.

Effluent quality:

- BOD < 20 mg/l
- TSS < 30 mg/l
- TN < 15 mg/l






AGAR® PnP-R: Creating local water source

The **PnP R** is designed to enable effluent reuse. The system consists of biological MBBR stages, an AGAR® MC and tertiary polishing.

Effluent quality :

- BOD < 10 mg/l
- TSS < 10 mg/l
- TN < 15 mg/l



-  Irrigation
-  Toilet flushing
-  Cooling tower
makeup water

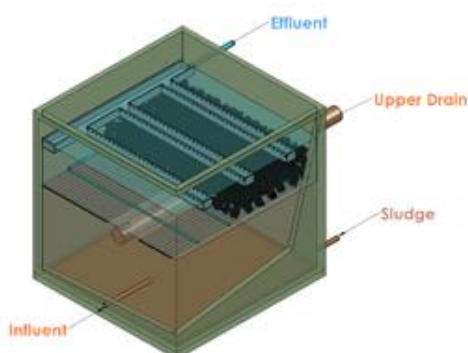
The PnP Proprietary Technologies

Aqwise proprietary technologies enable us to provide one of the most efficient and robust decentralized units available on the market today.



AGAR® MBBR & Aqwise Biomass Carriers

The core of the process are the ABC media and our AGAR® technology. The unique open geometry of the ABC media and high surface area result in superior process efficiency. The patented airlift hydraulics design assures highly efficient mixing of the biomass carriers and minimizes aeration requirements .



AGAR® Media Clarifier (MC)

The AGAR® media clarifier includes a fixed package of biomass carriers in the upper part. The treated water flows upstream through this package for solids removal. Larger particles settle on the bottom of the MC due to gravity. The carrier package is backwashed 1- 2 times per day. Excess sludge from the media clarifier is collected in a sludge tank.

PnP Benefits

- High efficiency
- Minimum environmental impact
- Easy installation - Plug& Play
- Simple operation
- High resistance to hydraulic & toxic shocks
- Aqwise proprietary MC - provides low effluent levels TSS with minimal chemical consumption

Electrical consumption*

- PnP-O: 0.5-0.55 kWh/m³
- PnP-N: 0.55-0.6 kWh/m³
- PnP-R: 0.85-0.95 kWh/m³

Technical Figures

Details	
Tank material	Pre-fabricated 40 ft. open top HC container, epoxy coated
Media	ABC
Dimensions	12.1 (L) x 2.4 (W) x 2.9 (H) m – 40 ft. HC container
Gross weight (empty)	5,000 kg
Net Weight (with water)	60,000 kg
PLC & Control	Siemens brand (for PLC & components)
Noise level	< 70 [db(A)]
Installaion Type	Plug & Play
Transportation	Shipping as 40 ft. HC container

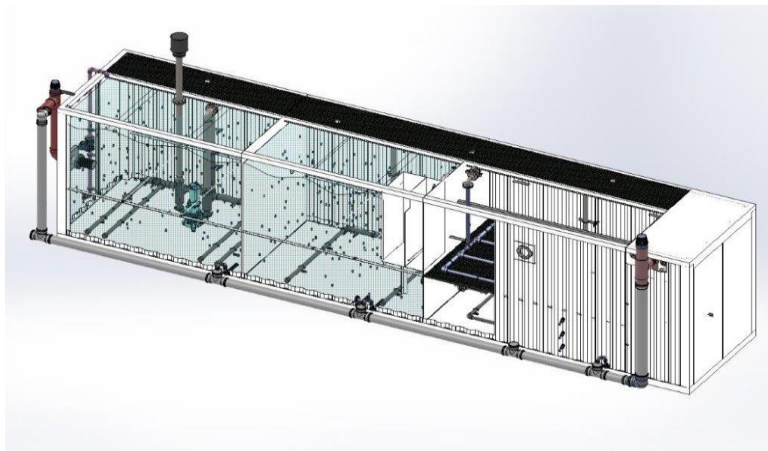
Scope of Supply

- 40 ft. high cube container
- Biomass Carriers: ABC
- Submerged air blower
- Mixer
- Solids separation - Media Clarifier
- Pumps
- Biological reactors
- Coarse bubble diffusers
- Retention Screens
- Tertiary Filtration
- Control panel
- Manual & automatic valves



Additional Scope of Supply

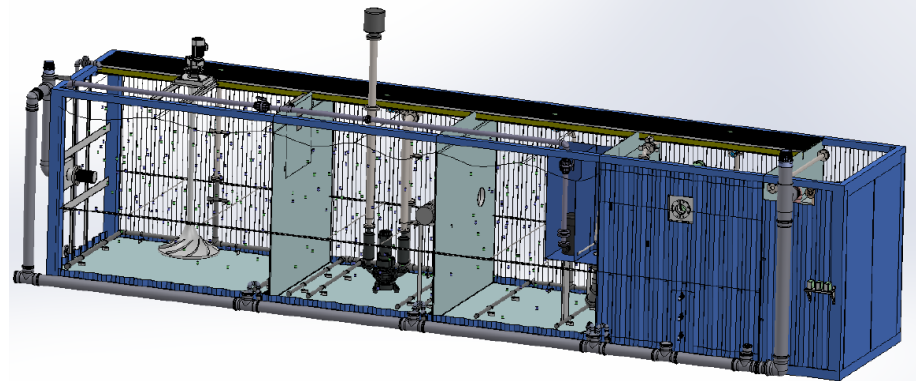
- Technical Support
- Installation and Setup
- Maintenance
- Application Support
- Hardware Support
- Warranties & Guarantees



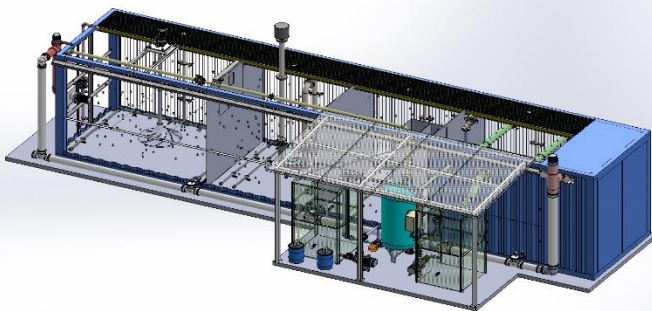
AGAR PnP-O

Process	Max Flow m ³ /d	Load PE	Effluent BOD [mg/l]	Effluent TSS [mg/l]	Effluent TN [mg/l]	Effluent TP [mg/l]
MBBR	300	2100*	< 20	< 30	N/A	< 1

AGAR PnP-N



Process	Max Flow m ³ /d	Load PE	Effluent BOD [mg/l]	Effluent TSS [mg/l]	Effluent TN [mg/l]	Effluent TP [mg/l]
MBBR- BNR	200	1300*	< 20	< 30	< 15	< 1



AGAR PnP-R

Process	Max Flow m ³ /d	Load PE	Effluent BOD [mg/l]	Effluent TSS [mg/l]	Effluent TN [mg/l]	Effluent TP [mg/l]
MBBR/BNR/Filtration	200	1300*	< 20	< 10	< 15	< 1