newterra
smart technology. sustainable solutions.

Iron Removal System

newterra offers the **Iron Removal System,** as an innovative, efficient and cost-effective solution for removing iron from ground water/wastewater/process water.

newterra Iron Removal System combines "DEFERUM™" Iron removal technology with automated controls and separation units, allowing for the removal of all types of iron (ferrous, ferric, and bacterial) to below 0.3 ppm.

The system can accommodate iron concentrations from 5 to 100 ppm (on a non-reagent basis), in addition to other pollutants (hydrogen sulfide, odour, manganese, organic substances).

Applications:
newterra Iron Removal System has broad range of applications, including:

- Ground, surface and sea water
- Industrial and potable water treatment
- Cooling tower water filtration
- Iron removal from well water
- Wastewater purification

newterra Iron Removal System Markets

Mining	Oil, Gas & Biofuels
Municipal (Drinking Water Utilities)	Commercial & Industrial
Agriculture(Including Irrigation)	Sustainable Developments

The newterra Iron Removal System can be used for all water treatment technologies, such as RO, UV, Desalination, and Membrane.

Media prior to contact with iron

Operational Principles:

The **newterra Iron Removal System** is based on the process that can be classified as intensive aeration / degasification followed by filtration.

The system consists of the following components:

- Aeration/degasification - for dissolved gas removal, and oxidization of bivalent iron to a form, that can be readily filtered out.
- Filtration by floating media for contaminant removal
- Hydro-robot device for self backflushing
- Backflush water treatment unit including coagulant/ flocculant treatment device and automatic particulate filter (SIF)

The core of the system is Polymer Floating Filtering Media which does not need to be regenerated or replaced. A unique system design allows the media to be used for 25 years.

Media following contact with iron

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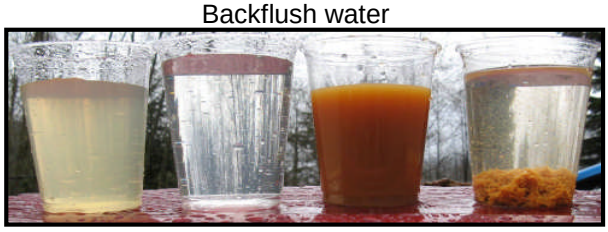
Significant features:

- Exceptionally high quality of treated water (iron content below 0.3 ppm)
- Handles all types of iron in concentration up to 100 ppm
- Unique aerator/degasifier removes dissolved gasses and dissolved iron in single pass
- Unique Polymer Floating Filter Media has 40 % porosity and size from 0.7 to 10 mm, and exceptional easy to backwash (approximately once a day for 2-16 minutes)
- Lw backflush water volume - below 1% of daily flow

Automatic self-back flushing filter

Dewatering of coagulated iron in the automatic particulate filter

Backflush water

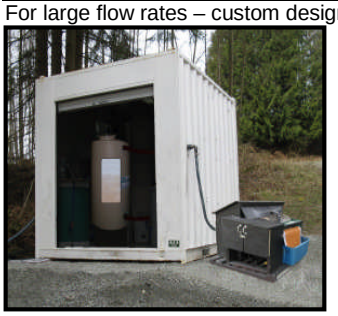


Raw water	Filtered Water	Backflush Water	Treated backflush Water
Iron greater than 20 PPM	**Iron less than 1 PPM**	**Iron greater than 100 PPM**	**Iron in filtered water 0 PPM**

Flow rate ranges for **newterra Iron Removal System** standard systems are from 24 to 500 m^3/day. The systems are fully scalable, can be configured in multiples to treat any required water volume. **newterra** supplies skid mounted and containerized **Iron Removal Systems.**

Model	Dimensions	Flow rate, max
newterra - DEFERUM 24	Diameter - 0.75m; Height – 4.0 m	24 m3 / day
newterra - DEFERUM 100	Diameter – 1.6m; Height – 4.0 m	100 m3 /day
newterra - DEFERUM 200	Diameter – 1.6m; Height – 4.0 m	200 m 3/day
newterra - DEFERUM 500	Diameter – 2.5m; Height – 4.0 m	500 m 3/day
newterra - DEFERUM 1200	Diameter – 3.65m; Height – 4.0 m	1200 m 3/day

For large flow rates – custom design **newterra Iron Removal System**



Turnkey **newterra** - DEFERUM 24 Containerized unit

Trailer mounted **newterra** - DEFERUM 100

Permanent on site **newterra** - DEFERUM 500

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