

Introduction

The Landing @ Marsden subdivision is part of a Pressurised Sewer catchment, this means there is a requirement for you to have sewer grinder pump. The grinder pump grinds and pumps all waste off site and into the Council pressurised sewer pipe network. The grinder pumps are specialised and capable of pumping many kilometres.

The Pump Unit

The pressurised sewer network has been designed to work with an E/One sewer pump unit supplied by Ecoflow Ltd. The E/One system is manufactured in USA, there are over 550,000 in operation throughout 35 different countries. This unit is approved by the Whangarei District Council and is the same make and model used in other areas of the district, such as the Ruakaka township. The E/One system consists of a robust polyethylene underground tank, a heavy duty E/One submersible grinder pump and a pump controller.

Where to get the Pump Unit



16b Piermark Drive
North Harbour, Auckland
Ph: +64 9 447 1793
Email: info@ecoflow.co.nz
Web: www.ecoflow.co.nz

How to Install the Unit

Your drainlayer will install the system when he completes the drainage works, typically this is done after the slab has been poured. The chamber can be installed using a small excavator which is typical for a drainlayer to have on site. Concrete ballast is used to hold the chamber in place.

The attached data provides the power specification for your electrician. A power connection will need to be made back to your homes fuse box. Also there is an alarm to be installed at a location that suits you and your electrician.

On your street frontage you will find an underground box with a RED lid. This is the connection point for the pump. Inside the box you will see a pipe and a valve. From this box there is a short length of pipe entering into your site. Your drainlayer simply needs to connect to this pipe.

The pressure sewer pipe in the street is black with a cream stripe. Please do not confuse it with the blue watermain.

Once installed and commissioned, the E/One system will be maintained by the Whangarei District Council. Please see attached homeowners manual for details in the event of an alarm.

For further information please don't hesitate to contact us.

ecoflow



Pressurised Wastewater System



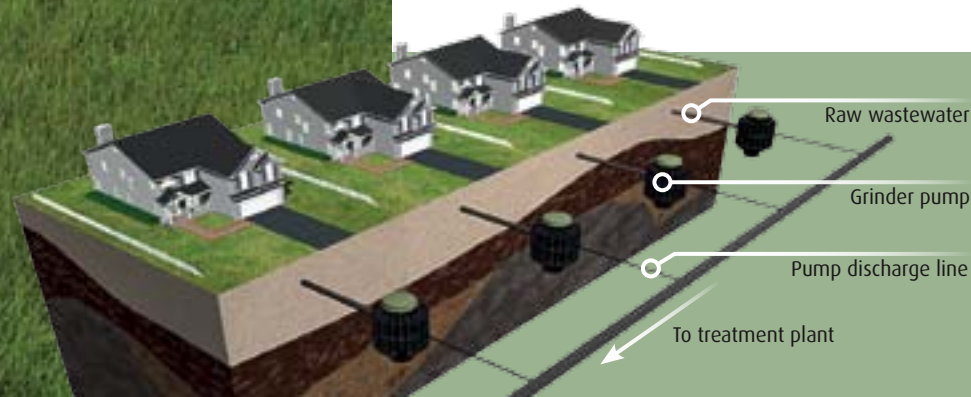
The World's Best Pressurised Wastewater System

The Standard in Reliability and Convenience

For over 40 years, E/One has led the industry with its revolutionary submersible, semi-positive displacement grinder pump system. E/One were involved in the first pressurised wastewater systems in the world and continues to be the world leader with over **500,000** grinder pumps operating globally in **38** countries. The successful history and track record of this system means councils, engineers, developers and homeowners can have full confidence that E/One is an effective public wastewater system for areas with difficult ground conditions as well as an alternative to traditional gravity or septic tank systems.

The E/One system is engineered to do the job perfectly. It consists of a robust polyethylene tank and a heavy duty E/One submersible grinder pump. All household wastewater is diverted to the underground tank, the pump starts automatically, grinds all solids to a small particle size and uses the helical rotor style mechanism to pump the wastewater from residences into council pipelines.

Ecoflow Limited is the New Zealand distributor of the E/One solution and was formed in 2007 by wastewater engineers specialising in pressurised wastewater systems. We are a locally owned and operated company and are proud to represent E/One equipment in New Zealand. With over **7000** grinder pump installations throughout the country, **Ecoflow** not only provides market leading equipment, we also have the best track record. We offer network design advice and ongoing support with our 24/7 service phone line.



Quality

The E/One name is synonymous with reliable, maintenance free grinder pump systems of the highest quality, designed with longevity in mind. Before a product is released it is subjected to meticulous performance tests. The robust underground tank is manufactured in New Zealand and is designed and tested to AS/NZS1546 specifications. It features an integrated stainless steel ball valve with pressure relief. The heavy duty cast iron grinder pump designed to ANSI/NFS 46 specifications is an industrial grade pump for residential use.

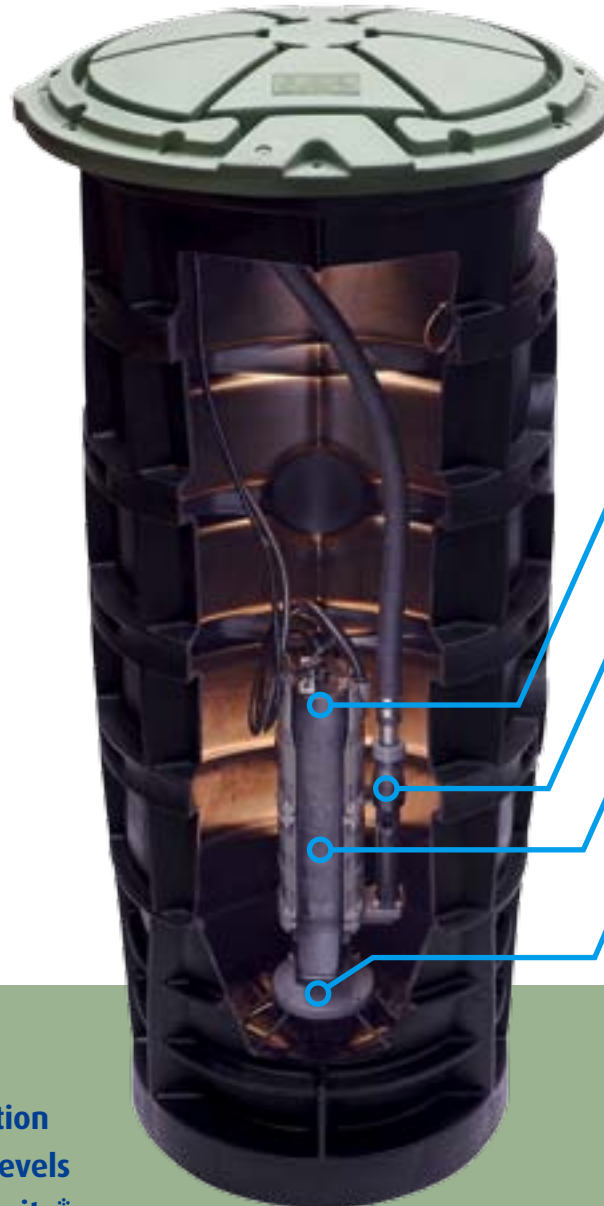
System Advice & Installation

Ecoflow will provide design advice and installation is carried out by local drain layers/contractors who have been approved and trained by **Ecoflow**.

Backup & Support

Ecoflow has service facilities based in Auckland and Christchurch. These fully equipped service centres provide support 24 hours a day, 7 days a week. In the unlikely event of an alarm activation there is sufficient storage in the tank for 24 hours of normal operation. **Ecoflow** or your council's utility services team will provide onsite service in the event of an alarm. The standard warranty period is two years, while extended warranties and different levels of service contract are available.

e one
SEWER SYSTEMS



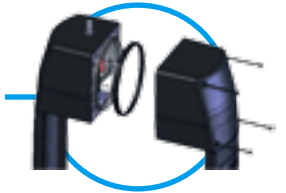
E/One Alarm Panel

To maximise reliability and convenience, the E/One installation includes an IP65 weather proof alarm panel which also protects the pump from low voltage, running dry, and over pressure situations. In the event of an activation an alarm sounds and the light on top illuminates. Silence the alarm with the press of a button, then call your council's service number or **Ecoflow's** 24 hour service line.



Pressure Switch Housing

Pressure switches in the head of the pump for starting and stopping are similar to washing machine controls, eliminating the need for float switches which commonly fail due to fats, hair and rags.



Integrated Valves

The integral non-return valve protects against system back pressure and the anti-siphon valve facilitates downhill pumping applications.



Progressing Cavity Pump

This deceptively simple design produces a nearly constant flow under a wide range of continuously varying conditions.



Grinder Wheel and Shredder Ring

Hardened forged alloy steel cutter bars and teeth create a shearing action coupled with the high torque pump to eliminate blockages.



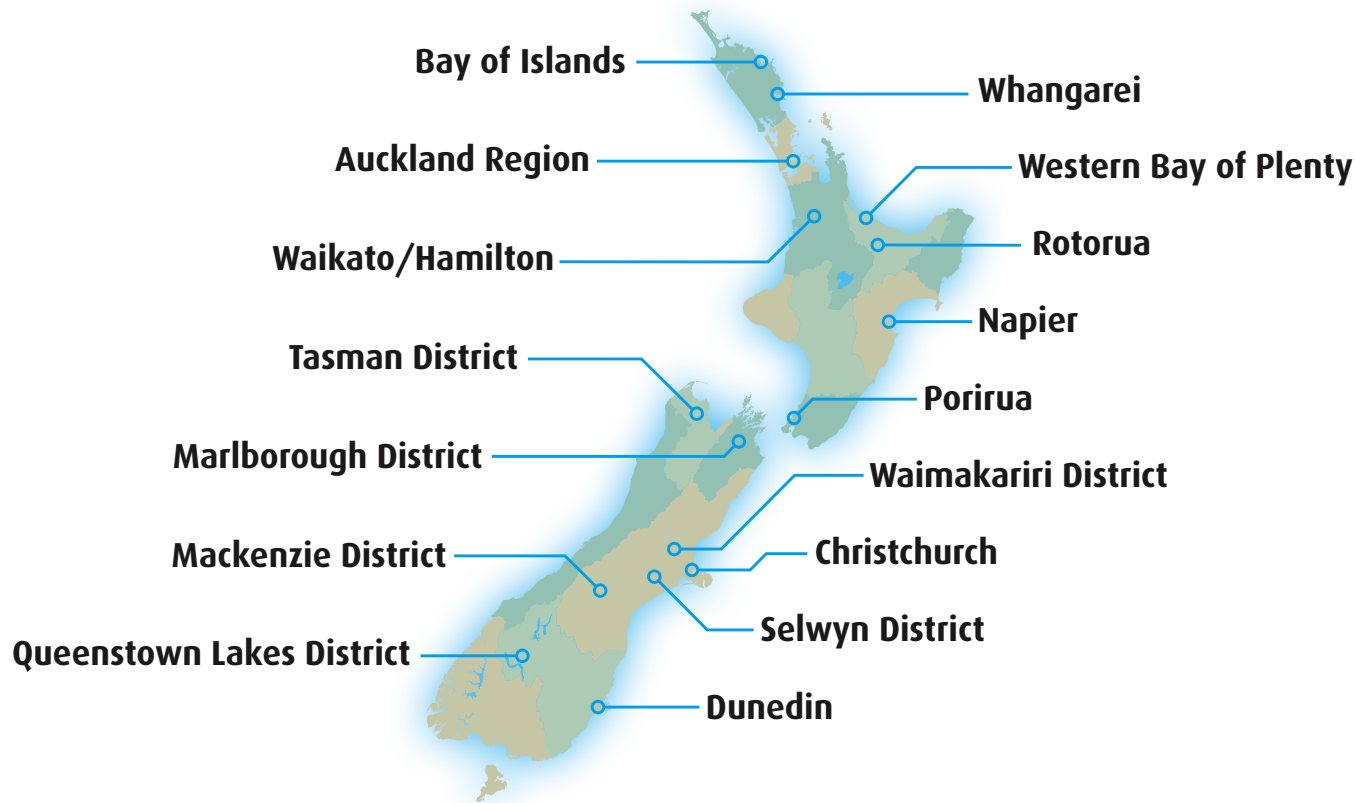
- **Environmentally friendly**
- **No preventative maintenance**
- **Unobtrusive, low profile installation**
- **Extremely low noise and odour levels**
- **24 Hour emergency storage capacity***
- **Low power consumption \$20 to \$30 per annum***

*Depending on water consumption

ecoflow

www.ecoflow.co.nz

Over 7000 Installations Nationwide



ecoflow

WEBSITE www.ecoflow.co.nz

EMAIL info@ecoflow.co.nz

AUCKLAND (Head Office)

16 Piermark Drive, Albany
PO Box 300 249, Albany, Auckland 0752
TELEPHONE 09 447 1793

CHRISTCHURCH

15 Anchorage Road
South Hornby, Christchurch 8042
TELEPHONE 03 349 2506

Drainage Connection Instructions

Please avoid construction debris from entering the tank when carrying out this work.

Step 1: Choose an inlet location

Remove the lid from the tank. Cut the cable tie that attaches the lid to the inside of the tank. Choose an appropriate entry point for the 100mm PVC pipe. This must be above the tapered section of the tank (above the red line shown in the picture to the right). The inlet hole can be drilled in either the circular areas or in the recessed sections.



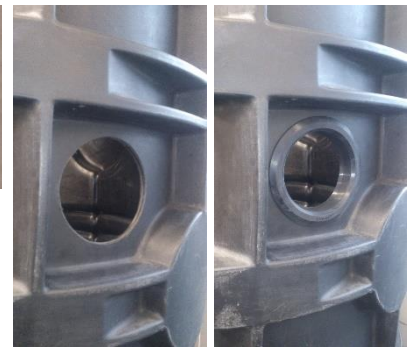
Step 2: Cut the inlet penetration

Check that the tank isn't filled with water and then using a 127mm (5") hole saw, cut a hole in the chosen location.



Step 3: Fit supplied rubber inlet grommet

Remove any burrs or shavings from the hole with a file or similar tool. Place the supplied rubber inlet grommet into the hole with the large flange to the outside of the tank. Rubber inlet grommet is cabled tied to the valve inside every tank.



Additional specially designed E-One rubber inlet grommets can be supplied by Ecoflow if more than one inlet is required. Please do not use other inlet grommets as they are thinner than the E-One grommet.

Step 4: Prepare the PVC inlet pipe

Chamfer the 100mm PVC inlet pipe with a file or similar tool. This will make it easier to push through the rubber inlet grommet into the tank.

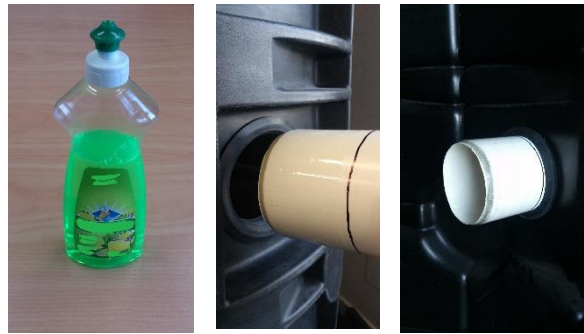


Draw a witness line on the pipe 80-100mm from the chamfered end. This line is where you will stop once it is visible inside the tank. Do not have more than 100mm and no less than 80mm inside the tank.

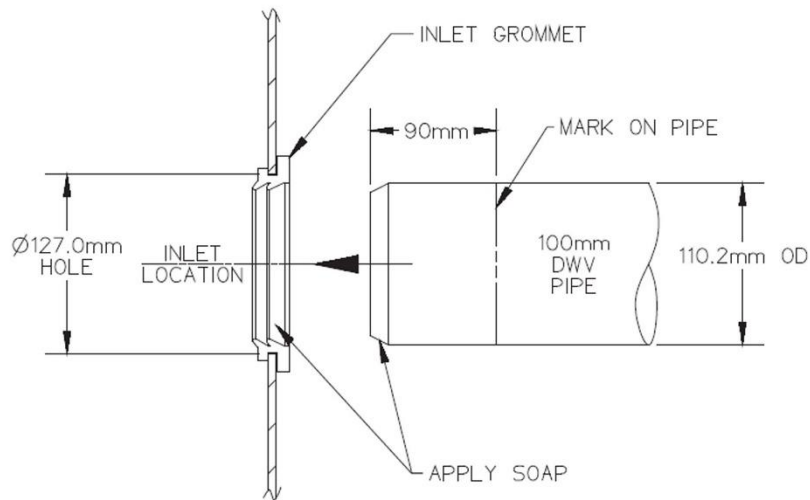
Step 5: Fit the PVC inlet pipe

Apply a film of liquid soap or pipe lubricant up to the witness line on the pipe from the chafered end.

Push the pipe into the tank through the rubber inlet grommet. The flexible watertight seal is made once the PVC pipe has been pushed through. Pushing the pipe through will require some strength as it can be difficult.



Ensure the pipe has the required fall and check to make sure the rubber inlet grommet is seated correctly with the large flange hard up against the outside of the tank and is not pinched or rolled.



Inlet Installation Diagram

Silicone's & Epoxy

Silicone's and epoxy mortar's are not required at any stage so please do not use them. The supplied rubber inlet grommet has been specially designed by E-One for the tank wall thickness, please do not use any other types as they won't seal correctly. The supplied rubber grommet creates a flexible watertight seal and allows for ground movement.



Electrical Pump Supply Cable Instructions

Step 1: Install electrical spigot

An electrical conduit starter spigot is supplied inside every tank. This will be cable tied to the valve. Screw this grey plastic spigot into the electrical bulkhead on the outside of the tank (remove the black hex plug if fitted).

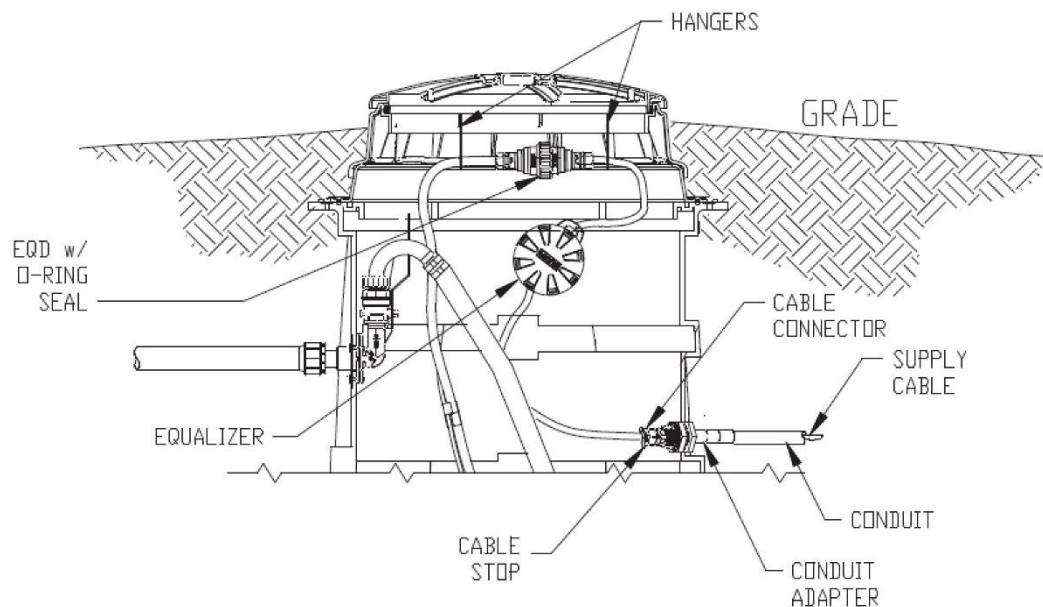


Step 2: Install the E-One pump supply cable

Open the lid of the tank and locate the supply cable connector on the inside of the tank. Loosen the nut on the cable connector and feed the free end (end without the E/One 6-pin connector) through from the inside of the tank. Pull the supply cable out through the connector until it hits the metal crimped "stop" feature on the cable. Do not leave excess cable in the tank. The free end of the supply cable is to be cut to length (if needed) and connected to the Alarm Panel. Run the cable underground in a conduit to the location of the Alarm Panel. Retighten the supply cable connector nut inside the tank.

Note:

- **Longer pump supply cables in lengths of 22m or 30m – can be supplied by Ecoflow for an additional cost.**



Alarm Panel Installation Instructions

Alarm Panel Power Requirements

- The E/One Alarm panel needs to be supplied by an **independent circuit** from the house switch board.
- A **20amp 'D' Curve** circuit breaker or a **30amp 'C' Curve** circuit breaker is required as a minimum.
- **No isolation device** to be installed (the Alarm Panel has 2 circuit breakers installed to enable isolation).
- **No RCD device** to be installed.
- **240V +/- 10% to Alarm Panel (216V to 264V)**

Step 1: Choose an appropriate mounting location

The Alarm Panel must be mounted in an outside location and not inside the house.

This will typically be on the outside of the house near other utilities, but can also be mounted on a post near the tank.

The Alarm Panel must be mounted at an appropriate height to enable the home owner easy access in the event of an alarm.

- **Minimum of 600mm** to the base of the Alarm Panel from ground level.
- **Maximum of 2000mm** to the top of the Alarm Panel.

Please do not drill any extra penetrations into the alarm panel.

- The Alarm Panel has a flange top and bottom to enable fixing to a wall or fence post.
- The Alarm Panel has two holes provided at the base of the panel for the power fed from the house and the pump power supply cable.
- Any extra holes made into the Alarm Panel may cause moisture to enter enclosure and may void warranty.
- Please use sealing conduit connecting glands for the cable penetrations at the base of the Alarm Panel.

Step 2: Connect wires to Alarm Panel

Cut power supply cables to required length. Connect the power fed from the house circuit board and the E/One pump supply cable from the tank to the alarm panel as per the wiring diagram on the following page. This diagram is also located on one of the plastic pages on the inside of each Alarm Panel door.

Typical Alarm Panel Installation



Final Inspection of the E/One Station

Ecoflow will need to visit each E/One station to carry out a final inspection and commission.

The builder or home owner will need to contact Ecoflow to arrange this inspection.

Prior to inspection:

Please ensure that the following have been completed:

- The PVC drainage lateral pipe has been installed correctly
- Alarm Panel has been installed correctly
- Power is supplied to the Alarm Panel
- The tank is half full of clean water
- The tank is not full of construction debris

This allows the commissioning technician to run the pump and carry out a system test.



Upon completion of the final inspection:

Once the technician is satisfied that the E/One system has been installed as per specification, a sticker will be placed on the Alarm Panel door showing Ecoflow's 24/7 free-phone number which is to be called in the event of an alarm.

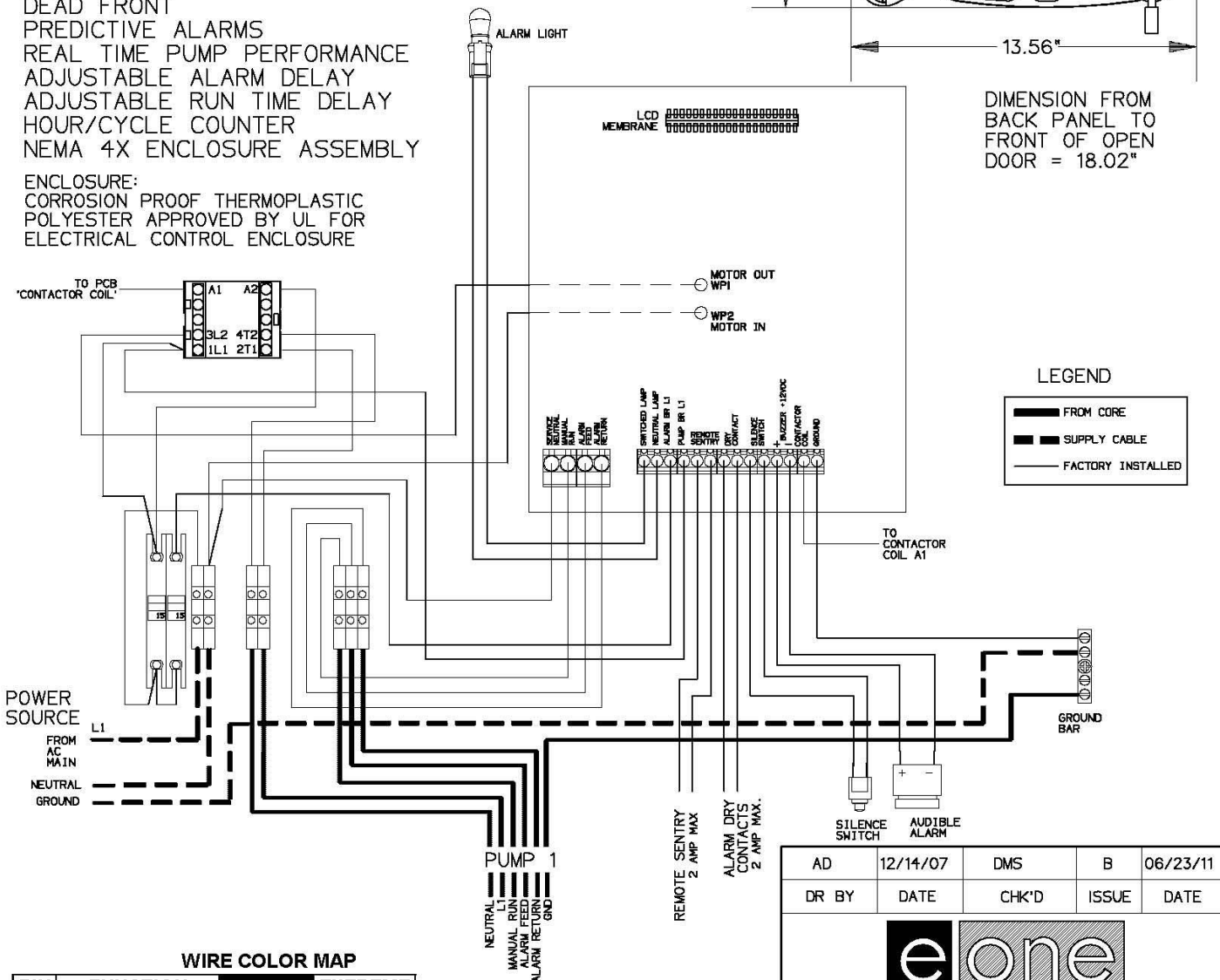
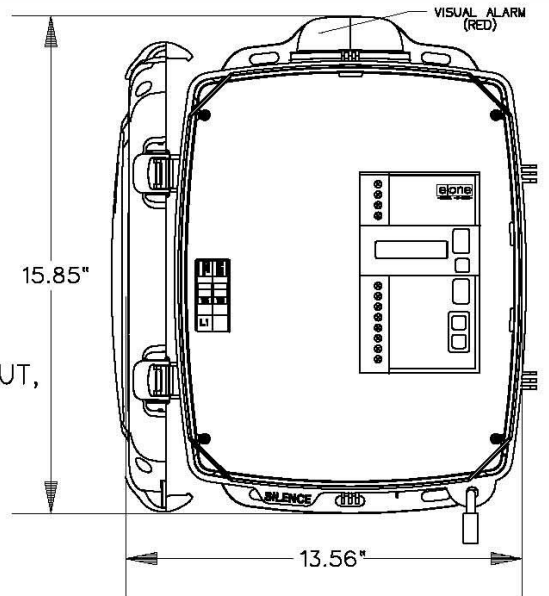
Ecoflow will issue a 'Producer Statement 3'(PS3).

**For any further technical advice please call
Ecoflow Auckland Office 09 447 1793**

**In the event of an alarm, please phone
Ecoflow (24/7): 0508 528 372**

SENTRY PROTECT PLUS SIMPLEX

- REDUNDANT RUN (HIGH LEVEL)
- EXTERNAL VISUAL & AUDIBLE ALARM
- REMOTE SENTRY DRY CONTACTS FOR OPTIONAL POWER LOSS HIGH LEVEL ALARM (POWER LOSS ALARM FOR WIRELESS)
- MANUAL ALARM SILENCE
- MANUAL RUN
- STATUS LED'S: NORMAL, PUMP RUNNING, HIGH LEVEL
- TROUBLE INDICATIONS: RUN DRY, OVERPRESSURE, BROWNOUT, VOLTAGE, EXTENDED RUN TIME
- DRY CONTACTS
- CONFORMAL COATED CIRCUIT BOARD (BOTH SIDES)
- PADLOCK
- DEAD FRONT
- PREDICTIVE ALARMS
- REAL TIME PUMP PERFORMANCE
- ADJUSTABLE ALARM DELAY
- ADJUSTABLE RUN TIME DELAY
- HOUR/CYCLE COUNTER
- NEMA 4X ENCLOSURE ASSEMBLY
- ENCLOSURE: CORROSION PROOF THERMOPLASTIC POLYESTER APPROVED BY UL FOR ELECTRICAL CONTROL ENCLOSURE



WIRE COLOR MAP

PIN	FUNCTION	EXTREME
1	MANUAL RUN	BROWN
2	L1 (ACTIVE)	RED
3	NEUTRAL	BLACK
4	GND (EARTH)	GRN/YEL
5	ALARM FEED	YELLOW
6	ALARM RETURN	BLUE

CONTROL CABLE:
TYPE TC: DIRECT BURIAL,
SIX CONDUCTOR

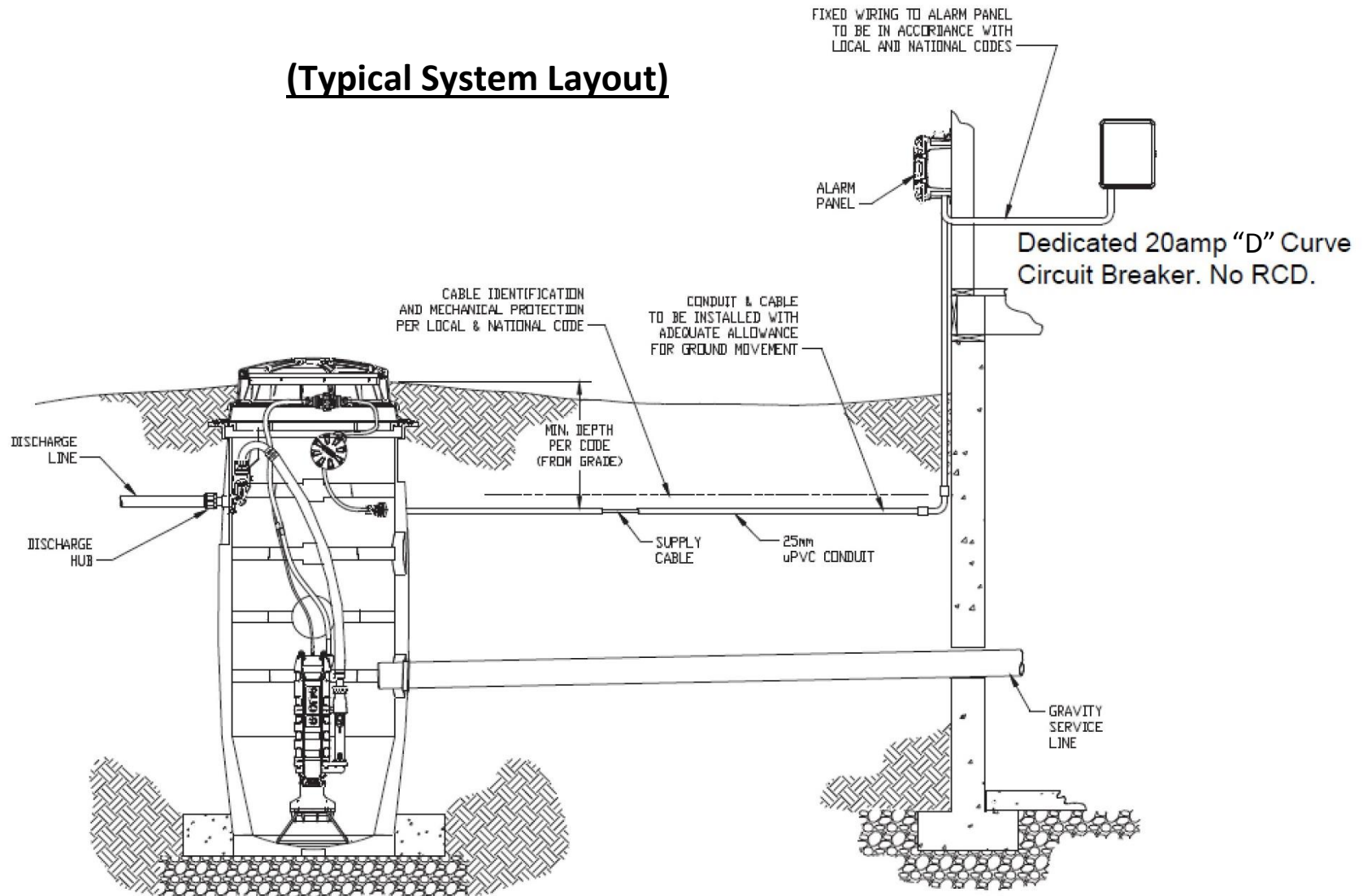
AD	12/14/07	DMS	B	06/23/11
DR BY	DATE	CHK'D	ISSUE	DATE



SENTRY PROTECT PLUS PANEL, SIMPLEX
240V, 50-60Hz SINGLE POLE POWER

NA0079P02

(Typical System Layout)



SUPPLY CABLE VOLTAGE DROP
240 VAC PUMP = .308 VOLTS PER METER OF CABLE
(MAXIMUM RECOMMENDED LENGTH = 30.5 METERS)

**YOUR GUIDE TO
THE NEW
PRESSURE SEWER SYSTEM**

FOR ANY ALARMS PHONE:



**WHANGAREI
DISTRICT COUNCIL**

(09) 430 4200



The new Pressure Sewer System

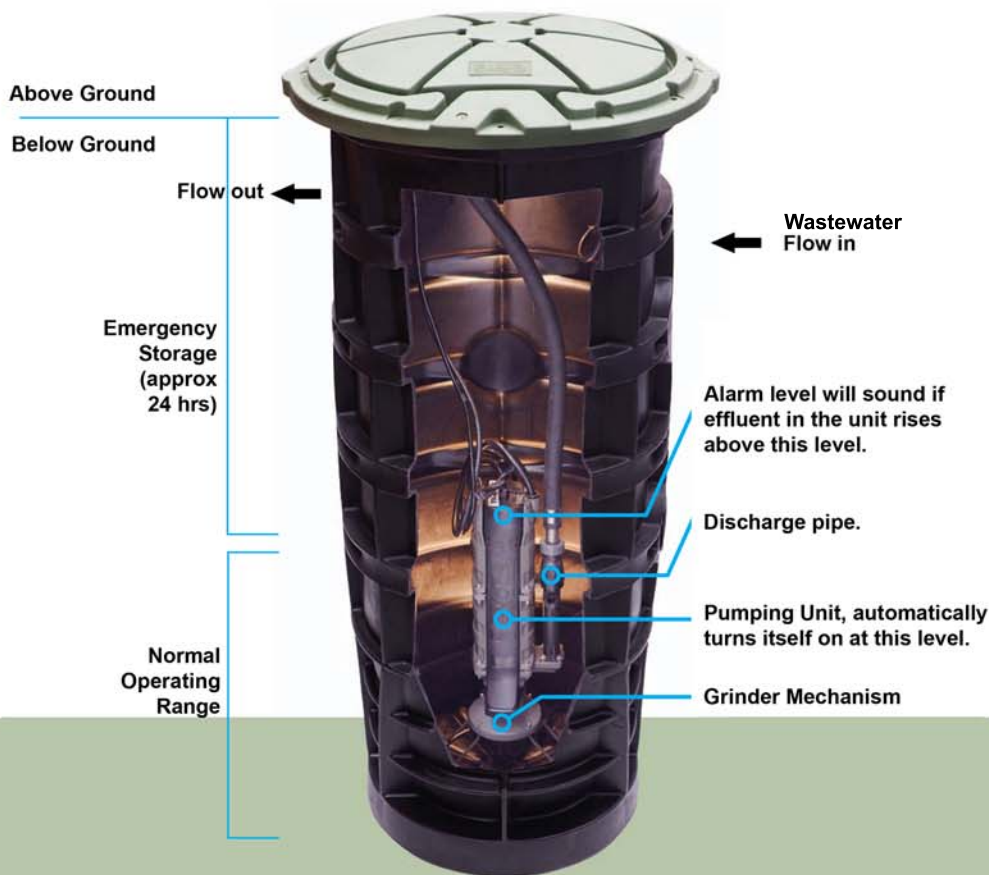


The E/One Pressure Sewer System is reliable and robust. There is very little you need to do and very little that can go wrong. Here is how it works:

The new system consists of a pumping unit installed on your property which is connected to a network of pipes from other units in your area.

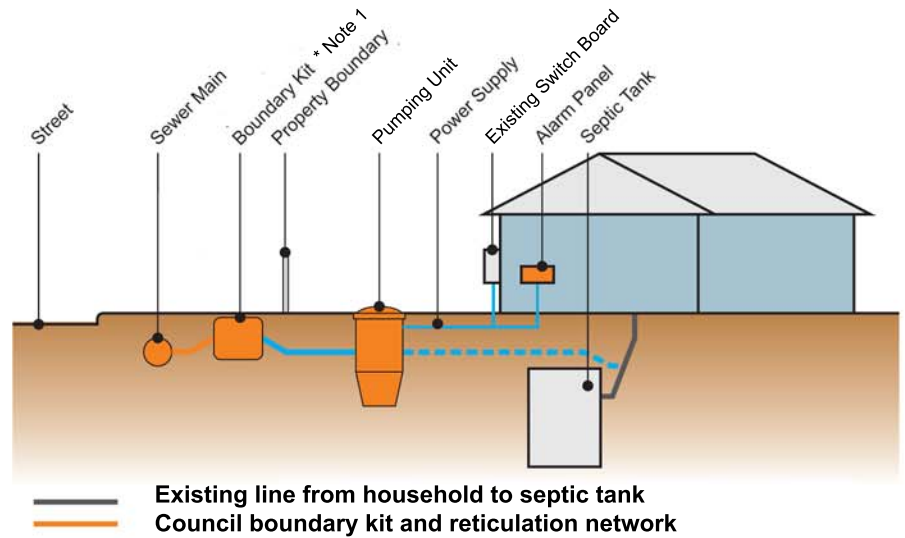
These pipes transfer wastewater to a sewerage treatment plant which processes the wastewater into reclaimed water suitable for beneficial reuse or disposal.

From ground level to the alarm level you have approximately 24 hours of emergency sewage storage. This means that even after the alarm sounds you can continue to use the system for around 24 hours before it will overflow (however you are encouraged to minimise water use during this time).



Using the System

There are a few things you need to know to ensure the system runs smoothly. The system operates like a normal sewerage system. It will take waste liquids from your toilet, sink, shower, bath, dishwasher and washing machine and transfer the waste to the local sewerage treatment plant.



Note 1: Boundary kits may not be installed for temporary solutions.

To avoid blockages and damage to the Pressure Sewerage System the following items should **NOT** be placed into the system.

- | | | | |
|--|--|--|---------------------------|
| | • glass | | • kitty litter |
| | • metal | | • explosives |
| | • gravel or sand, including aquarium stone | | • flammable materials |
| | • seafood shells | | • lubricating oil, grease |
| | • socks, rags or clothes | | • strong chemicals |
| | • plastic | | • petrol, diesel |
| | • nappies, sanitary napkins or tampons | | • storm water run off |

If the alarm sounds



The audible alarm can be turned off by pressing the button underneath the alarm panel. If your Pressure Sewer System has had a short term build up of volume then the system will automatically clean itself and the alarm will switch off within an hour. You will know if this has happened because the alarm light will go out.

If the alarm light is still active after one (1) hour then call Whangarei District Council for assistance (refer to phone number on alarm panel). Please also call if the system re-alarms within the next few days.

The Whangarei District Council will ask you a series of questions to help determine the urgency and nature of any repairs that may be required.

The system has a built in 24 hour emergency storage capacity, so any repairs will be carried out within the 24 hour period. Whilst waiting for the unit to be repaired you should try to minimise the amount of waste going through the system.

If the alarm sounded because of a short term build up and the system subsequently cleaned itself, you should still consider what caused this to happen. If possible, you should guard against this happening in the future (illegal storm water connections to the system, etc).

If you notice any irregularity with the unit, i.e. the alarm frequently sounding, then contact the Whangarei District Council and discuss your concerns with them.

PRESS THE BUTTON located under the alarm panel. This will turn off the sound of the alarm, however the alarm light will continue to be lit.

WAIT AN HOUR and then check to see if the light on the alarm panel is still on.

If the light on the alarm panel is still on then **CALL THE WHANGAREI DISTRICT COUNCIL CALL CENTRE**

Give the Whangarei District Council Helpline your name, address and contact number

If the light on the alarm panel is no longer lit then **NO FURTHER ACTION IS REQUIRED**



What happens if...

THE SYSTEM IS DAMAGED AND NEEDS REPAIR? (eg a pipe breaks)

If the alarm goes off, follow the alarm procedure on the previous page.

Determine if the broken pipe is a water main or sewer main.

If it is a sewer main, turn off the power to the pumping unit on your switchboard, report the damage to the Whangarei District Council call centre and state if the damage is on council land, or is on your land.

If the damaged pipe is a water main, report the damage to the Whangarei District Council Call Centre.

THE UNIT BECOMES SMELLY

When operating normally there should be no noticeable odours coming from the unit. If it gets smelly the unit may need flushing. Just run clean water down your kitchen or bathroom sink for about 5 minutes. If the unit remains smelly contact the Whangarei District Council Call Centre.

YOU NOTICE WET SPOTS AROUND THE UNIT OR ITS PIPES

The pumping unit and the pipeline are totally sealed. If you notice wet spots around the unit or its pipes and there has not been any recent heavy rains, contact the Whangarei District Council Call Centre to investigate.

THE ALARM KEEPS GOING OFF WHEN IT RAINS

It means rainwater may be getting into the system and overloading it. Contact the Whangarei District Council Call Centre to investigate.

THE NEIGHBOUR'S ALARM SYSTEM GOES OFF AND THEY ARE AWAY

Telephone the Whangarei District Council help line. Do not investigate the problem yourself.

THERE IS A FLOOD OR POWER FAILURE

If you can safely stay in your home during the flood then simply minimise the water usage through the unit.

If there is a power failure, discontinue using the system. When the power is restored the system will reset itself.

Be aware...

DO NOT

Put heavy weights on the unit lid.
eg. large pot plants.

The unit lid can be safely walked on but this should be avoided.

DO NOT

Touch the valves in the boundary kit.

DO NOT

Turn off the power to the pumps unless in response to a broken sewerage pipe or evacuation in an emergency.

DO NOT

Cover the pumping unit with any dirt / garden mulch etc.

ENSURE ACCESS

Is available to the pump at all times.



CONTACT THE COUNCIL

If you are making any modifications to your home which may effect the system, e.g. installing a pool or spa pool.

IF YOU ARE GOING ON HOLIDAY

Even if only for a few days, you should flush the system. This is to avoid the possibility of the system becoming smelly in your absence and causing alarm to your neighbours. To flush the system, simply run a tap in the kitchen or bathroom sink for approximately 5 minutes.

TAKE CARE IN THE GARDEN

Be careful when digging in the garden near the pump unit or it's discharge pipes. If you do accidentally break the pipeline, immediately contact the Whangarei District Council and let them know what has happened. While waiting for the Whangarei District Council to arrive, minimise the water use in the house.

DO NOT ATTEMPT TO REPAIR THE SYSTEM YOURSELF.

For emergency alarms phone;



**WHANGAREI
DISTRICT COUNCIL**

(09) 430 4200