

How the Eco-Care Grey Water Unit Operates:

With the connections plumbed into the pipework from the shower and bath (you can also connect to the washing machine), water from the shower passes down the connection pipes, through the basket filter and into the Eco-Care unit. When the water level in the Eco-Care reaches a pre-set level, the internal submersible pump automatically starts and the water is pumped out through the 25mm lilac sillage hose to the garden. When the flow of water from the shower/bath into the Eco-Care stops, the pump will continue to operate and empty the Eco-Care unit and then the pump will stop automatically.

Is the Eco-Care Approved?

Yes. The Eco-Care grey water unit is approved as the "Eco-Care Waste Water Diverter System" and fully complies with Standards Australia Plumbing Safety Type Test ATS 5200.460-2004 and has licence number PST20083.

Is the Eco-Care Safe?

The Eco-Care has been designed to the Australian Standards and, provided it is installed by a licenced plumber who follows the Plumbing Code, it is perfectly safe. This is a very simple system with the minimum of moving parts and built-in failsafe features. Installation of the Polydrain within the garden areas does not need to be carried out by a plumber but, it does need to be carried out according to the recommendations.

If regular maintenance and cleaning of the internal filter is carried out correctly, the Eco-Care waste water diverter system will last for many years and save hundreds of thousands of litres of water.

Can I use the water from the kitchen sink and dishwasher?

No. The kitchen sink and dishwasher water is definitely not suitable for use as it contains a high volume of food particles as well as oil, grease and other contents that will clog the system and void the warranty.

Can I connect the washing machine?

Yes. Provided you use a detergent that is low in both sodium and phosphorous you can connect the Eco-Care unit to the washing machine water. For information on detergents please visit www.lanfaxlabs.com.au In most areas of Australia, the average rainfall is sufficient to leach away a sodium or phosphorous build up in the soil provided you do in fact use detergents with low levels.

Applying the shower/bath water to the garden:

Although water from the shower and bath is relatively clean, state laws dictate that this water MUST only be applied to the garden using a pipe system that is 100mm below the surface of the garden. To make this work efficiently, we recommend using "Poly-Drain" pipe. Poly-Drain is also known as "Ag-Pipe" and is a black 50mm diameter concertina type polyethylene (plastic) pipe with slots/holes pre-punched at intervals along the pipe length. With the poly-drain installed under the garden, the water from the Eco-Care is pumped out through the lilac sillage supply hose and into the poly-drain. The water in the poly-drain then flows along the length of the poly-drain and out through the holes into the soil in your garden.

How much Poly-Drain do I need?

The answer to this is determined by a few factors being the number of people who will be using the shower, if water saving shower heads are installed and, the area of garden that is available to use the water as irrigation. As a general rule, you will need 25m of poly-drain for each person that uses the shower and, 50m of poly-drain for each bath. So for a family with 2 adults and 2 small children, we recommend that you install 100m of poly-drain in the garden. If your garden soil is very sandy, you can reduce this length to 75m and, if the garden soil has a lot of clay content, increase

the poly-drain length to 150m. Please note that these lengths are an estimate only and will vary with the site and the volume of water that is pumped out by the Eco-Care unit.

How much water will we be able to save using the Eco-Care?

There are many conflicting "official" figures on water use so these are the real figures from our house. We have 2 showers, 1 bath and, 2 bathroom hand basins connected to the Eco-Care unit. Our showers are fitted with water saving shower heads with a flow of 11 litres per minute. With 2 adults and 3 teenagers in the house, we use a total of 660 litres of water per day through the showers. That is an average of 11 litres per minute for an average of 12 minutes per shower times 5 people. This comes to a grand total of 240,990 litres of water per year that now goes out into our gardens and lawn areas that was going into the sewer.

Just to put that volume of water into perspective, it is 240.99 tons. On an average building block of 600 square meters, it would cover the whole block to a depth of 400mm. It is enough water to completely fill the average kids bedroom from floor to ceiling 12 times. It is enough to flush the average toilet 30,123 times. It is enough water to run a large top loading washing machine 2,008 times. It is just a lot of water!

What happens if the power goes off?

The pump is electric and so when you have a power failure, the pump will not operate. If you are showering or the kids are in the bath and the power goes off, the Eco-Care will fill with water and the excess will automatically flow into the sewer line. When the power comes back on, the Eco-Care pump will start automatically and empty the water from the unit into the garden.

What do we do in wet weather?

The Eco-Care is fitted with a manual valve that diverts all of the water into the sewer. If you have had heavy rain or, if the volume of water coming from the shower/bath is unusually high, you will need to divert all of the water directly to the sewer for a day or more to allow the soil in the garden to dry out a bit. When the garden soil has dried out, return the manual valve to the "Garden" position and you are saving water again.

Is the Eco-Care suitable for all houses?

Sadly, the answer to this question is no. You can only have an Eco-Care unit installed if you can get to the pipes that come from the shower and/or bath. If your house is built on stumps or brick piers, is a high-set (QLD) or, is built on a concrete slab with room between the slab and the ground, you can probably install an Eco-Care unit. If your bath/shower drain pipes come out of the slab to the side of the house it is also probably suitable. If your house is built on a concrete slab that is on the ground, it is not likely that you can have an Eco-Care installed.

It is absolutely critical that the Eco-Care only be installed to pipes coming from the shower, bath and if you like, the washing machine. ***You cannot connect the Eco-Care unit to the toilets or the kitchen.*** Toilets and kitchen waste are considered to be "black water" and absolutely must go into the sewer.

Further information:

For further information or to receive a copy of our Eco-Care Information & Operating Manual, please send an email with your full contact details to rod@iwgroup.com.au

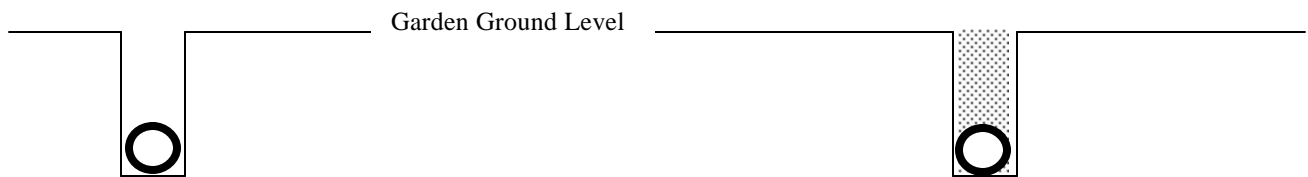
The Eco-Care unit must be installed by a licensed plumber. The irrigation equipment may be installed by anyone and does not require a plumber

Eco-Care Grey Water Diversion Unit – “Polydrain” layouts:

The whole idea of the Eco-Care is to enable you to re-use the water from showers, baths and hand basins. It is also possible to connect the Eco-Care to the laundry and washing machine however, you will need to make sure that you use detergents that are safe for the garden and will not damage the soil.

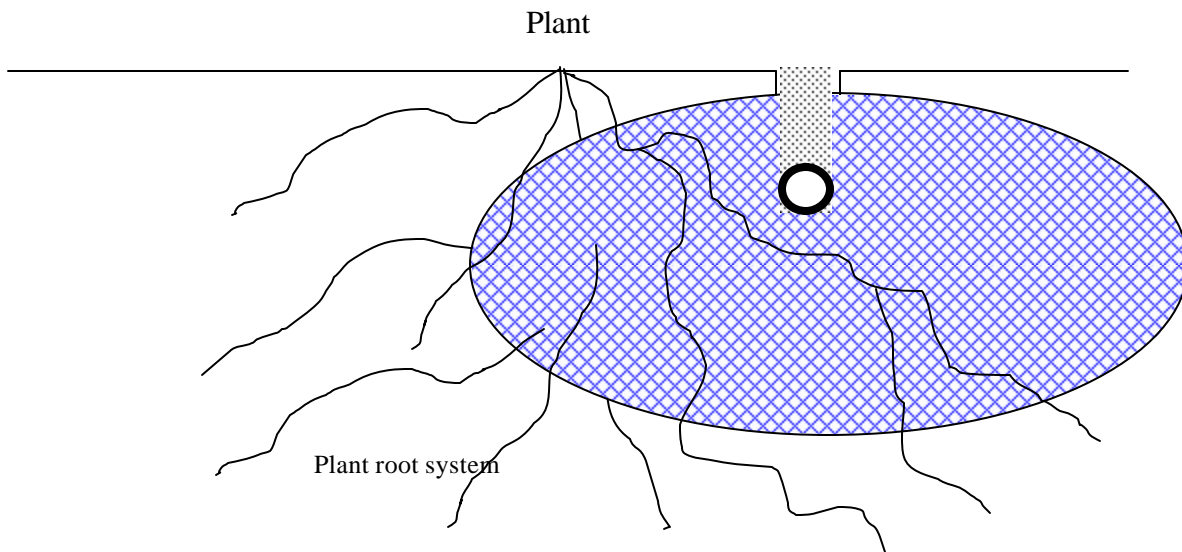
The water that goes into the Eco-Care is automatically pumped out through a length of 25mm lilac coloured pvc hose. This hose is used to get the water from the Eco-Care to the “Polydrain” so water does not leak out of the pvc hose. “Polydrain” is a black concertina type polyethylene hose with slots/holes cut into it at regular intervals to allow the grey water to move from the “Polydrain” into the garden soil. You can install “Polydrain” under the garden or under the lawn.

“Polydrain” must be buried to a depth of 100mm. This is a legal requirement as well as being the safe thing to do. Although the water that comes into the Eco-Care is relatively clean, it does contain oils, body fats and bacteria so it is not really clean water.



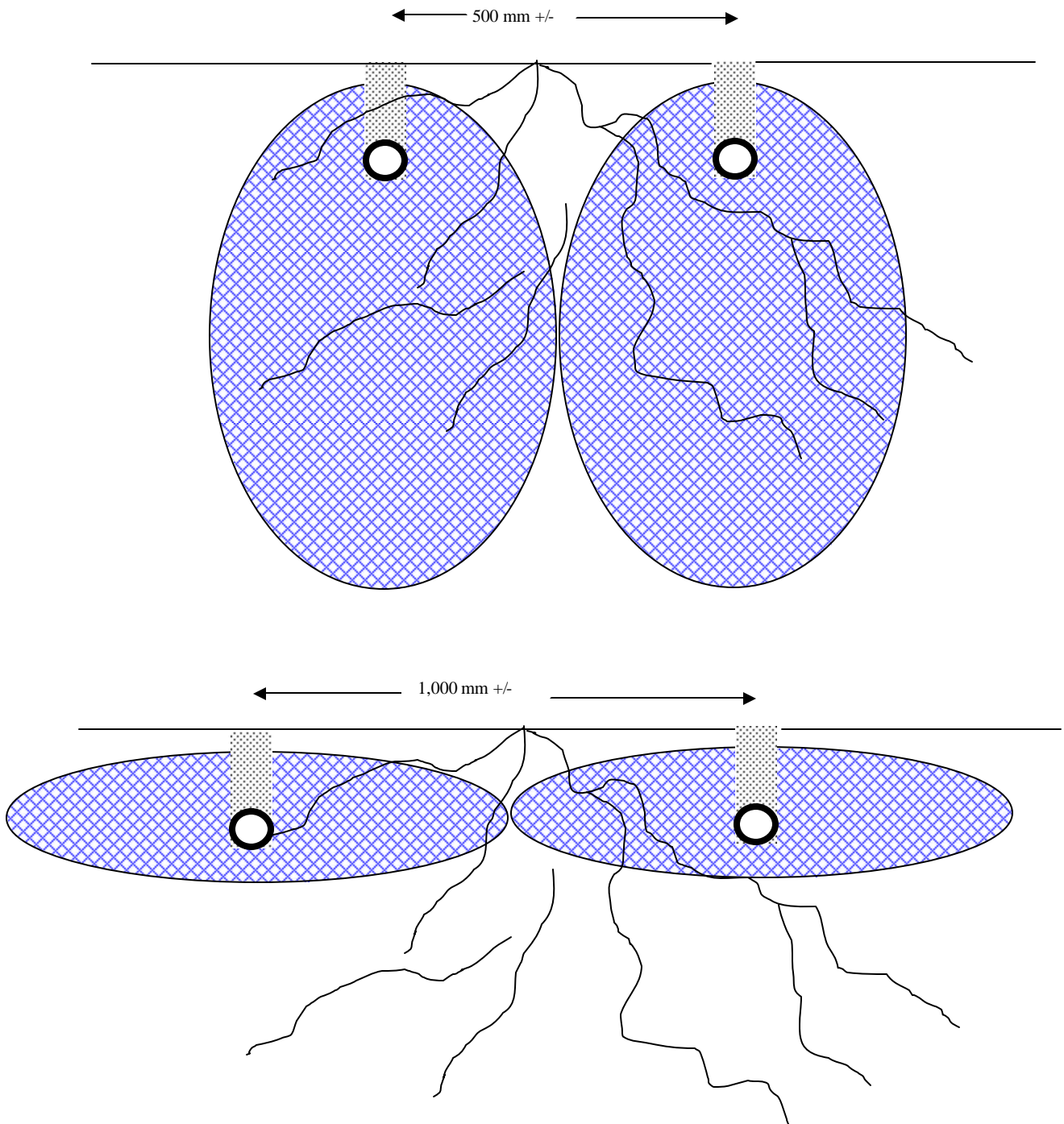
Trench with “Polydrain” installed. Trench is 60mm wide and 150mm deep.

Trench with “Polydrain” installed and gravel or heavy large particle sand supporting the “Polydrain”.



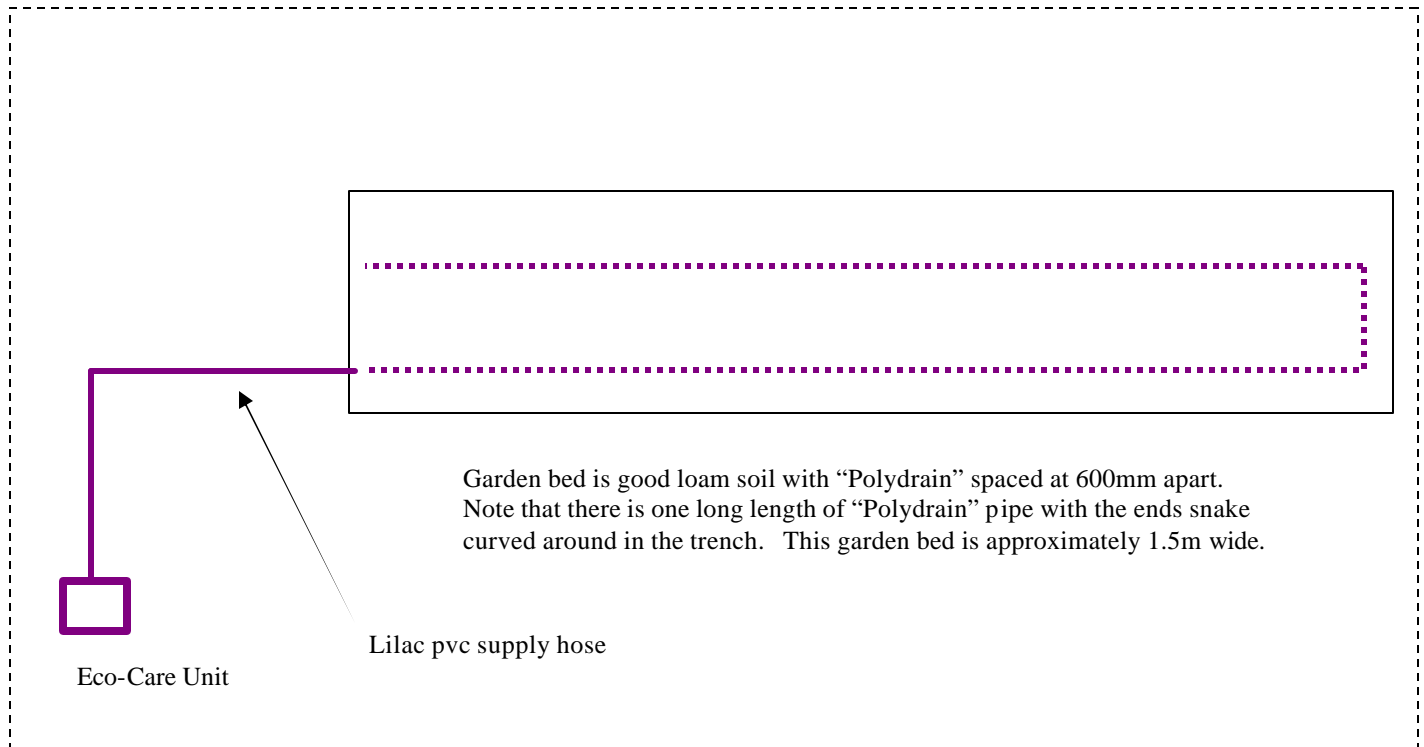
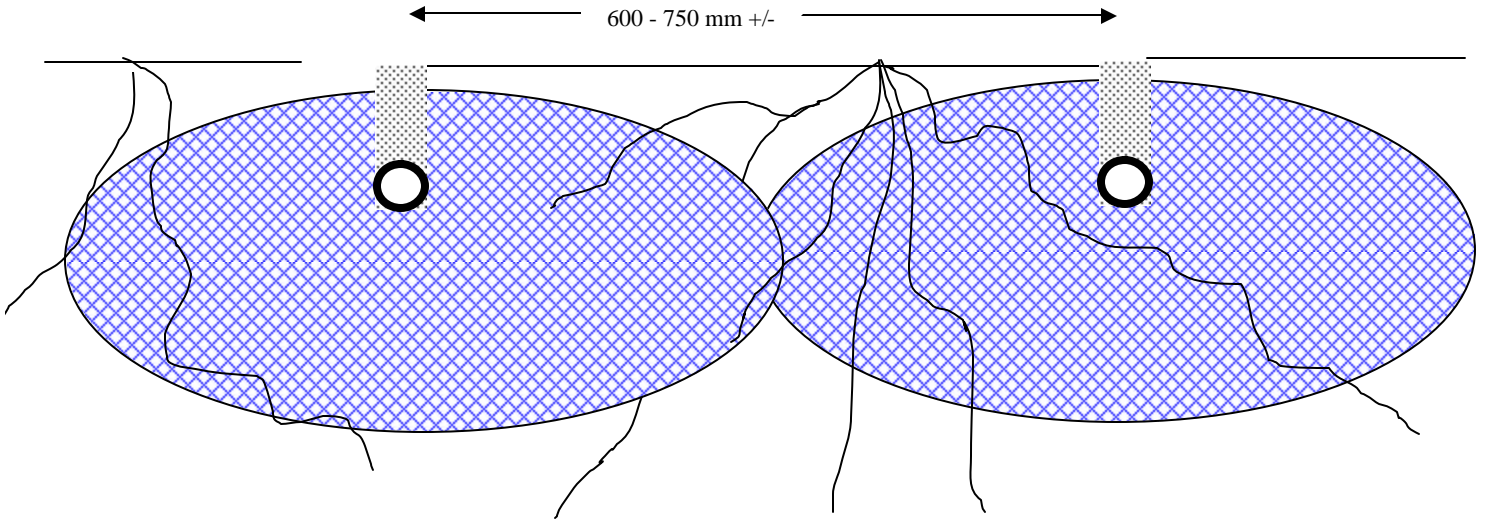
The hatched area shows the possible infiltration area of grey water from the Eco-Care through the “Polydrain”. The width and depth depends on soil types, sandy soil will see an increase in depth while a heavier clay soil will result in an increase in the wetted width of the moist soil area. The moist pattern here is for normal garden soil

This is the moisture pattern that I would expect to see in soil that was 100% sand .
To overcome this, "Polydrain" would need to be spaced closer together



This is the moisture pattern that I would expect to see in soil that was 90% clay. To overcome this, "Polydrain" would need to be spaced further apart.

When the soil in the garden is a good mixture of organic material, sand, clay and is well cared for, the most suitable distance between the rows of "Polydrain" is 600 mm to 750 mm.



What length is “Polydrain” available in?

“Polydrain” is available in standard 20m coils and joiners and end cap fittings are available. When you purchase your “Polydrain” from Irrigation Warehouse Group, we will always supply a connector and end cap with every roll.

How do I connect the “Polydrain” to the Lilac PVC supply hose?

Connecting the lilac coloured sullage supply hose to the “Polydrain” is not difficult as we can supply standard fittings for this task. If you only have one single length of “Polydrain” to connect the pvc supply hose to, we can supply the right PVC tape for this job.



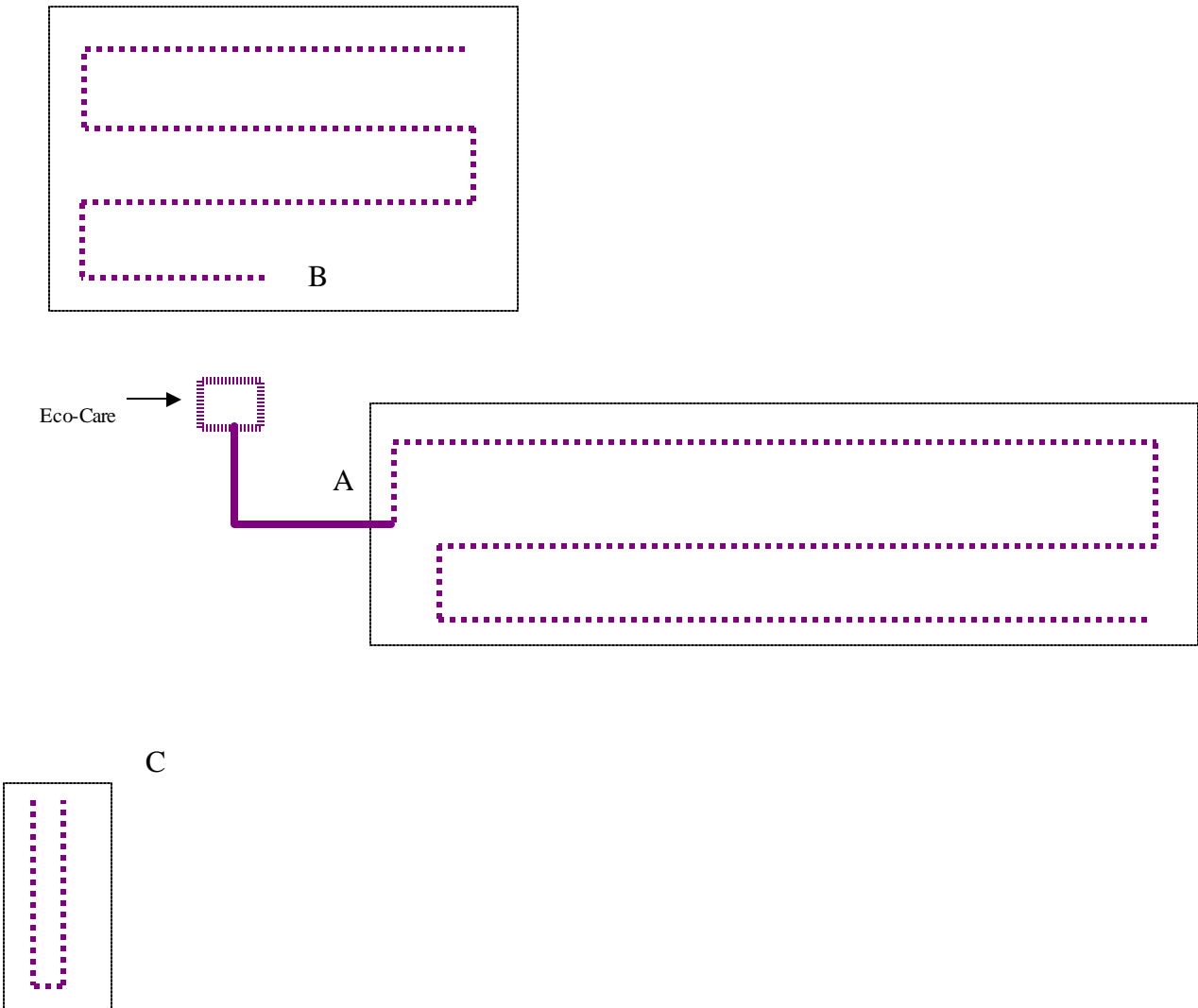
Polydrain with connector and “Nut & Tail” on the end of the sullage hose.



Polydrain with connector and removable cap in place

What if I have several garden beds with “Polydrain”?

If you have several individual garden beds and you have several different “Polydrain” ends to connect the lilac sullage supply hose into, we can supply a fittings kit for each of the ends. If this is the case, you need to remember to move the pvc supply hose from one area to the next every couple of days.



The Eco-Care unit is installed and the 3 separate garden beds have Polydrain installed. Monday, connect the sullage hose to garden “A”, on Tuesday, move it to garden “B” and on Wednesday, move the sullage hose again to garden “C”. Thursday you are back to garden “A” and so on.

Installation and operation instructions for the Eco-Care Waste Water Diverter System

- **THIS SYSTEM MUST BE INSTALLED BY A LICENCED PLUMBER OR WARRANTY WILL BE VOID.**
- **The Eco-Care Waste Water Diverter System fully complies with Standards Australia Plumbing Safety Type Test ATS 5200.460-2004 (Licence Number PST20083).**
- **The Eco-Care System is eligible for rebate schemes in Victoria, Western Australia and Queensland. Details enclosed.**
- **Generally all installations must meet the regulations of the local Council or Health or Water Authority but check local requirements.**
- **Grey water is recommended for use with sub-surface irrigation only.**
- **Avoid direct contact with Waste Water. The re-use of domestic Grey Waste Water may create risk to health and suitability will relate to site specific circumstances.**
- **Do not use on sewage (WCs) or kitchen sink or dishwasher outlets.**

Requirements vary from state to state. Your plumber should ensure that installation is in accordance with AS/NZS 3500.2.3003 Sanitary Plumbing and Drainage and any specific local requirements.

NOTE: CONNECTION TO DRIPPER LINES, SOAKER HOSE, SPRINKLERS, ADDITIONAL FILTERS OR ANY DISTRIBUTION SYSTEM OTHER THAN SUB-SURFACE POLY DRAIN WILL VOID WARRANTY AS THESE SYSTEMS MAY CAUSE PUMP FAILURE DUE TO UNDERSIZING OR RESTRICTIONS TO DISCHARGE FROM THE ECO-CARE UNIT. THE MANUFACTURER IS RESPONSIBLE FOR COMPONENTS IN THE UNIT ONLY. ANY MATERIALS OR INSTALLATION ON THE DISCHARGE SIDE OF THE UNIT IS THE RESPONSIBILITY OF THE PURCHASER AND INSTALLER.

NORMAL OPERATION OF THE UNIT

1. When power is initially turned on to the unit, the “Power on” and “Pump run” lights will come on and the pump will run for a few seconds even if the water level is below the top of the probe. The probe is the 25mm diameter tube on the end of the flexible lead inside the tank.
2. When grey water discharges into the unit the water level will rise to the top of the probe and the “Pump Run” light will come on and the pump will start.
3. When the water level drops to approx 150mm from the top of the probe the pump will stop and the “Pump Run” light will turn off.
4. Additionally, regardless of water level the pump will operate once every 24 hours to discharge residual water from the tank.
5. It is normal operation for some water to remain in the bottom of the tank to facilitate pump prime and prevent air entering the system.



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INSTALLATION AND OPERATION

The invert of the overflow from the tank must be at least 150mm above the overflow relief gully.

- Locate the unit to ensure that after installation there is easy access to unscrew the screw lid, remove the filter basket/sock and adjust the gate valve.
- Unscrew the screw lid and remove the warranty card, hose clamp and hose fitting, spare filter sock and information on detergents and rebates from the filter basket/sock.
- If installing into existing pipe work, position the tank/pipe assembly adjacent to the waste pipe and cut out the required section of waste pipe and connect to the top and bottom of the pipe assembly. As the angle of the existing waste pipe may vary, a few additional pipe fittings may be required (not supplied). The unit must be installed on a firm **and level** base.
When gluing the assembly to the waste pipe ensure excess glue does not enter the Gate valve.
- Failure to connect the overflow to sewer will breach Plumbing Regulations and may negate the Warranty.
- When the pipe connection is complete make sure that the probe is suspended freely down into the tank, install the filter basket and sock correctly (**See Checking and cleaning the filter**), screw on the lid and connect the hose fitting and lilac hose to the outlet fitting.
- Plug in and turn on the power
- **TO DIVERT WASTE WATER TO THE UNIT ENSURE THE GATE VALVE IS CLOSED (TEE HANDLE IS PUSHED IN).** Plug in the unit to the power supply. When the tank fills to the top of the probe, the pump will automatically switch on, watering your garden or lawn.
- Prior to connecting the lilac hose to the sub-surface irrigation check operation of the system with clean water.
- Connect the lilac hose to sub surface slotted aggie drain surrounded by aggregate in 200mm x 200mm trenches. Site area, soil type, slope of site and local requirements will vary. Your plumber will be able to advise of the specific requirements for your sub-surface irrigation system **which must be of sufficient length/capacity for the rate of pump discharge** – see **Pump performance** information on the following page.
- For minimum trench lengths required in Western Australia see below:

Number of bedrooms	Bathroom only Sand	Laundry only Sand	Bathroom & Laundry Sand	Bathroom only Gravel/Loam	Laundry only Gravel/Loam	Bathroom & Laundry Gravel/Loam
Up to 3 bedrooms (4 persons)	6 metres	5 metres	10.5 metres	8.5 metres	7 metres	15.5 metres
4 bedrooms (5 persons)	7 metres	6 metres	13 metres	11 metres	9 metres	19.5 metres
5 bedrooms (6 persons)	8.5 metres	7 metres	15.5 metres	13 metres	10.5 metres	23 metres

- Ensure the lilac hose from the tank to sub-surface irrigation is not subject to frost/freezing and ensure the lilac hose is not kinked or flattened hence restricting discharge. When burying the hose eg under pathways use a conduit to prevent flattening the hose.
Minimise undulations in the lilac hose to prevent air locking.

- **Detergents.** Household detergents that are high in sodium are likely to be detrimental to plants and the soil. The levels of phosphorous in detergents may also cause problems depending upon the soil type. Attached is information on commonly used laundry products – for more information visit www.lanfaxlabs.com.au

Thank you to Dr Robert Patterson CPSS, CPAg, FIEAust for this information.

- **Pump performance.** The nominal discharge of the pump is 110 litres per minute with no discharge hose. The height of the discharge end of the lilac hose and the length of the lilac discharge hose will affect the rate of discharge. For optimum pump performance minimise the length of lilac hose between the tank and the sub surface Polydrain.

Using all 20 metres of the 25mm lilac hose supplied, the pump discharge is:

Head	0 metres	1 metres	2 metres	3 metres	4 metres	5 metres
Discharge Per minute	60 litres	50 litres	45 litres	35 litres	25 litres	10 litres

The pump will start and stop without incoming waste water once every 24 hours.

- **Checking and cleaning the filter. CAUTION 240 VOLTS. AVOID ELECTRIC SHOCK. UNPLUG THE POWER SUPPLY BEFORE UNSCREWING THE TANK LID.**

Initially check the filter basket/sock twice weekly until the frequency of cleaning can be determined. Wear rubber gloves and unscrew the lid of the tank. First gently withdraw the filter sock from the inlet and overflow pipes – top first, then bottom. Then grasping the handle of the plastic basket through the filter sock, withdraw both the plastic basket and the filter sock.

Dispose of material contained by the filter sock into a plastic bag, rinse the sock if necessary and reinstall the basket and filter sock as follows:

Place the filter sock inside the plastic basket, align the two holes in the filter sock with the penetration in the side of the basket and stretch the elasticised hem of the sock over the rim of the basket.

Install the basket into the tank and stretch the holes in the sock over the inlet and overflow pipes by first placing the bottom edge of the holes of the sock over the spigots then drawing the top edge onto the spigots.

Ensure the filter sock is pushed firmly onto the spigots.

Used correctly the filter sock will provide many years of service – for your convenience a spare filter sock is included. Replacement socks are available to purchase from your retailer.

- **GREY WATER CAN CONTAIN BACTERIA - WASH HANDS THOROUGHLY AFTER CLEANING THE FILTER OR COMING INTO CONTACT WITH GREY WATER.**
- **WHEN GREYWATER REUSE IS NOT REQUIRED eg. IN WET WEATHER, OPEN THE GATE VALVE BY WITHDRAWING THE TEE HANDLE AWAY FROM THE VALVE BODY TO ALLOW GREY WATER TO DISCHARGE DIRECTLY TO THE SEWER. LEAVE POWER TO UNIT TURNED ON TO PUMP OUT ANY GREY WATER BACKING UP INTO THE UNIT.**
- Periodically flush out the tank and distribution system using clean water. This will reduce the risk of water-borne bacteria developing in the unit.
- Grey Waste Water must be retained within your property if not directed to sewer.
- **Cleaning the probe.** Due to variations in soap and detergent composition it is recommended to clean the probe every six to eight weeks to prevent excess soap scum forming on the probe.
- Excess scum may cause a false reading of the water level in the tank causing the pump to continue to run (– see also **TROUBLE SHOOTING**)

- Turn off the power supply and unplug the power lead. Unscrew the tank lid and wearing rubber gloves, remove the filter sock/basket. Reach inside the tank, grasp the probe and withdraw it from inside the tank. Wipe the probe clean with a cloth or rag and reposition the probe inside the tank.
Make sure the probe is hanging freely down into the tank.
Install the filter sock/basket and screw on the tank lid.

TROUBLE SHOOTING

ANY MATERIALS OR INSTALLATION ON THE DISCHARGE SIDE OF THE UNIT IS THE RESPONSIBILITY OF THE PURCHASER AND INSTALLER.

The Eco-Care system has been developed over several years in accordance with changing government regulations and will provide trouble-free operation provided the system is installed and operated according to the details above. However should problems occur please refer to the following:

Pump not starting	Check the lead is plugged in and the power supply is ON. Check "Power on" light is ON. Check water level is up to top of probe. Check "Pump Run" light is on. Remove and clean the probe – see above. Pump still not starting – phone 1300 65 40 40.
Pump running erratically (Pump starting and stopping erratically)	Remove and clean the probe – see above. (The pump will start and stop without incoming waste water once every 24 hours).
Waste water discharging to sewer and not into the tank	Check the filter sock and basket are clean. Check that the valve is CLOSED.
Pump running but not at the normal rate of discharge.	Check there are no airlocks or restrictions in the lilac hose. Check/clear the air bleed hole in the base of the pump. Test discharge at tank ie without hose or sub-surface connected. If unit operates correctly contact plumber/installer for further investigation of distribution system. Any materials or installation on the discharge side of the unit is the responsibility of the purchaser and installer.
Pump not turning off	Isolate the power supply and clean and reinstall the probe.
Pump still not turning off	Turn power off and phone 1300 65 40 40

- *If you have any questions please speak to your retailer or you can email us at: eco-care@irrigationwarehouse.com.au*



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