

HeadCell® vs. Aerated Grit Basins

HeadCell System Outperforms Aerated Grit Basins, Reduces Energy Use & Footprint
Wastewater Application Sheet - Product Comparison



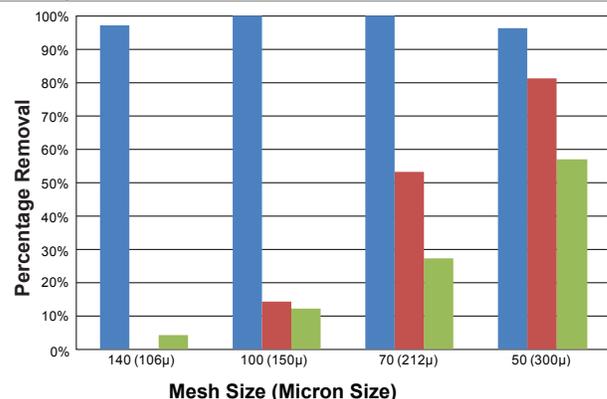
Drained Aerated Grit Basin



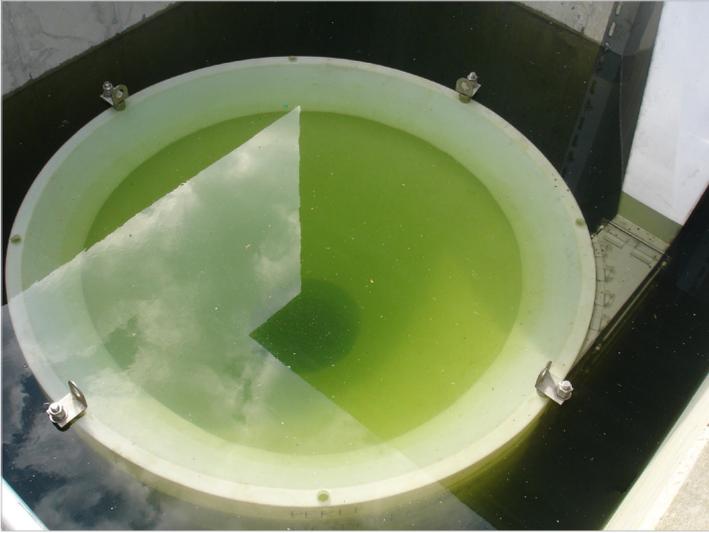
Drained HeadCell® Grit Concentrator

Aerated Grit Chamber Characteristics		HeadCell® Characteristics	
Spiral roll velocity pattern perpendicular to flow	Design	Stacked tray, non-mechanical forced vortex	
Basin dimension dependent on flow, aerator type, and layout of the system to achieve spiral roll	Sizing	Surface loading based with surface area multiplied by stacking trays	
Typical removal > 212 micron (µm)	Performance (Standard)	95% removal of all grit 106 micron (µm) and larger	
Blowers required, grit auger is typical	Moving Parts	All-hydraulic with no internal moving parts	
Large	Footprint	Small footprint as additional surface area results from stacked tray design	
Basin size dependent	Capacity	Up to 46 Mgal/d (2015 L/s) with a single 12 foot (3.7 m) diameter unit	
Long straight wall concrete basin with a sloped bottom	Basin Configuration	Square, straight wall concrete basin and no influent or effluent requirements	
Potentially harmful volatiles & odors released due to large area to cover/ventilate	Off Gassing	No air added to wastewater, a small area to cover/ventilate if necessary	

- **Saskatoon, Saskatchewan - Canada**
Grit Solutions Startup System Performance Test (*HeadCell® System*)
- **East Bay Municipal Utility District, CA**
Borys, Gabb, Hake
Presented at WEFTEC, October 2000
(*Aerated Grit Basin System*)
- **King County WWTP - Seattle, WA**
Gravette, Strehler, Finger, Palepo
Presented at CWEA, April 2002
(*Aerated Grit Basin System*)



Independent Grit Removal Performance Tests Results at Three Different Plants



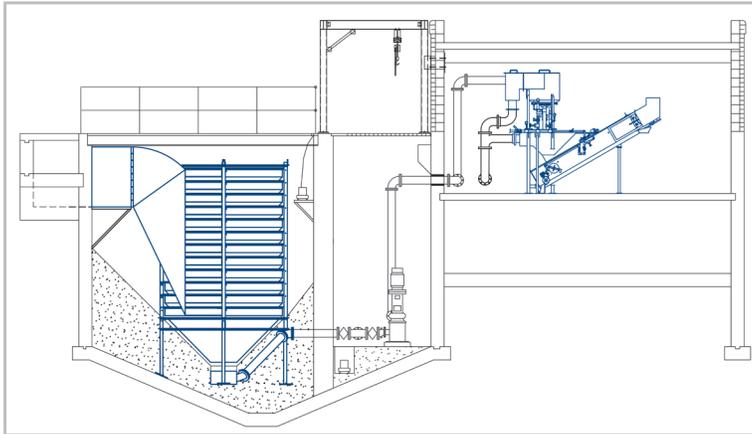
HeadCell® Grit Separator



Operating Aerated Grit Basin

HeadCell® Based System

The HeadCell grit separator has no moving parts, and no electrical requirements. Less than a foot of headloss is required to operate the hydraulics of a HeadCell. A HeadCell is part of an effective grit removal system. Concentrated grit and organics are collected from the HeadCell and pumped to a SlurryCup or TeaCup to wash the collected grit. A Grit Snail or decanter dewater the grit output from the washing unit. In addition the HeadCell has a very small footprint which easily allows retrofitting it into existing grit basins or other existing structures and channels. The number of trays can be designed to meet specific site requirements, and multiple tray sets can be used in parallel to allow retrofit in a wide variety of layouts. In many cases, the same flow can be treated in the same or a smaller footprint with dramatically improved grit removal efficiency and as much as 75% savings in energy costs.



HeadCell® Aerated Grit Basin Retrofit - Fox Lake, IL



Two HeadCell® Units Retrofitted into an Aerated Grit Basin - Council Bluffs, IA

Actual (Measured) Performance

The HeadCell® has been performance tested at a number of locations including the following:

- Fox Lake, IL: 95% removal of 100 µm and larger grit
- Largo, FL: 95% removal of 75 µm and larger grit
- Saskatoon, ONT: 95% removal of 100 µm and larger grit

Aerated Grit Chambers have been evaluated at a number of locations including the following:

- Fox Lake, IL: 18% capture of the total influent grit
- Woodridge, IL: 22% capture of the total influent grit
- King County, WA: Average 36% capture of the total influent grit