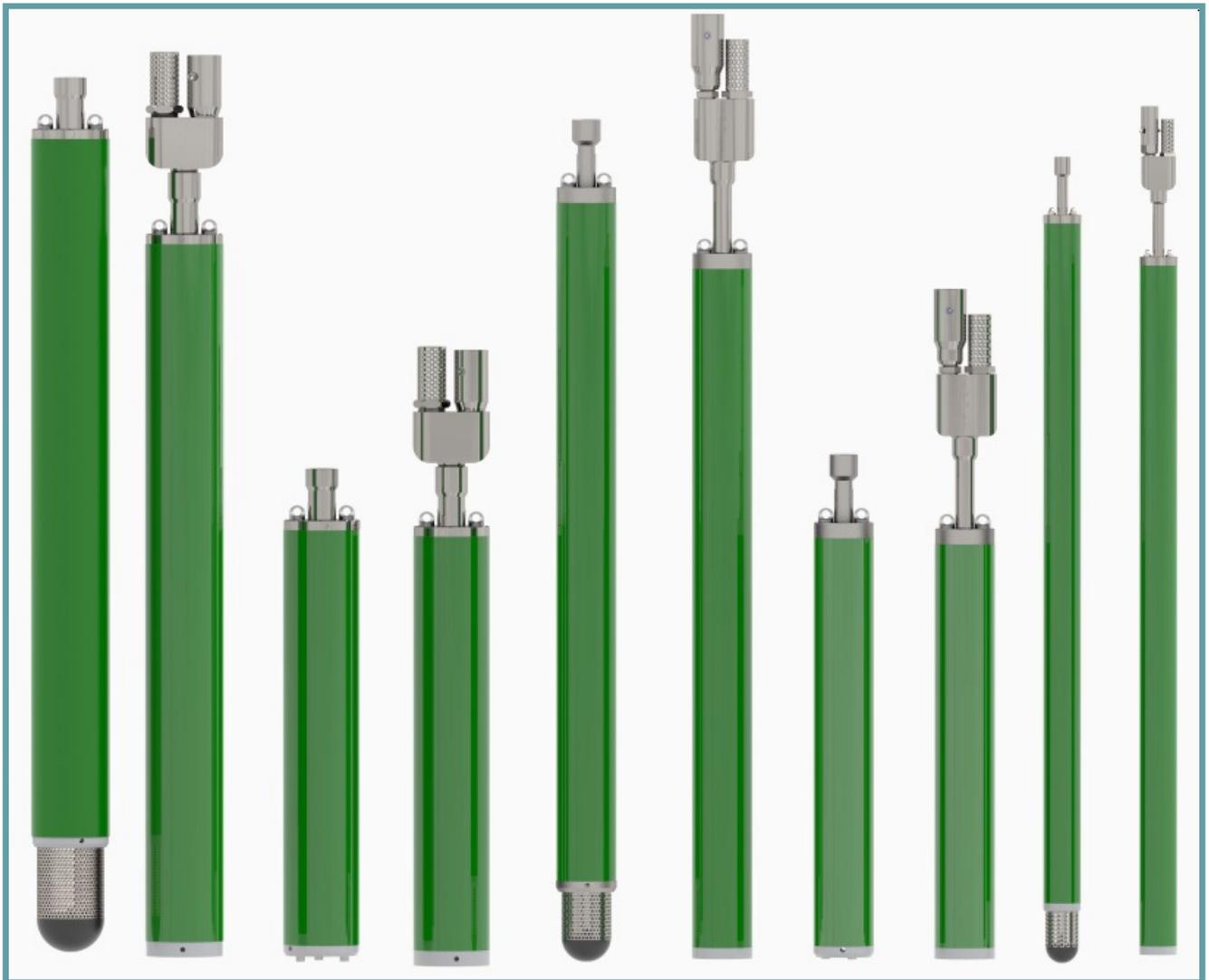




Viridian
Systems
Clearer Thinking

VP Pneumatic Pumps



Pumping Excellence



Viridian Systems have been building the VP range of pneumatic borehole pumps at our facilities in the Northwest England since 2001.

About Viridian

Viridian Systems is a specialist manufacturer of pneumatic borehole pumps for landfill leachate and contaminated groundwater. From our base in Northwest England, we supply our pumps to all international markets and have distributors and partners in the USA, Mexico, Canada, Brazil, Colombia, Australia, France, Italy, Spain, Taiwan, Japan, China, Africa and Germany.



The VP Pump Range

The VP series are float actuated, fully automatic, self-regulating pneumatic borehole pumps that require no external form of control.

The VP range of pumps are all designed specifically for pumping landfill leachate, landfill gas condensate and contaminated groundwater. As no down-well level control device is required, the VP pumps lend themselves to being part of a multi-well pumping system.

This makes overall system control very simple. With minimal training, the client's site personnel quickly become confident with both pump and system.

As the VP pumps are driven by compressed air, a multi-well system would have an air-main connecting each pump – a far safer power source than electricity cables and less costly!

The VP series have been designed to ensure there is a model to suit your pumping needs – for example high temperature applications and chemical resistance.

The VP range is available in a range of sizes and application specific versions.

The VP4 range is capable of discharging 1.1 litres of liquid per cycle. It is available as a top loading version as well as short version, the LDD (when minimum liquid head is vital).

The VP3 range has a reduced discharge capacity but it is ideal for smaller borehole sizes. It is also available in top loading and shorter length (LDD).

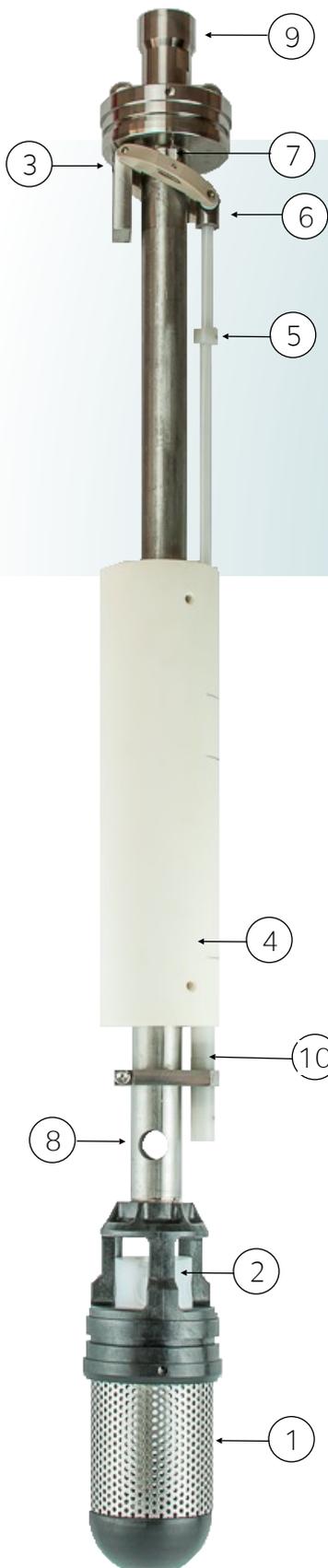
Unrivalled engineering.

The materials of construction of our standard pumps have been selected for the harsh environment in which they are working, such as aggressive media, high-temperature and suspended solids. For these reasons materials of construction include:

- 316L Stainless Steel
- PEEK • PTFE (Teflon®)
- FPM (Viton®)
- Syntactic
- 17/4 Stainless Steel
- UHMW PE
- PVDF (Kynar®)
- GRP



How it works



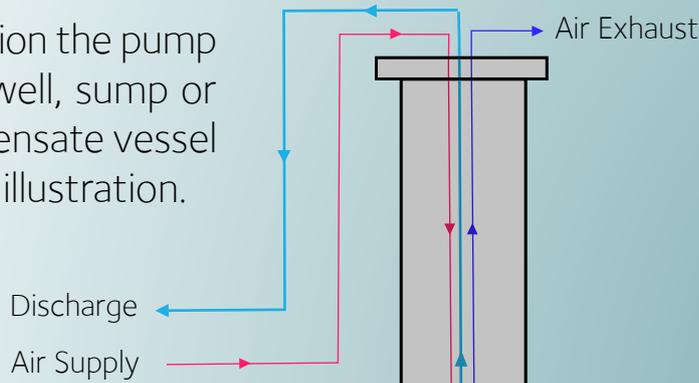
The VP series are float actuated, fully automatic, self-regulating pneumatic borehole pumps that require no external form of control.

Pump Operation Cycle:

- Liquid enters the pump via the strainer (1) and inlet check valve (2)
- Air trapped within the pump escapes through the air exhaust (3)
- The float (4) rises as the liquid enters and when it gets to the top of its travel (5), it trips the rocker mechanism (6)
- The exhaust valve (3) closes
- The air inlet valve (7) opens allowing compressed air into the pump.
- Compressed air closes the bottom check valve (2)
- Liquid within the pump is discharged from the pump through the discharge port (8) and up the central discharge tube
- Liquid passes the top check valve (enclosed in head) and passes through riser (9)
- Float descends as liquid is discharged
- Float pulls the rocker mechanism back when the spring (10) is compressed.
- The air inlet closes, air exhaust opens
- Compressed air trapped within the pump can now escape to atmosphere via the exhaust valve (3)
- The pump continues to cycle in this way.

Typical Pump Installation

In normal operation the pump is installed in a well, sump or landfill gas condensate vessel as shown in the illustration.



The VP series are designed for quick and easy installation or removal. The discharge outlet is a 32mm pipe that is connected via a 1 inch threaded transitional electro fusion coupler.

The air inlet and outlet lines (10mm OD) are connected via push fit pneumatic fittings.

As no down-well level control device is required, the VP pumps lend themselves to being part of a multi-well pumping system.

This makes overall system control very simple. With minimal training, the client's site personnel quickly become confident with both pump and system. As the VP pumps are driven by compressed air, a multi-well system would have an air-main connecting each pump - a far safer power source than electricity cables.

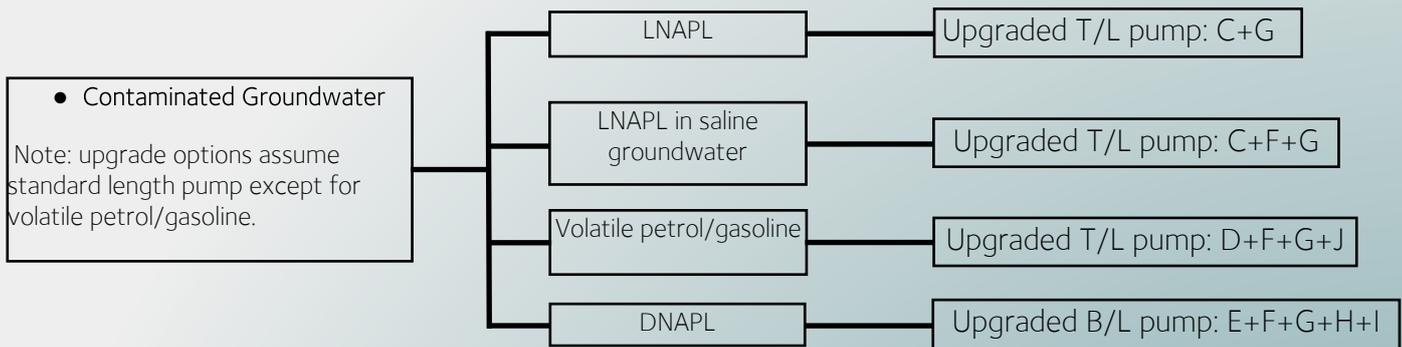
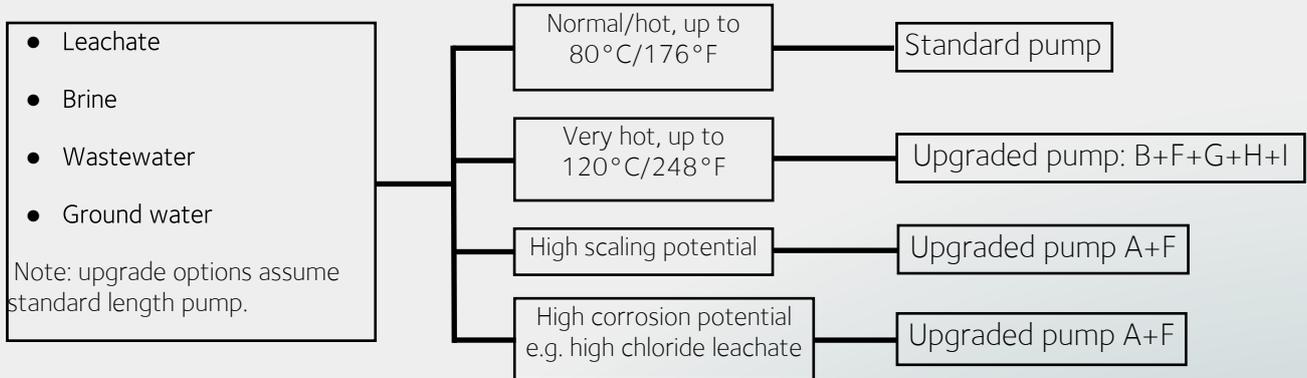


The VP series were the first pneumatic borehole pumps to be fully ATEX certified in the UK.



Pump Upgrade Chart

At Viridian, we recognise that some pumping applications require modified versions of our pumps with upgraded components. The chart below is designed to assist the specifier in selecting the right pump for the application.



- Application specific options for standard pump upgrade
- A, Standard float
 - B, White float
 - C, Grey float (standard length or LDD)
 - D, Grey float (extra long)
 - E, White LDD float
 - F, Enhanced corrosion resistance
 - G, HC/HT actuator rod
 - H, Stainless steel bottom check valve assembly (BCV)
 - I, HT BCV shuttle
 - J, Extra long pump

- LNAPL
- Diesel, S.G. 0.82-0.95 @ 20°C
 - Petrol/gasoline, S.G. 0.70-0.74 @ 20°C
 - Kerosene, S.G. 0.78-0.81 @ 20°C

- DNAPL:
- Chlorinated solvents, e.g. de-greaser, dry-cleaner cleaning fluid
 - Coal tar, creosote, PCB's
 - Extra heavy crude oil
- The product to be pumped determines float density and material selection, particularly chlorinated solvents.



Installation Kits

Viridian Systems supply a range of fittings to allow the easy installation of the VP pumps. The installation kit includes all the required fittings for a safe and efficient installation, removal and sampling of the VP pump.



Pressure Regulator and filter:

This is included in the kit to remove any residual particulates from the compressed air supply and to adjust the air pressure to the pump.

Discharge Line:

The kit includes the 1" inch isolation valve and sample point. It also includes a quick release Camlock for easy separation during maintenance periods.

Air supply:

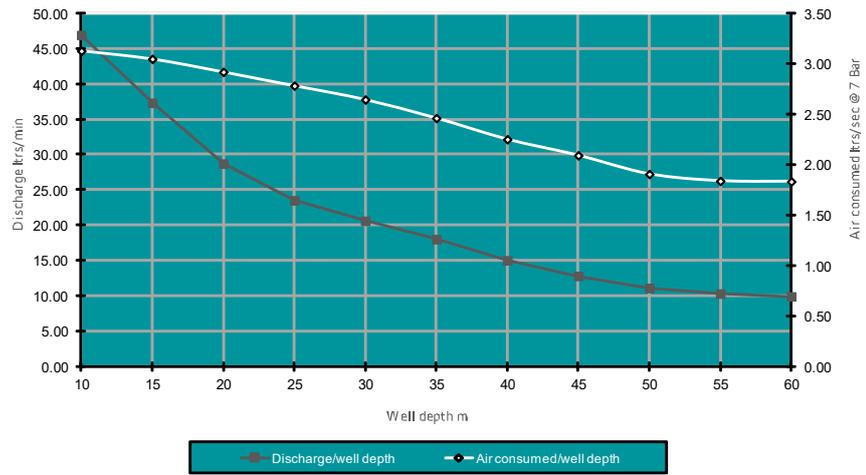
The kit includes the transitional fittings needed to step down from 1inch (HDPE) pipe work to 10mm plastic tubing. It includes a valve to isolate the supply.

Performance Charts

VP4 BL



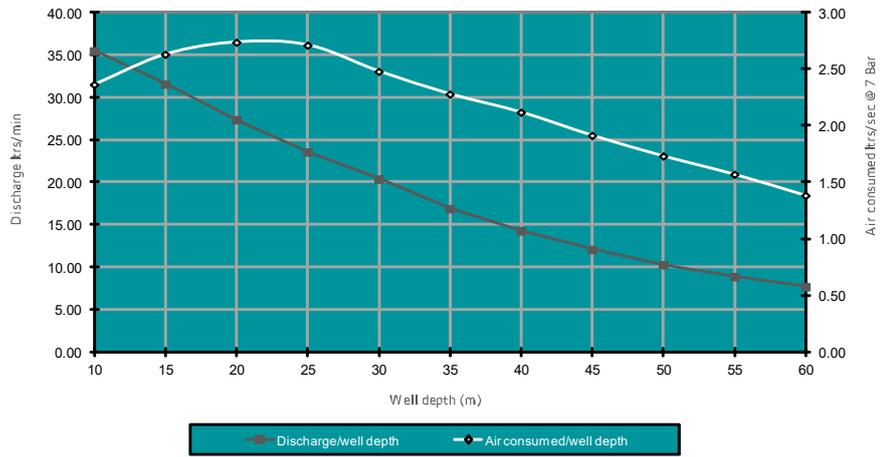
VP4-BL liquid discharged & air consumed/well depth.
Pump submerged by 3m and 25mm bore discharge hose.
Air inlet pressure 7 Bar



VP4 TL



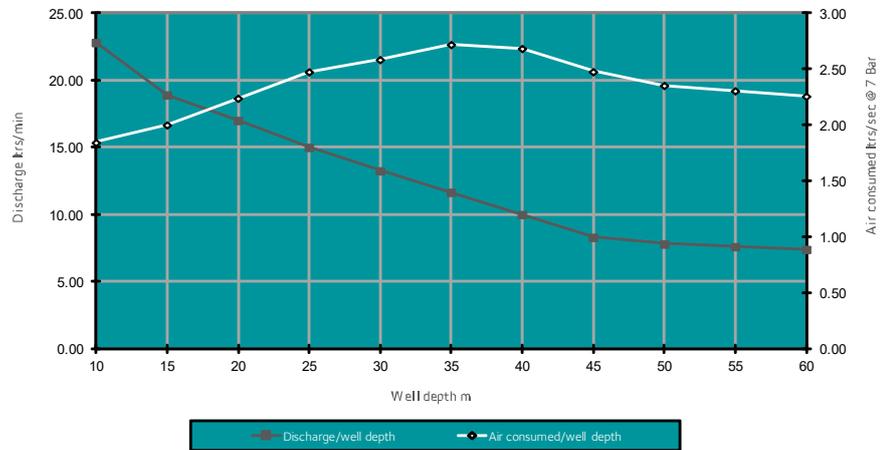
VP4-TL liquid discharged & air consumed/well depth.
Pump submerged by 3m and 25mm bore discharge hose.
Air inlet pressure 7 Bar



VP4 BL LDD



VP4-BL LDD liquid discharged & air consumed/well depth.
Pump submerged by 3m and 25mm bore discharge hose.
Air inlet pressure 7 Bar

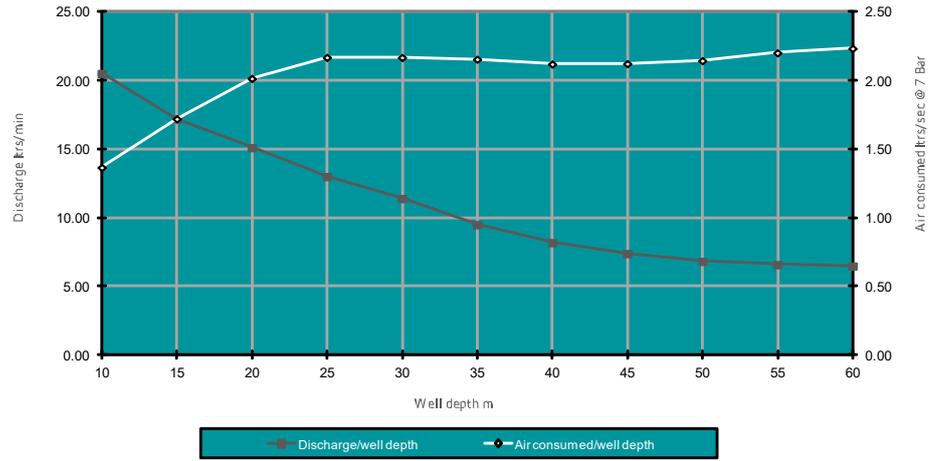


Performance Charts

VP4 TL LDD



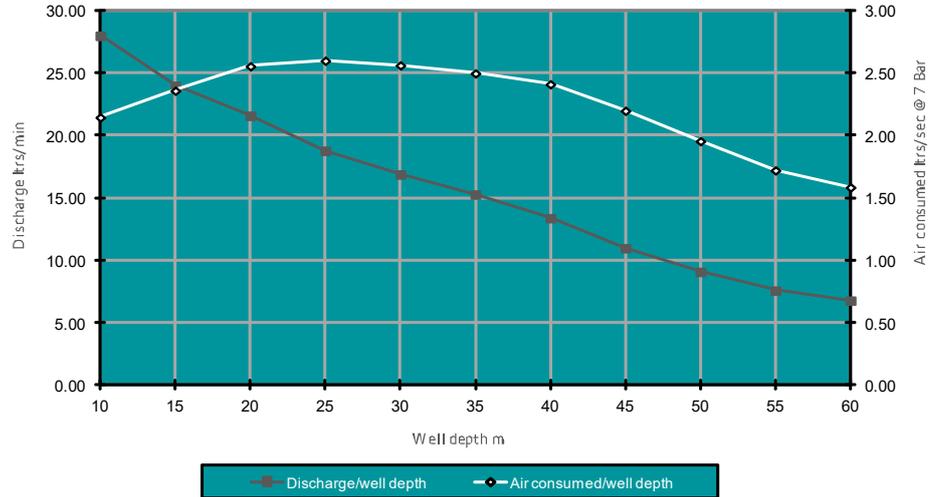
VP4-TL LDD liquid discharged & air consumed/well depth.
Pump submerged by 3m and 25mm bore discharge hose.
Air inlet pressure 7 Bar



VP3 BL



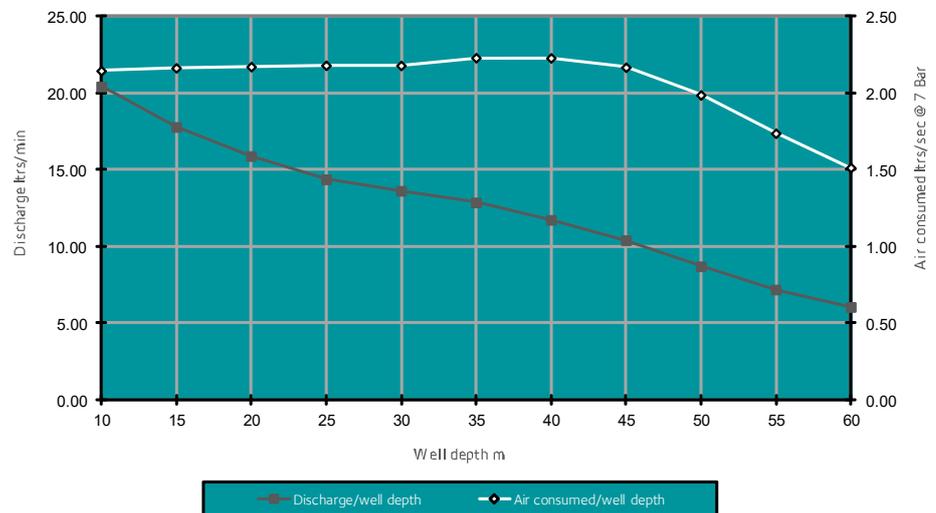
VP3-BL liquid discharged & air consumed/well depth.
Pump submerged by 3m and 25mm bore discharge hose.
Air inlet pressure 7 Bar



VP3 TL

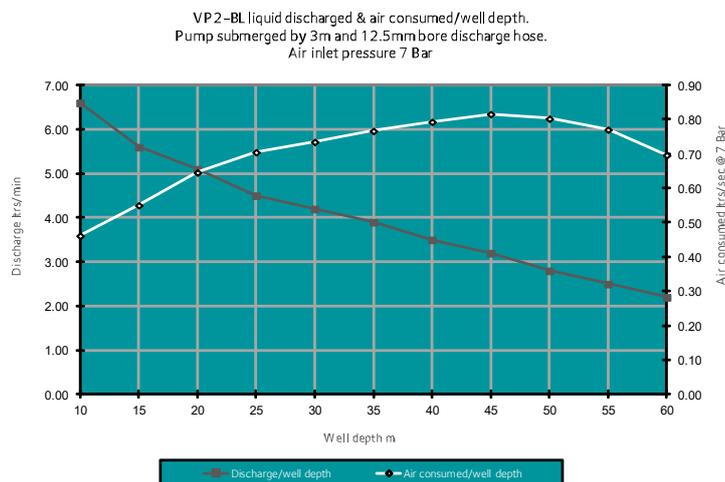


VP3-TL liquid discharged & air consumed/well depth.
Pump submerged by 3m and 25mm bore discharge hose.
Air inlet pressure 7 Bar

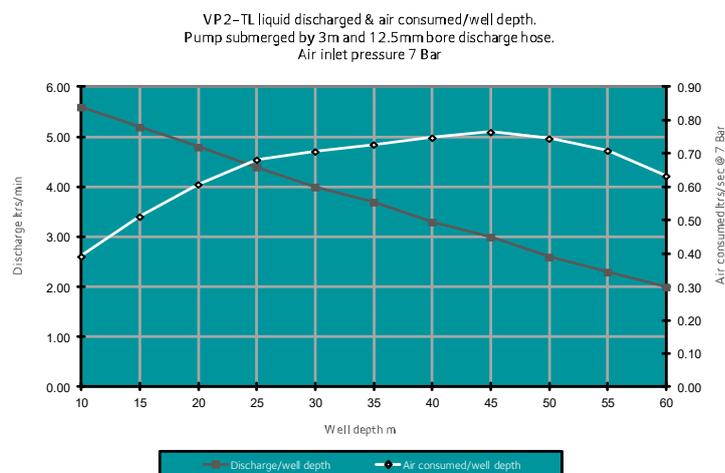


Performance Charts

VP2 BL



VP2 TL



Longevity

Viridian started manufacturing pneumatic pumps in 2001 and although we are still servicing pumps we built in the early years, the design and materials of construction has evolved to make our pumps the most reliable and long-lasting on the market. There are of course very demanding applications, particularly in the groundwater remediation market, where enhanced corrosion, temperature and chemical resistance is needed; for these applications we can change standard parts to improve chemical, temperature and corrosion resistance.

For more information please refer to the upgrade chart on page 07 or contact us for advice.

Contact us today for more information





Viridian Systems

Clearer Thinking



Distributed in Australia and New Zealand by:

Fieldtech Solutions
Tel - 03 96769664
sales@fieldtechsoln.com

