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Nature-Clear GWS10 Greywater System

Owner's Installation & Maintenance Guide

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ecoflo wastewater management

Specifications

What the package includes:

1. 450 Litre Filter tank
2. 100 mm OWV inlet pipe
3. 1 large piece of Fine Geotextile (Black or Beige)
4. 1 small piece of fine Geotextile (Black or Beige)
5. 1 small piece of course Geotextile(Black or Beige)
6. 3 x sample bags of gravel & sand

You will require

1. 100 kg of gravel nominal size 12-25 mm
2. 120 Kg of fine sand of nominal size 0.4-1.2mm
3. 320Kg of course sand of nominal size 1.5- 3 mm
4. 210 Litres of fine bark

NATURE-CLEAR GWS10
2.0 GREYWATER TREATMENT SYSTEM

The system provides a simple and low cost effective means of treating greywater. Not only is the equipment low cost, but also, on a suitable site, the only significant excavation work required to install the system will be the trenching. The ongoing costs of the GWS10 will be similar to those of a standard septic system.

In order for the filtration tank to work effectively it is necessary to remove food scraps and grease from the kitchen waste water (see page 7 for further details). For this purpose, we supply a 300L grease trap. As an alternative we can supply smaller grease traps which need more frequent emptying.

The filtration tank, which is less than 1 cubic metre in size, consists of a pine bark coarse filter on top of a fine sand filter.

The coarse filter removes:

- large particles not caught in the grease trap; and
- lint from the washing machine.

The sand filter:

- traps still finer particles
- polishes the water; and
- reduces the organic content of the water.

The pine bark is separated from the sand by filtration material. The filtered material and bark will compost over time but should be removed and replaced with fresh bark as per the instructions in the maintenance section of this manual. If your distribution area is downhill from the filtration tank your geotech engineer will be able to design a distribution system without the use of a pump. If this is not the case, you will need a pump well. If required, we recommended that the well and pump are purchased locally from your plumbing store. General instructions on how to install a pump are provided in this manual.

The water that exits in the filtration tank is classified as having undergone "Primary Treatment" and must be distributed into trenches as specified by your engineer. Make sure their size calculation does not include an allowance for toilet water, which would make the trenches unnecessarily large and expensive

GWS10 Filtration Tank

GWS10
FILTRATION TANK INSTALLATION

The filtration tank should be at least partially dug (at least 500mm deep) into the ground. The tank should be laid on a bed of sand with a 1-2% incline towards the outlet pipes.

The tank is first filled with 5 - 6 x 20kg bags of gravel (River sands Resources #3 gravel or similar with a nominal size of 12-25 mm). The gravel must be no smaller than this. The layer should be at least 80mm thick and cover the outlet pipe. Rake the gravel flat. Be careful not to damage the outlet pipes as the gravel is added.

Lay the larger fine black or beige coloured filter cloth material on top of the gravel such that the 100mm slots in the material are located above the 100mm inlet pipe. The material should hang over the sides (see page over).

Carefully add 120kg of fine grade washed sand (Riversands 7C sand or similar with a nominal size of 0.4-1.2mm). The fine sand layer should be about 100 mm thick. Rake the sand flat. Then add 320 kg of coarse washed sand (Riversands #6 sand or similar with nominal size of 1.5-3.0 mm). Rake flat.

Note:

We strongly recommend that the sand is washed before putting it into the tank by placing it on the filtration material and allowing water to flow thru to remove the fines from the sand. If the sand is not washed until the fines have been removed they will end up further down the system with the possibility of causing expensive blockages.

The smaller, fine black or beige coloured filtration material is then positioned to lie flat on top of the sand and then add half of the medium coarse pine bark 160 litres. The top of the shade cloth is designed to extend beyond the top of the tank for ease of removal when the material needs to be cleaned. The 'U' shaped slots in the top of the shade cloth are for fitting around the inlet pipe. Lay the course green coloured filtration material on top of half of the bark just below the inlet pipe and fill the tank with the rest of the bark.

Connect the outflow from the grease trap (if kitchen water is being diverted into your Nature-Clear) and other waste water sources to the inlet pipe of the tank ensuring that the inlet pipe is sealed where it enters the tank. Also seal the opposite end of the inlet pipe where it exits the tank. The screw cap end should be on the same end of the tank as the Outlets at the base of the tank.

If the application area is to be gravity fed the 2 outlet pipes from the filtration tank will now need to be connected to the pipe work of the application area.

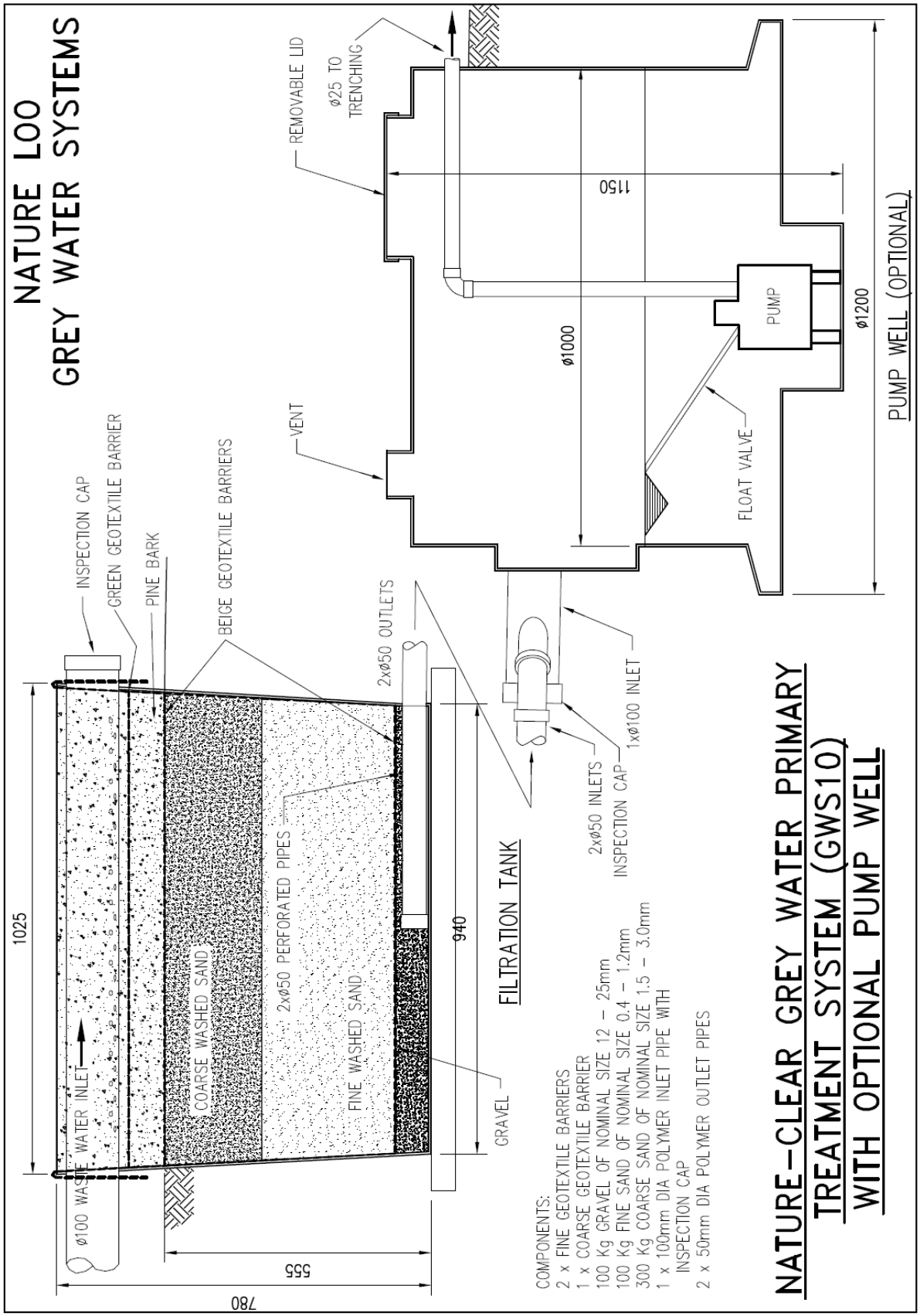
Contact Ecoflo for replacement materials:
Ph.: 07 3889 6144 or 1300 138 182 Email: info@ecoflo.com.au

NATURE-CLEAR GWS10
FILTRATION TANK SPECIFICATIONS

FILTRATION TANK:

- Material; Medium density grade polyethylene
- Properties; U. V stabilised - High stress resistance
- Thickness; Average 5 mm
- Construction;
  - Rotational moulding
  - All surfaces are continuous with no welded or joined seams
  - Ribbed structure for additional strength
- Dimensions;
  - Height: 780 mm
  - Length: 940-1025 mm
  - Width: 820-910 mm

NATURE-CLEAR GWS10
FILTRATION TANK SPECIFICATIONS



GWS10
PUMP WELL INSTALLATION (OPTIONAL)

If a pump well is to be used, it needs to be located next to the filtration tank on a flat bed of sand such that the lid is just protruding above ground. The outlet pipes from the bottom of the filtration tank need to be connected to the upper inlet port on the pump well (as shown in the schematic on the previous page) such that water will flow under gravity. All ports to be sealed on the outside and inside of the tank.

The pump is now to be installed. It should be raised above the floor of the tank by using, for example, a couple of bricks so that any sludge collects beneath the pump.

GWS10
MAINTENANCE

CLEANING AGENTS:

- Use only biodegradable household cleaners for cleaning any equipment or appliance connected to the system.
- Use low phosphate and sodium detergents.
- Minimise the use of disinfectants, bleaches, whiteners and spot removers.

WASTE WATER:

- Dispose of kitchen waste via a composter unit or garbage collection system.
- Minimise the amount of fat deposited in the drains by wiping pans and plates with kitchen paper towel before washing.
- Put a strainer on the kitchen sink to minimise the load on the filter system.
- Do not dispose of non-liquid waste or chemicals into the drains.
- Do not use a garbage grinder.
- Ensure your grease trap is regularly cleaned out as per the supplier's recommendations.

FILTRATION TANK:

- Inspect the inlet pipe for blockages on a quarterly basis. Clean if necessary.
- Aerate pine bark by raking every 3 months. At this time inspect the green coloured filtration material and remove for cleaning or replacement as necessary. When the bark contains more than 25% foreign matter, tip it into a garden bed where it will continue to compost. Replace with fresh bark.
- If water starts to pool on top of the bark the top black shade cloth needs cleaning - remove the bark and green filtration material as per the above. Clean or replace the black shade cloth, remove any sludge from the top of the sand and top up sand as necessary. Reinstall the shade cloth and cover with the bark and green filtration material.
- Every ten years replace all the sand and clean the tank.

GREASE TRAP:

- Inspect the inlet pipe for blockages on quarterly basis and clean if necessary.
- Pump out the 300 litre tank every three years.
- If you have the smaller grease trap it should be cleaned every six weeks.

GWS10
TROUBLESHOOTING

If the filtration tank is draining too slowly reduce the amount of grease entering the system by wiping pans and plates with kitchen paper towel.

Alternatively call Ecoflo (07 3889 6144 or 1300 138 182) for a supply of Nature Flush enzyme concentrate. A daily dose of Nature Flush enzymes into the kitchen sink over a 2-week period will improve the performance of the Nature-Clear as the enzymes digest the grease and fat deposits which may have caused minor blockages within the system.

If water is draining too slowly from the sink the grease trap needs emptying.