



wastewater specialists

H O M E O W N E R ' S M A N U A L

Community Wastewater Collection & Treatment System



Jacks Point Subdivisions

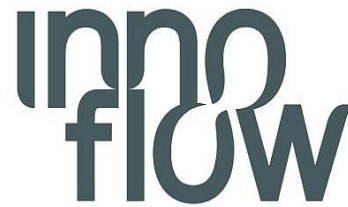
*Important Facts on the Installation and Care
For Homes with Community Wastewater
Collection and Treatment Systems*



wastewater specialists

TABLE OF CONTENTS

ABOUT THE COMMUNITY WASTEWATER SYSTEM	4
WHAT YOU NEED ON YOUR PROPERTY AND WHY	5
Interceptor Tank	5
Watertightness	6
Biotube® Pumping System	6
Tank Siting	6
Service Lateral	6
Service Connection	6
Remote Monitor/Manage Control Panel.....	7
INSTALLATION OF THE ONSITE EQUIPMENT	9
SERVICING OF YOUR ONSITE SYSTEM.....	9
CARE OF YOUR SYSTEM.....	10
FREQUENTLY ASKED QUESTIONS	14
PROSTEP™ INTERCEPTOR TANK INSTALLATION AND CONNECTION DETAIL	15
BLENDING IN A PROSTEP™ INTERCEPTOR TANK	17
4000L PROSTEP™ ON-LOT INTERCEPTOR TANK SPECIFICATION DATA SHEET.....	18
6000L PROSTEP™ ON-LOT INTERCEPTOR TANK SPECIFICATION DATA SHEET.....	19



wastewater specialists

Congratulations!

Protecting the special character and environment at Jacks Point has been of paramount importance in the development of this community. That's why a high performance, state-of-the-art wastewater system has been used to deal with the sewage from the entire community.

Your home includes reliable, carefully engineered equipment supplied by InnoFlow Technologies NZ Ltd for the collection and pretreatment of household wastewater.

When properly designed and installed, an onsite wastewater treatment does a great job of decomposing household waste and recycling precious water resources. Our systems frequently outperform municipal sewage treatment plants. And the treated effluent is often returned harmlessly to the soil, where it receives final polishing and filtration for groundwater recharge. There's no degrading of our nation's rivers and oceans . . . which is so often the case with municipal sewage.

As with any engineered system your onsite wastewater system will work better and last longer if a qualified installer fits your system and a qualified service provider regularly maintains it.

Your service provider should ideally be present during installation, so he or she is familiar with your system, especially the service lines, conduits, and connections that get buried. It is important that the system is installed and operated correctly and this manual outlines correct procedures for your installer or future service provider.

Your system will also work better and last longer if you learn what can go into it — and what cannot. Little effort is required. Just read and practice the “do's and don'ts” that follow. Every member of your household should be familiar with these. And if you have guests who want to “help out in the kitchen,” be sure to tell them, too. With this preventive maintenance, along with periodic inspections, your onsite wastewater system should function for decades. And you'll save water and energy, too!

There's a place on the back of this Homeowner's Manual to record “Important System Facts & Contacts.” If those have not been filled in for you, please record those now, before you file this Manual away. And give a copy of these facts to your service provider, especially if your service provider changes.

ABOUT THE COMMUNITY WASTEWATER SYSTEM

The wastewater scheme at Jacks Point provides the homeowner with a “flush and forget” service and requires no significant homeowner involvement.

The design and layout of the scheme revolves around a *ProSTEP™* effluent sewer reticulated network. This pipe network has been installed throughout the Jacks Point Community to transport effluent from each lot to the community treatment plants (see Fig. 1). This watertight collection system offers many advantages over traditional sewers and is now considered best practice for community systems. The treatment plant is based on the well-proven AdvanTex® treatment technology. This is a reliable and robust treatment process that consistently treats the wastewater to an advanced level. It produces a clear, odourless liquid, useful for drip irrigation applications.

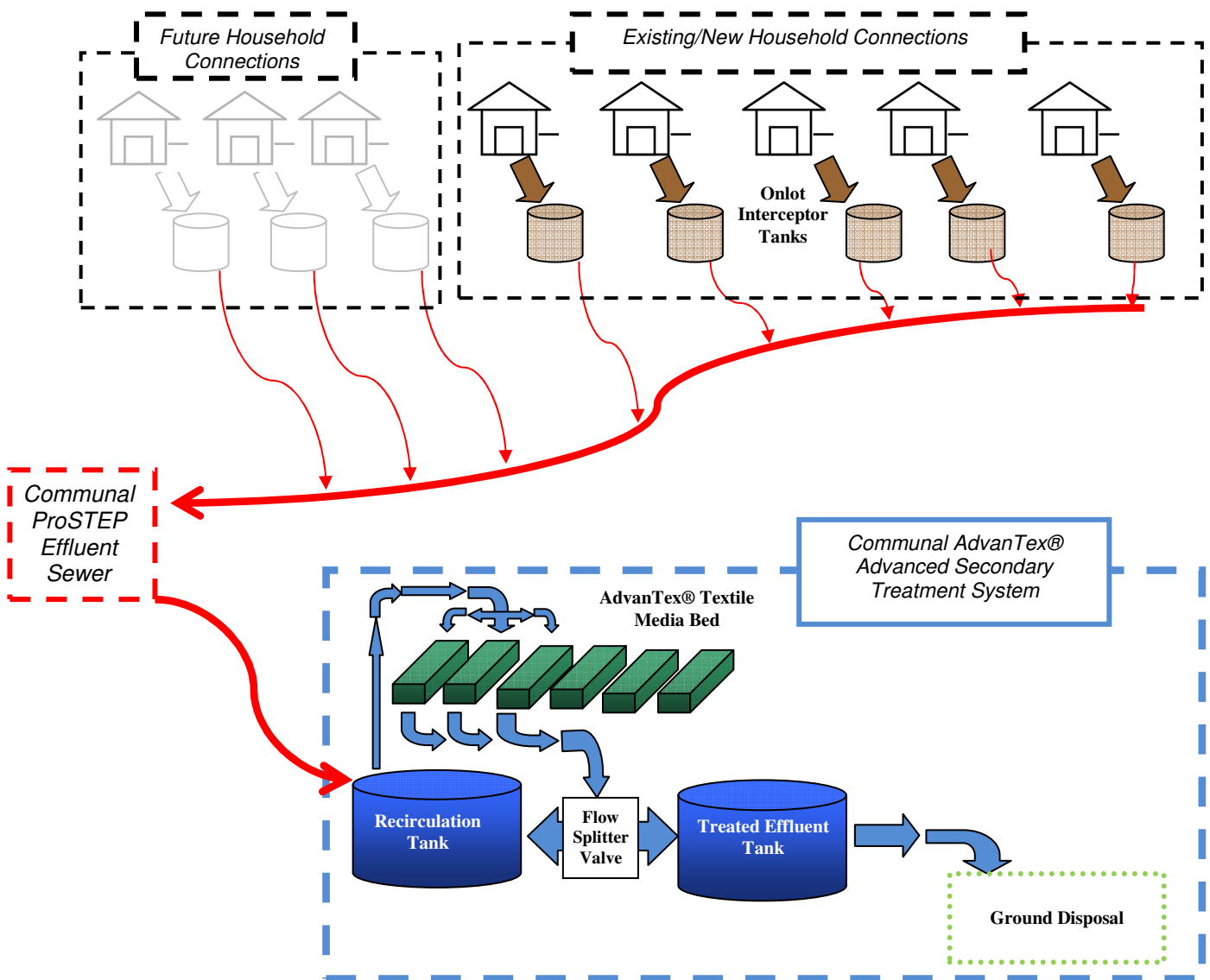


Figure 1 – Schematic of Overall Subdivision Wastewater Treatment Plant

WHAT YOU NEED ON YOUR PROPERTY AND WHY

The effluent sewer is dependant on a number of factors to ensure high performance and low maintenance.

To ensure that the effluent sewer network works properly, a specifically sized and constructed tank must be installed on each individual property to service the wastewater from the dwelling. This tank is called an on-lot interceptor tank and must also contain a specifically designed effluent filter, pump and discharge assembly and a specific control panel monitored by telemetry.

The following pages detail some information that will not only give you a better understanding of the on-lot part of the wastewater management process at Jacks Point, but also provides some information to ensure the successful installation, and optimum operation of your on-lot interceptor tank.

The components that make up the on-lot component of the scheme at Jacks Point are described below and include:

- Conventional **gravity sewer** from the dwelling to the interceptor tank inlet
- Buried fiberglass **interceptor tank** and equipment
- Small diameter **service lateral** from tank to boundary service connection
- A **service connection** which connects the on-lot components to the *ProSTEP™* effluent sewer

The key feature of the on-lot stage of the *ProSTEP™* effluent sewer process is the interceptor tank. Its design has been optimised to ensure effective primary treatment and solids retention with minimal maintenance.

Interceptor Tank

The tank is specifically designed based on the number of bedrooms in the dwelling serviced by the system and on the optimum desludging period. For these reasons the interceptor tanks that must be installed on each property are generally of a larger size than normally manufactured. It is therefore not appropriate to purchase any tank other than the one specified.

The standard interceptor tank for each lot at Jacks Point has a working volume of 4000 litres; this tank is suitable for up to 6 bedrooms. Please note that the most councils around New Zealand consider any of the following must be taken into account as bedrooms for the sizing of the interceptor tank.

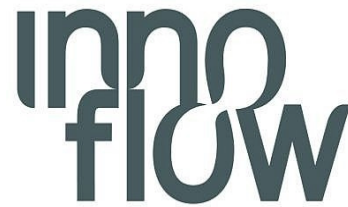
- Rumpus Rooms
- Games Rooms
- Studies
- Libraries
- Granny Flats
- Sleep outs

A larger sized tank of 6,000 litres is available for homes with more than 6 Bedrooms. The increased size of the tank means an increase in the cost to the standard quote.

If you plan to build a house that is larger than 6 bedrooms, including any of the above, please contact InnoFlow Technologies NZ Ltd, as special consideration will have to be made for the design and sizing of your interceptor tank.

The standard 4,000 litre fibreglass interceptor tank is oval. Tank weighs ~400kg. It is 3.07 metres long, 1.83 metres wide and 2.35 metres tall 2.09m high (with 450mm long access risers).

The larger fibreglass interceptor tank is 6,000 litres, oval in shape and weighs ~550kg. It is 4.2 metres long, 1.83 metres wide and 2.35 metres tall (with 450mm long access risers).



wastewater specialists

Watertightness

One of the main reasons why the *ProSTEP™* effluent sewer is a small diameter pipe is because we are able to eliminate stormwater or groundwater infiltration from occurring. The tanks are made under strict quality control and using specifically designed equipment to ensure no water gets into the tank.

By eliminating unwanted water into the system we not only use small diameter pipes but we save on power as less pumping is required, we save on community treatment plant size because we are treating a lower flow, and we save on land area for irrigation.

To ensure that the entire system remains free of unwanted stormwater or groundwater infiltration we recommend the tank is installed to ensure no water can get into the tanks either through the tank lids or air vents and that no stormwater downpipes are connected into the gully traps of the dwelling.

Biotube® Pumping System

The pumping system installed inside each interceptor tank is a fully integrated equipment package designed specifically for primary wastewater treatment.

Tank Siting

While the specific location of the septic tank on your property is flexible, there are a few considerations that should be made when siting your interceptor tank.

- Access for septic tank clean-out truck
- Access for service technicians
- Fall from standard sewer
- Distance to service connection (standard includes up to 25 metres)
- Location of control panel
- Away from vehicular traffic (foot traffic is ok)

The Plumbing and Drainage Act, 1978 requires the interceptor tank to be installed a minimum of 3 metres off a building and 1.5 metres off a property boundary. For further information on setback distances you should contact your local council.

More information on tank siting and installation is provided in the section on "*ProSTEP™ Interceptor Tank Installation and Connection Detail*".

Service Lateral

From the interceptor tank, the screened effluent pumps to the service connection and then *ProSTEP™* Effluent Sewer mainline via a service lateral. This lateral is typically 32mm OD medium density polyethylene and will be supplied in conjunction with the interceptor tank.

Because each on-lot system is pumped at Jacks Point, no minimum slope is required for this line between the tank and service connection. It can be laid in a 400 mm deep trench.

Service Connection

The final piece of equipment relating to the *ProSTEP™* Effluent sewer on each property is the Service Connection, installed in conjunction with the *ProSTEP™* Effluent sewer mainline. You may have seen the green fibreglass lid covering the service connection and located close to the property boundary.

This is an isolation valve system that was installed at the same time as the effluent sewer mainline. It is housed within an access riser, typically 1 metre inside the property boundary. This service connection is used to isolate each tank from the main sewer line during testing, commissioning and routine maintenance.

It is important that the service connection be left in the open position once the ProSTEP™ on-lot interceptor tank has been installed, connected and all electrical testing and commissioning completed. This valve should be closed only by a service technician during routine maintenance or during an emergency.

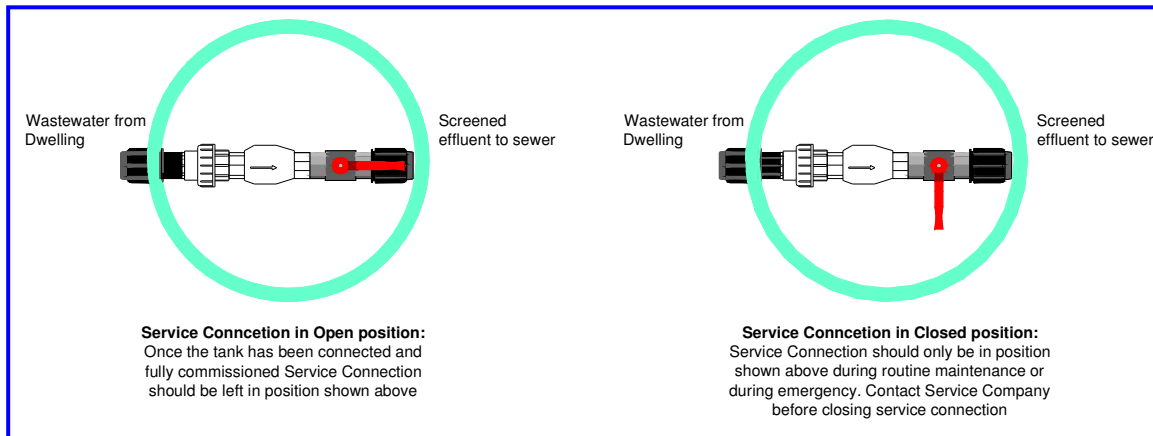


Figure 2. Service Connection Detail



Figure 3. Schematic of A Prostep™ Effluent Sewer Community System

Remote Monitor/Manage Control Panel

The control panel supplied with each interceptor tank at Jacks Point further reinforces the concept of “flush and forget” for the homeowner through the use of the VeriComm™ monitoring system.

VeriComm Control Panels give homeowners the peace of mind that comes from knowing their wastewater system is always being monitored. Through the use of a standard phone line connected to the panel, any problems or unusual conditions are alerted offsite to the Service Company, rather than “locally” at the control panel.

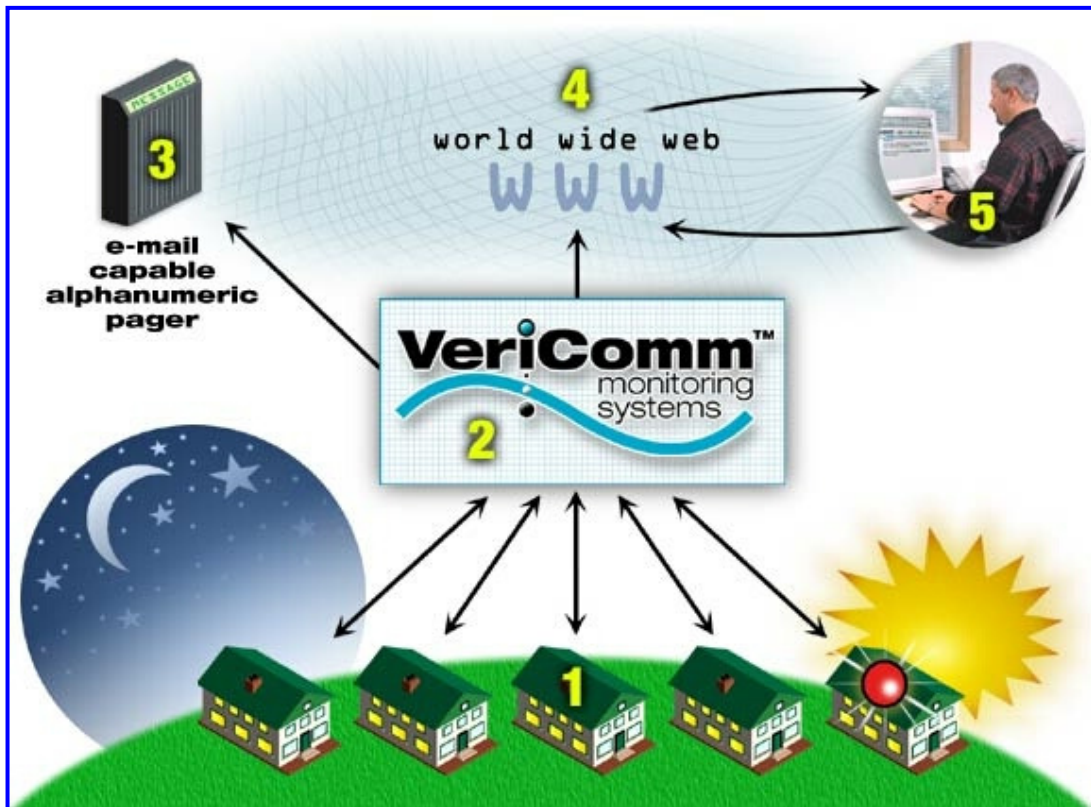


Figure 4. Overview of the VCOM remote alarm notification system

In addition to remote alerts and alarms, each VeriComm™ Panel constantly measures and monitors conditions on each lot in the development to ensure optimal operation of the system at all times. For example, if a float malfunctions, the service company is alerted of the problem but the panel continues to run, based on previous trend data. If water usage increases greatly compared to previous trends, the service company is notified of this anomaly.

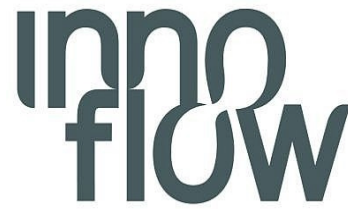
How it Works

Your control panel will “call in” once a month at a convenient time, unless there’s a problem with your system. If there’s a problem, it will call in immediately and report the problem, so your Service Provider can take care of it. (Yes, this is one very smart control panel.)

The routine, monthly phone calls take less than one minute and are made in the middle of the night, when it’s not likely you’ll need to use your phone. Alarm calls also take less than one minute, but they can occur at any time. If you’re using your phone when the panel tries to call in, you’ll hear a “click” sound. The panel will keep trying until it makes a connection.

All these phone calls are made to a toll-free number, so they will not appear on your phone bill. An active telephone line must be maintained on the property at all times.

Because your control panel uses your phone line, **DO NOT DISCONNECT THE PHONE LINES THAT GO TO YOUR CONTROL PANEL AND DO NOT DISCONNECT YOUR PHONE SERVICE.** Also, notify your service provider if you modify your current phone service (add voice messaging, for example), as this may adversely affect your control panel’s operation.



wastewater specialists

Audible Alarm

If your phone lines go down in an emergency (severe weather, other unexpected circumstances) and your panel needs to make an alarm call, it will keep trying until, at some point, it will sound a “local alarm.” That means, the light on the front of the panel will start flashing and you’ll hear an audible alarm sound. IF YOU HEAR AN AUDIBLE ALARM, CALL YOUR SERVICE PROVIDER IMMEDIATELY. Then stop the alarm sound by pressing the light button on the front of the panel.

Panel Installation

The electrical installation requirements for the control panel are outlined in the document “VeriComm Control Panel VCOM-S2 RO (NZ) Manual # EIN-CP-S-657” enclosed separately. All connections to the panel are the responsibility of the homeowner, however Innoflow Technologies can offer advice if required.

This document should be passed onto the electrician who is wiring up the on-lot interceptor tank; it outlines all requirements for the electrical and telephone hook-up for the system. Watertight electrical connections are very important and improper wiring can lead to poor system performance.

PLEASE ENSURE YOUR SERVICE PROVIDER IS INFORMED THAT THE CONTROL PANEL HAS BEEN INSTALLED BEFORE YOUR PHONE LINE IS CONNECTED TO THE CONTROL PANEL.

INSTALLATION OF THE ONSITE EQUIPMENT

An approved installer will be required to install the ProSTEP™ interceptor tank and equipment and connect it to your house and the sewer line. An electrician is needed to wire up the pumps, float switches and control panel.

Check with Innoflow Technologies NZ Ltd regarding your nearest authorised installer. The installer will arrange delivery and installation of your tank and also the boundary connection of the tank.

The electrical installation requirements for the control panel are outlined in the control panel wiring manual enclosed with the system control panel upon supply. This document should be passed onto the electrician who is wiring up the on-lot interceptor tank; it outlines all requirements for the electrical works required. Watertight electrical connections are very important and improper wiring can lead to poor system performance.

SERVICING OF YOUR ONSITE SYSTEM

The ProSTEP™ equipment is designed to have minimal servicing requirements, and the maintenance procedures and periodic inspections are designed to ensure the long life and correct operation of the system. Typically this requires an annual service call.

Only an authorised service provider should service your on-site equipment. Contact Innoflow Technologies NZ Ltd for the approved service provider information.

CARE OF YOUR SYSTEM

Your system will work better and provide trouble-free performance if you learn what can go in to it and what cannot. Just read and practice the “do’s and don’ts” that follow. Every member of the household should be familiar with these.

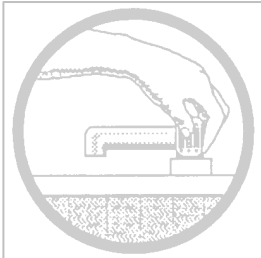
Do These:



Do feel free to place a bird bath, potted plant or other yard decoration on the tank riser lid, as long as it can be readily removed for maintenance. Landscaping or permanent structures should be planned prior to installation in order to ensure that the integrity of the system is not jeopardised.



Do keep accurate records of maintenance and service calls. The results will be valuable if system problems occur. Make sure whoever services the system keeps a complete record with his manual.

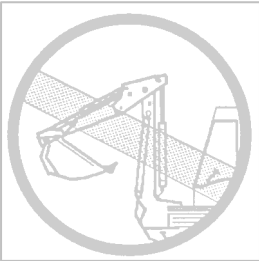


Do practice water conservation. By reducing the amount of water use, the life of the system may be increased and power consumption reduced. When possible, avoid doing several loads of laundry in one day. Take short showers and don't let water run unnecessarily while washing hands, food, teeth, dishes etc.

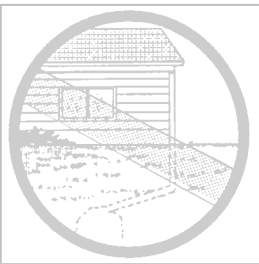


Do be aware that a simple toilet float can hang up and result in over 8000 litres per day of wasted water. Use water-saving devices in the toilet tank and don't flush unnecessarily.

Avoid These



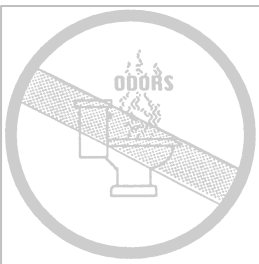
Don't accidentally dig up an underground utility line. Before digging, telephone the local One Call number to have underground utilities marked.



Don't connect rain gutters or storm drains to the septic tank or allow surface water to drain into it.



Don't use excessive quantities of water. Repair leaky toilets, taps or plumbing fixtures. Take shorter showers and use water saving devices such as low-flow fixtures and low-flush toilets.



Don't flush undesirable substances into the septic tank. Flushing flammable and toxic products is dangerous. Other materials such as paper towel, newspaper, cigarettes, coffee grounds, egg shells, sanitary napkins, large amounts of hair and cooking grease are a maintenance nuisance. These materials will also increase the frequency of septage pumping and may damage the sand contactor.

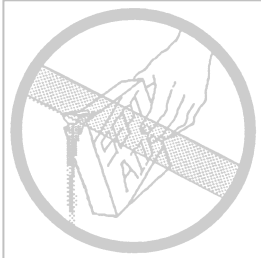


Don't dump recreation vehicle (RV) waste into the septic tank because it will increase the frequency of septage pumping and possibly damage the sand contactor. RV wastewater dumped directly into the screened vault will clog the pump and plug the screen. Some RV waste contains chemicals that are toxic to the biological activity in the septic tank.

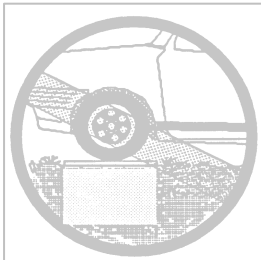


Garbage disposal systems are not recommended because they increase the frequency of septage pumping and generate higher wastewater flows. Compost food scraps or dispose of them in the rubbish. Collect grease in a container rather than disposing down the drain. Some items (egg shells, coffee grounds, tea bags, etc) are not biodegradable and should be disposed of in the rubbish.

Avoid these (continued)



Don't use septic tank additives. Additives do not improve the performance of the interceptor tank and can cause major damage to the treatment plant packed bed reactor or land application system. The natural micro-organisms that grow in the system are sufficient. These organisms generate their own enzymes for breaking down and digesting nutrients.



Don't drive over the septic system. If the septic tank is in an area subject to possible traffic, consider putting up an attractive barricade or row of shrubs to discourage traffic unless the tank has been equipped with a special traffic lid.



Don't enter the interceptor tank. Any work to the tank should be done from the outside. Gases that can be generated in the tank or the lack of oxygen can be fatal.



Don't dispose water softener backwash into the septic tank. The backwash brine contains high levels of chlorides that can destroy the micro-organisms and inhibit the biological digestion that occurs in the tank. The brine solution also interferes with the solid's sedimentation that occurs in the tank, and may increase the flow through the tank from 25 to 50 percent.



wastewater specialists

IMPORTANT ONSITE SYSTEM FACTS AND CONTACTS

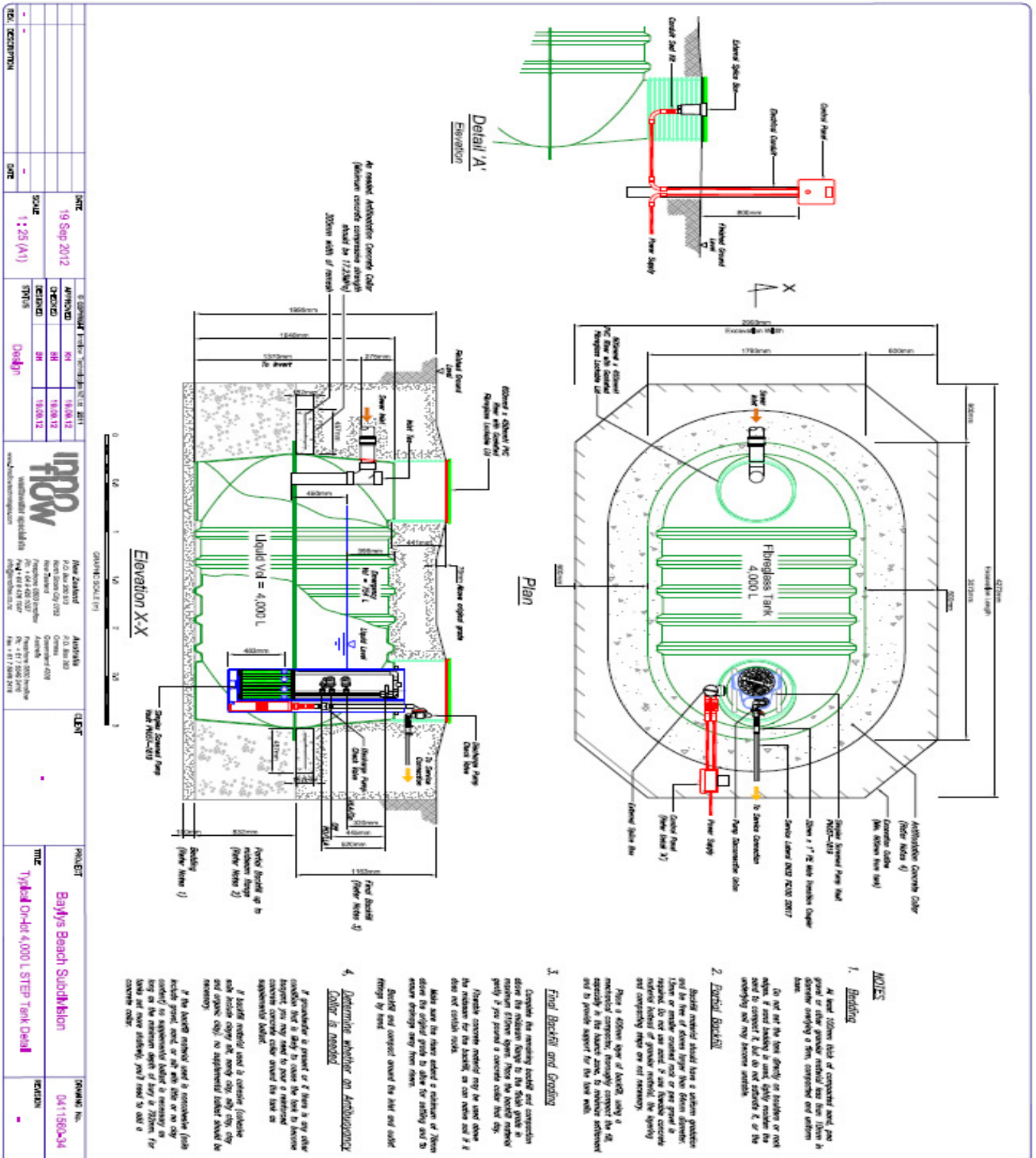
SUPPLIER DETAILS	
Name	Innoflow Technologies NZ Ltd
Address	P O Box 300-572, Albany, Auckland 0794
Phone	(09) 426-1027, Fax (09) 426-1047
AUTHORISED SERVICE PROVIDER DETAILS	
Name	S3 Limited
Address	PO Box 300415, Albany, Auckland 0752
Phone	(09) 426 0281
AUTHORISED INSTALLER DETAILS	
Name	PLEASE CONTACT INNOFLOW TECHNOLOGIES NZ LTD
Phone	
ELECTRICIAN DETAILS	
Name	
Phone	
COUNCIL DETAILS	
Contact Name	
Phone	
PROPERTY DETAILS	
Lot Number	
Address	
Owner Name(s)	
SYSTEM DETAILS	
Start-up Date	
Control Panel Model	VCOM - S2(nz)RO
Tank Capacity	4000L/6000L Fiberglass Tank

FREQUENTLY ASKED QUESTIONS

- Q. Can I just get *any* tank?
A. NO. Only Interceptor Tanks Supplied by InnoFlow Technologies NZ Ltd are permitted. Should any other tank be installed it may breach resource consent conditions & may damage the Prostep sewer & communal wastewater treatment system.
- Q. Will the interceptor tank smell or make a noise?
A. NO. When the tank is correctly installed and operating there are no offensive smells & no noise generated from the pump in the system. Note control panel placement (see below)
- Q. What are the running costs for the interceptor tank?
A. For the average home, the electrical costs are less than \$10 per month.
- Q. Are there certain things to avoid putting down the sink or toilet?
A. YES. Read the section on Do's and Don'ts inside the house for a list of cleaning products to avoid and some substitutes.
- Q. Can I put anything in the tank directly?
A. NO. Never put anything in the tank.
- Q. How often should the tank be pumped out and who is responsible for this?
A. The interceptor tank and filter equipment are engineered to require pump out only every 8-10 years for normal use. Your service provider will monitor this and let you know when this is required.
- Q. Who does the servicing of the interceptor tanks and how often?
A. Preventative maintenance and inspection should be undertaken by the authorised service provider on an annual basis.
- Q. What do I do if an alarm goes off?
A. If your phone lines go down in an emergency (severe weather, other unexpected circumstances) and your panel needs to make an alarm call, it will keep trying until, at some point, it will sound a "local alarm." That means, the light on the front of the panel will start flashing and you'll hear an audible alarm sound. IF YOU HEAR AN AUDIBLE ALARM, CALL YOUR SERVICE PROVIDER IMMEDIATELY. Then stop the alarm sound by pressing the light button on the front of the panel.
- Q. Is there a problem if there is a power cut?
A. The tank has over 24 hours emergency storage and so a power outage should have no effect unless it lasts for several days!
- Q. Who should I call if I think there is something wrong with the interceptor tank?
A. Call your authorised service provider. Their details should be filled in on the "Important System Details and Contacts" form, included in this manual.
- Q. Can you install the control panel anywhere?
A. The control panel should not be installed where noise can cause nuisance. There are motor contactors within the panel which give a 'clunk' noise when it engages & disengages. Normally a control panel is mounted on a post by the tank (see section '*Prostep Interceptor Tank Installation And Connection Detail*'). Should the control panel be mounted on a wall it should not be installed on a bedroom wall or living area wall.

PROSTEP™ INTERCEPTOR TANK INSTALLATION AND CONNECTION DETAIL

The following drawings give info as to the installation & also the general site layout requirements for Jacks Point Interceptor Tank installation. NOTE: 4000L fibreglass Tank Shown/Installation shall be completed by an approved Innoflow Technologies NZ Ltd installer only.



BLENDING IN A PROSTEP™ INTERCEPTOR TANK

It's expected that most Interceptor tanks will be installed while the house is being built. Many questions are asked as to how the interceptor tank can be landscaped around, or hid onsite to ensure the tank is aesthetically pleasing. In general the only requirements of the tank are:

- that there is easy access to the tank & control panel for servicing/system pump outs
- Ensure that the lids are just proud of ground level so nothing can fall into the tank when the lids are opened
- The tank is not installed in an area where vehicles will be driven
- The Control panel should not be located very near to/on a wall by living areas or bedrooms as it may cause nuisance with the associated motor contactor noise
- The tank should not be subjected to any further weight loading other than what would be expected with a 900mm cover of soil (the tank is rated for a soil cover of 900mm – no additional forces should be subjected to the tank – such include retaining walls/heavy machinery movements etc within the vicinity of the tank)

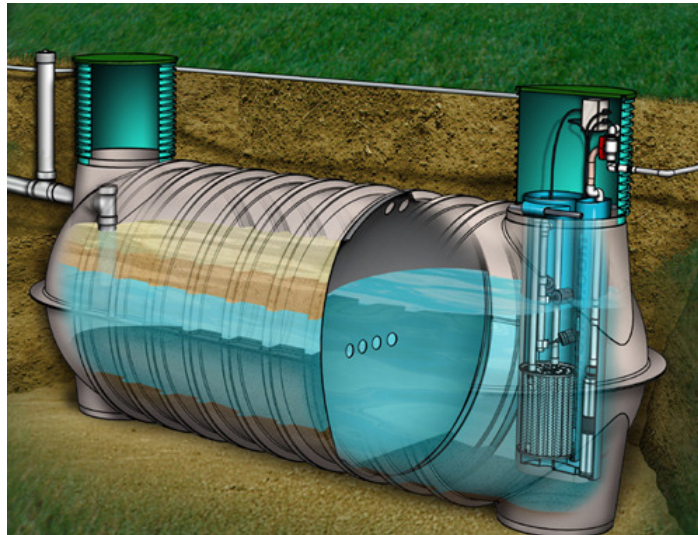


Figure 5. Blending the ProSTEP™ interceptor tank into the surroundings



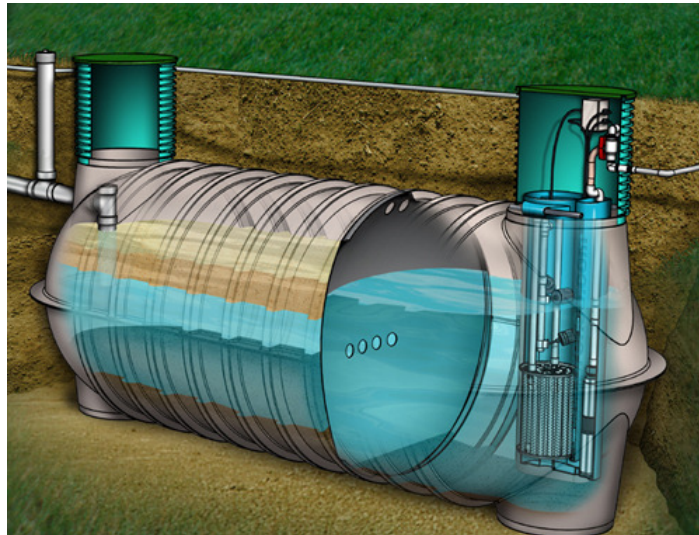
Figure 6. A ProSTEP™ installation; note control panel on house wall – Refer to Section '*Frequently Asked Questions*' for more detail

4000L PROSTEP™ ON-LOT INTERCEPTOR TANK SPECIFICATION DATA SHEET



Wastewater Source	Up to 6 bedroom dwelling
Nature of Wastewater	100% domestic. Black and grey water combined
Maximum Daily Flow	1,200 litres
Tank Manufacturer	Orenco Systems Inc
Tank Volume	4,000 litres operating volume
Detention Time @ Design Flow	~3 days
No of Compartments	1
Construction	Fiber Reinforced Fibreglass
External Dimensions	3.07m long x 1.83m wide x 2.35m high (assuming 450mm long risers)
Sewer invert height	735mm from top of riser (assuming a 450mm long riser)
Screened Pump Vault Type	1 x Orenco PVU57-24 (300 mm dia x 1450 mm high)
Materials of Construction	Polyethylene Vault with Polypropylene Screen
Biotube Cartridge Height	610 mm
Screen Area	1.89 m ² each
Pump Model	PF100552 High Head Turbine, 0.375 kW, 230V, Single phase
Pump Performance	Max Flow 2.9 m ³ /hr Max Head 60 m
Pump Discharge Size	25 mm BSP
Control Panel Type	VCOM – S2(NZ)RO
Access Manhole Type	610 mm Dia PVC Riser with Locking Fibreglass Lid with Rubber Grommet penetrations 450 mm Dia PVC Riser with Locking Fibreglass Lid
Service Lateral Type	RL32 32mm (OD) Medium Density Polyethylene
Service Connection Type	ITLSC100 25mm Service Connection

6000L PROSTEP™ ON-LOT INTERCEPTOR TANK SPECIFICATION DATA SHEET



Wastewater Source	Up to 8 bedroom dwelling
Nature of Wastewater	100% domestic. Black and grey water combined
Maximum Daily Flow	2,000 litres
Tank Manufacturer	Orenco Systems Inc
Tank Volume	6,000 litres operating volume
Detention Time @ Design Flow	~3 days
No of Compartments	1
Construction	Fiber Reinforced Fibreglass
External Dimensions	4.2m long x 1.83m wide x 2.3m high (assuming 450mm long risers)
Sewer invert height	735mm from top of riser (assuming a 450mm long riser)
Screened Pump Vault Type	1 x Orenco PVU57-24 (300 mm dia x 1450 mm high)
Materials of Construction	Polyethylene Vault with Polypropylene Screen
Biotube Cartridge Height	610 mm
Screen Area	1.89 m ² each
Pump Model	PF100552 High Head Turbine, 0.375 kW, 230V, Single phase
Pump Performance	Max Flow 2.9 m ³ /hr Max Head 60 m
Pump Discharge Size	25 mm BSP
Control Panel Type	VCOM – S2(NZ)RO
Access Manhole Type	610 mm Dia PVC Riser with Locking Fibreglass Lid with Rubber Grommet penetrations 450 mm Dia PVC Riser with Locking Fibreglass Lid
Service Lateral Type	RL32 32mm (OD) Medium Density Polyethylene
Service Connection Type	ITLSC100 25mm Service Connection