

# DEDICATED MICROPURGE® SAMPLING EQUIPMENT CATALOG



*The most complete selection of pumps, control equipment, and accessories for dedicated sampling — from the Low-Flow Specialists.*

SEVERN  
TRENT  
SERVICES

**QED ENVIRONMENTAL SYSTEMS**  
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# QED engineering breakthroughs power the new low-flow ground water sampling revolution

## SAMPLING LEADERSHIP SINCE 1982

Nearly 20 years ago, QED installed the nation's first dedicated bladder pump sampling system at a landfill, in Wayne County, Michigan.

Since then, we have led the industry in producing more accurate, cost-effective ways to collect ground water samples. More **Well Wizard**® bladder pumps are

## QED ground water sampling FIRSTS

QED has been a long time leader in the development of ground water sampling technology. The benefits of this leadership are incorporated throughout our product line in many large and small ways.

- Easy one-touch bladder pump control for low-flow sampling
- Exclusive Purge Scan automatic indication of purge stabilization
- Automatic Drawdown Control to prevent over-purging
- The first highly portable backpack for bladder pump control and power
- Zero leak-back bladder pumps
- Independently certified clean sampling pumps — 100% traceable
- Electropolishing of all stainless steel pump parts for maximum purity and corrosion control
- Bonding, Teflon®-lining and high pullout strength design of tubing
- Long-life bladders and 10-year pump warranty
- Disposable field filter cartridges and 100% rinsing/purity check

operating in wells worldwide than all other dedicated sampling pumps combined.

Years of QED efforts to promote low-flow sampling and the introduction of **MicroPurge**® equipment have helped these methods become widely accepted practice, as the ground water monitoring community looks for higher sample accuracy and lower costs.

Now, at the dawn of the 21st century, QED has made another quantum leap by becoming part of the **Severn Trent Laboratories** group. This align-

ment with the leaders in the environmental laboratory field provides QED with enhanced resources and capabilities to serve our customers even better.

## EXCLUSIVE SAMPLING ADVANTAGES

The new **MicroPurge basics**™ line of compact, lightweight power and control equipment has brought major improvements in portability and well access to sampling crews and project managers. Users enjoy many exclusive benefits unavailable with any other products.



The **MP10 Controller** is the simplest low-flow sample pump controller ever made, with easy up/down arrow keys for one-touch adjustment of purge and sample flow rates.

Settings can be recalled during the next sampling round, saving time and improving consistency. *See Page 4*

The one-of-a-kind **MP15 Control & Power Pack** combines the full capabilities of an MP10 Controller with the sampling power of an on-board CO<sub>2</sub> cylinder for unparalleled portability and sampling ease — there's no need to carry a separate air supply! *See Page 6*



The **MP20 Flow Cell** is specifically made for low-flow use. Exclusive **Purge Scan**™ monitoring tracks multi-

ple parameters and gives a positive signal when stabilization occurs and sampling can begin. *See Page 8*

The **MP30 Drawdown & Water Level Meter** can be linked to MP10 and MP15 Controllers for exclusive **Automatic Drawdown Control**. When the well level reaches a preset limit, the MP30 overrides the controller to pause pumping until the well recovers, preventing over-purging. *See Page 9*



The **MP40 Engine/Compressor** is the lightest, most compact full-powered air source available. At just 48 pounds with a full tank, it's easy to toss in a pickup, with an optional cart kit for on-site transport. A 200 foot hose reel option reaches wells where a truck can't go. *See Page 10*

# The Choice is Clear

## *Low-flow sampling gives you all the advantages.*

Low-flow sampling and MicroPurge controls with dedicated Well Wizard pumps offers important advantages over other methods. Most monitoring projects achieve the highest sample accuracy and lowest overall cost when they use low-flow sampling technology.

### **MORE ACCURATE, PRECISE SAMPLES**

- Cuts sample turbidity by orders of magnitude
- Minimizes degassing & volatilization
- Reduces or eliminates filtration requirements

### **GREATLY REDUCED SAMPLING COSTS**

- Cuts purge volume up to 95%, reduces handling and disposal costs
- Eliminates decontamination & rinse blank analyses
- Reduces sampling labor costs significantly

### **REGULATORY, SCIENTIFIC, AND CUSTOMER ACCEPTANCE**

- Approved in nearly every state and EPA region; often preferred in specific settings
- Increasing international acceptance, including new UK guidance documents
- Produces more consistent analyses, satisfying statistical guidelines



*Low-flow sampling methods control turbidity and deliver higher quality samples (right) – a clear advantage.*

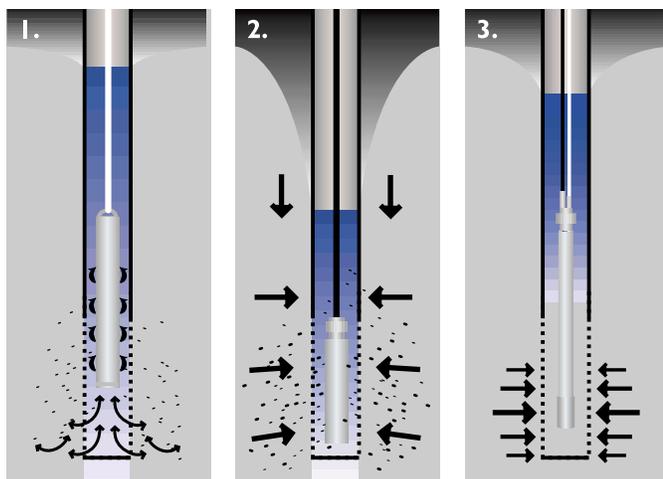
### **EPA RECOGNIZES LOW-FLOW ADVANTAGES**

“In general, the advantages of low-flow purging include:

- samples which are representative of the mobile load of contaminants present (dissolved and colloid-associated);
- minimal disturbance of the sampling point thereby minimizing sampling artifacts;
- less operator variability, greater operator control;
- reduced stress on the formation (minimal drawdown);
- less mixing of stagnant casing water with formation water;
- reduced need for filtration and, therefore, less time required for sampling;
- smaller purging volume which decreases waste disposal costs and sampling time;
- better sample consistency, reduced artificial sample variability.”

– “Low-Flow (Minimal Drawdown) Ground Water Sampling Procedures,” Robert J. Puls & Michael J. Barcelona, *EPA Ground Water Issue*, April 1996

For a complete library of papers, articles, abstracts, and FAQs about low-flow ground water sampling, visit QED online at [www.micropurge.com](http://www.micropurge.com) or e-mail [info@qedenv.com](mailto:info@qedenv.com).



*Bailers & portable pumps (Fig. 1) mix stagnant water, air, and sediment into samples – even after purging 3 to 5 well volumes. High-rate pumps (Fig. 2) reduce sampling precision due to high-flow effects on volatiles, turbidity, and mixing. Low-flow sampling methods (Fig. 3) deliver precise samples with minimal purging; natural aquifer flow brings representative water to the sampling zone with no mixing or excess turbidity.*

# Well Wizard® Bladder Pumps: The Low-Flow Sampling Standard



*The leaders since 1982 in dedicated pump technology, performance, and support.*

The heart of every low-flow ground water monitoring system is the sampling device. For the system to do its job properly, the sampling device must:

- run reliably even at low rates (100 ml/min or less) over a wide range of conditions;
- operate gently without increasing turbidity or altering samples;
- deliver reliable performance for many years without needing frequent repairs or maintenance.

For nearly 20 years, Well Wizard pumps from QED have been doing all this... at more sites... for more users... than any other system.

## The most complete low-flow pump selection

MicroPurge system pumps come in an unsurpassed range of sizes, materials, and capabilities, including models for deep wells, narrow or

obstructed casings, and small-volume pumps for low-yield wells. Together with MicroPurge controllers, flow cells, and accessories, they create the most reliable, cost-effective low-flow system available.

Field proven pump designs and exclusive, high performance PTFE bladder formulation offer the reliability critical to long-term monitoring. QED was first in the industry with a standard 10-year sampling pump warranty.

## Unmatched regulatory and user acceptance

Bladder pumps, EPA-accepted for low-flow sampling, have been shown to deliver superior sample accuracy and precision in dozens of independent studies. Nearly 70,000 Well Wizard bladder pumps are in use — more than all other brands and types of dedicated ground water samplers combined.

## Well Wizard® Bladder Pump Advantages

- EPA-accepted low-flow sampling accuracy.
- Models for every well — low yield, short water column, depths to 1,000 feet, casing I.D. down to 1.25".
- Proven reliability since 1982, with the industry's first standard 10-year warranty.
- Exclusive PTFE bladder formulation rated for years more flex life than other bladder materials.
- Rental program available.

# How They Work

## Well Wizard Bladder Pumps

### Designed for superior low-flow sampling performance

Pneumatic bladder pumps operate with a unique, gentle action ideal for low-flow sampling. Timed on/off cycles of compressed air alternately squeeze the flexible bladder to displace water out of the pump, and release it to allow the pump to refill by submergence, without creating any disturbance that could affect sample chemistry. Bladder pumps run easily at low rates for extended times, without the problems of other devices.

- No overheating of high-speed electric pump motors, which can alter samples and ruin the pumps.
- No churning action, like that of bailers or inertial-lift samplers that increase turbidity.
- No suction to cause degassing of dissolved volatile contaminants.

The bladder prevents contact between the pump drive air and the sample, and the downwell equipment is permanently dedicated to each well, so both samples and the well are protected from disturbance or the danger of cross-well contamination.

### The easiest system to order and use

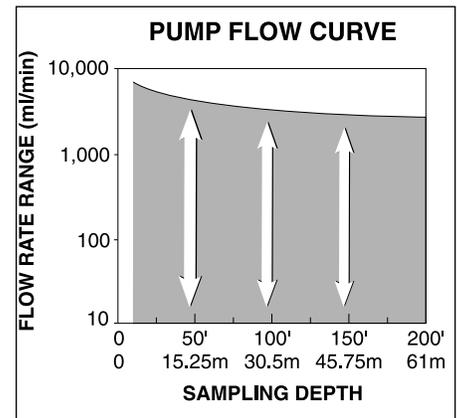
Well Wizard Bladder Pumps are part of the complete low-flow MicroPurge sampling system engineered for easy installation and use. QED application specialists will help specify the most effective, economical pumps and accessories for your site.

Each pump is cleaned and laboratory-certified to be free of volatile organic compounds, acid extractable and base neutral contaminants. Your system is preassembled, with tubing cut to length, ready to install.

If desired, installation by OSHA-certified field technicians is available. QED customer support — with trained local representatives, 24-hour toll-free hotline, and next-day loaners or service turnaround when needed — backs you with unmatched expertise and service.

More MicroPurge dedicated sampling systems and pumps have been chosen since 1982 than all other manufacturers' equipment combined.

To find out why, call QED today for a Low-Flow Data Sheet and site-specific cost analysis.



*This graph shows the extremely wide range of precisely controlled flow rates available from Well Wizard Bladder Pumps and MicroPurge basics™ controllers. Consult QED for flow rates at greater depths or other special applications.*

### Added System Benefits

Well Wizard pumps will provide the most precise low-flow purging and sampling when operated by a MicroPurge basics™ Model MP10 Controller, with purge water monitoring via the MicroPurge basics™ MP20 Flow Cell.

## MICROPURGE PUMP SPECIFICATIONS

Model No.	Pump Materials	Length	O.D.	Fitting Material	*Tubing Size	Volume (ml)	Max. Lift
T1100M	Teflon	3.3' (1.0 m)	1.66" (4.2 cm)	Teflon	1/4 & 3/8" (6 & 9 mm)	395	250' (75m)
P1101M	PVC	3.4' (1.04 m)	1.66" (4.2 cm)	Polypropylene	1/4 & 3/8" (6 & 9 mm)	395	300' (90m)
P1101HM	PVC	3.3' (1.0 m)	1.66" (4.2 cm)	Stainless Steel	1/4 & 3/8" (6 & 9 mm)	395	600' (180m)
ST1101PM	316 Stainless Steel	3.4' (1.04 m)	1.66" (4.2 cm)	Stainless Steel	1/4 & 3/8" (6 & 9 mm)	395	1,000' (305m)
T1200M	316 S.S. and Teflon	3.4' (1.04 m)	1.50" (3.8 cm)	Stainless Steel	1/4 & 3/8" (6 & 9 mm)	495	300' (90m)
T1250	316 Stainless Steel	1.25' (0.38 m)	1.50" (3.8 cm)	Stainless Steel	1/4 & 1/4" (6 & 6 mm)	100	300' (90m)
P1150	PVC, Teflon	1.63' (0.5 m)	1.66" (4.2 cm)	Polypropylene	1/4 & 1/4" (6 & 6 mm)	130	300' (90m)
T1300	316 S.S. and Teflon	3.8' (1.16 m)	1.00" (2.5 cm)	Stainless Steel	1/4 & 3/8" (6 & 9 mm)	220	300' (90m)

\* To choose 1/2" (13 mm) rather than 3/8" (9 mm) discharge tube option, delete suffix M from pump model number.

### INTAKE SCREEN SPECIFICATIONS

Model No.	Material	Screen Size	Fits Pump Model(s)
35200	Stainless Steel	0.01" (0.25 mm) mesh	T1200, T1250
37789	PVC	.010" (0.25 mm) slot	P1101, P1101H
37727	PVC	.010" (0.25 mm) slot	P1250 (also P1101, P1101H)
37733	Teflon	.010" (0.25 mm) slot	T1100

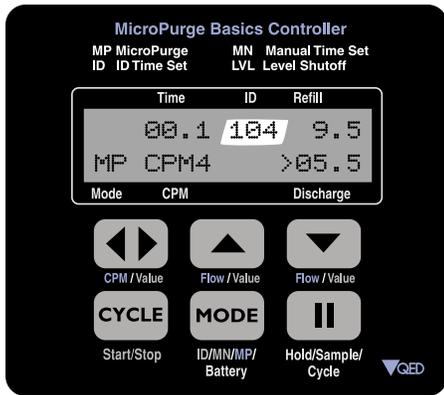
Note: Pump models ST1101P, T1300 include intake screens. Screens are optional on other pump models, but are required for full 10-year warranty coverage.

### MATERIALS SPECIFICATIONS

Stainless Steel:	Type 316 electropolished
PVC:	NSF-grade, extruded specifically for QED with no markings or lubricants.
Teflon (pumps):	duPont Teflon® and other premium PTFE resins
Teflon (bladders):	Q-flex exclusive 200,000 cycle rated PTFE.
Teflon is a registered duPont trademark.	

# MP 10 Digital Controller

PATENT PENDING



*Simple arrow key control of low-flow rates makes purge rate adjustment easy.*



## Expert flow and drawdown control for low-volume purging

The MicroPurge **basics**™ MP10 Controller revolutionizes low-flow sampling with advanced logic control of purge flow and well drawdown. Simple up-down arrow keys increase and decrease purge flow, driving a microprocessor to re-create expert techniques for low-flow adjustment. Then, optimized settings are identified for recall in the next round of sampling.

The MP10 also offers an easy way to prevent excessive monitor-

ing well drawdown during purging, by linking to the optional MP30 Drawdown/Water Level Meter.

The lightweight, compact MP10 sets the pace for a new generation of genuine MicroPurge basics equipment, **first in control and power for low-flow sampling.**

### Simple, stable, repeatable flow rate setting

The MP10 controls the most advanced low-flow sampling sys-

### MicroPurge® basics™ MP10 Controller Advantages

- Exclusive MicroPurge control mode uses simple arrow keys to adjust low-flow rates easily and repeatably, using a microprocessor to re-create the flow adjustment strategies used by experienced samplers.
- Connection port allows linking to optional MP30 Drawdown/Water Level Meter, which signals MP10 Controller to enter standby mode if drawdown limit is exceeded.
- Multi-mode digital control includes MicroPurge Mode, ID Mode for repeat events, and manual control.
- Weatherproof controls are housed in a rugged, compact (10-3/4" x 9-3/4" x 5") case.
- Full digital display of all setting and status information.

## MICROPURGE CONTROLLER SPECIFICATIONS

### SYSTEM SPECIFICATIONS:

Model No.:	MP10
Dimensions:	10-3/4" x 9-3/4" x 5" (27x25x13 cm)
Weight:	5.5 lbs (2.5 kg)
Case Material:	Structural Resin
Keypad:	6 Keys
Display:	2 Line, 16 Character / LCD Display
Power:	3 "AA" batteries
Battery Life:	50,000 Cycles @ 70°F (21°C)
Max. Pressure:	120 PSI (827.5 kPa)
Max. Pump Depth:	250 Feet (76 m)
Operating Temperature:	-20 - 150°F (-29 - 66°C)
Connection to MP30 Drawdown Meter	Heavy-duty cable (supplied with MP30)

tem ever made. You will purge and sample quickly and easily, with precise, steady low-flow pumping rates from one sampling event to the next. QED's new **basics** equipment incorporates the advantages of downsized equipment, which is lighter and more portable, reduces equipment cost and increases sampling crew productivity. Simplified, sealed electronics complete a design that delivers famous QED durability and value.

MicroPurge **basics** controllers can be connected to the MP30 Drawdown Meter for optional Automatic Drawdown Control, an industry first.

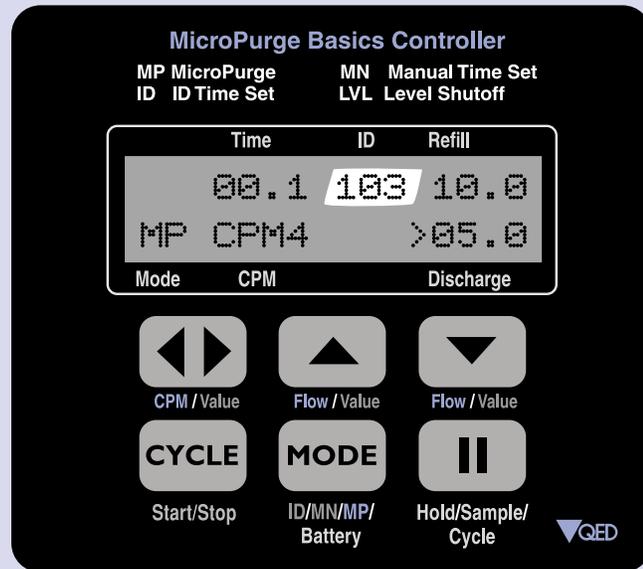
### Multi-mode digital control

The MP10 gives you three easy-to-use operating modes, to cover every sampling protocol and situation.

- **MicroPurge (MP) Mode** optimizes control settings to reach the desired pump flow rate; you don't calculate pump cycles, refill or discharge times.
- **ID Mode** recalls previously optimized settings for each well, providing consistent performance every time.
- **User Set (MN) Mode** provides manual pump control for extreme depths and other special cases.

*Can be used with any bladder pump system with the use of simple adapters*

## How It Works



Pressing the UP Arrow increases pump flow in controlled steps.



The DOWN Arrow Key decreases the flow rate in controlled steps.



The LEFT/ RIGHT Arrow Key adjusts Cycles Per Minute (CPM) of your pump.



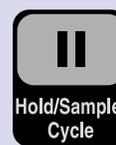
The ID Number changes when an UP or DOWN Arrow is pressed. In ID Mode, this number recalls settings for future sampling.



The CYCLE Key Starts and Stops pump cycling.



The MODE Key changes modes from default MP (MicroPurge) to ID Mode to MN (User Set) Mode. This key also allows battery check.



Pressing the PAUSE Key puts the controller in HOLD Mode, stopping flow. A second press allows push button controlled vial filling. A third press returns system to normal cycling.

### MicroPurge Mode Quick Guide

1. Opening cover turns power ON. (Close to turn OFF)
2. Select desired Cycles Per Minute (CPM) with the ◀▶ key (default value is 4 CPM).
3. Turn throttle to set depth on gauge to 10 - 20 feet deeper than the pump location in the well.
4. Press **CYCLE** to START pumping.
5. When water discharge begins, adjust throttle until a slow, steady flowstream is achieved.
6. Press ▲▼ keys to set the desired purge flow rate.
7. To collect samples, continue purge flow, or use || key to directly control sample flow and pause.

# MP15 Portable Control & Power Pack

PATENT PENDING



*The portable power and control you need to reach every well*

## Compact controller with on-board gas supply

Remote wells and inaccessible sites are no problem with the unique, new MP15 Control & Power Pack. The convenient carrying case combines a compact compressed gas cylinder with the advanced control of MicroPurge basics Controllers.

With this combination, a complete sampling setup can be carried by a single person, to reach

wells where trucks or even compressor carts can't go.

The 5 lb. CO<sub>2</sub> cylinder powers hours of sampling, and is easily refilled. But the MP15 isn't just for remote wells. Its built-in bypass fitting allows it to be used with larger cylinders or other gas sources, extending your range even more.

## Simple, stable, repeatable flow rate setting

The MP15 controller's six-button keypad is your gateway to the control and power of the most advanced low-flow sampling system ever made. With remarkable ease, you will achieve precise, stable control of low pumping rates, quickly and repeatably, from one sampling event to the next.

QED third-generation engineering gives you the advantages of downsized equipment, which is lighter and more portable, reduces equipment cost, and increases sampling crew productivity. Simplified, sealed electronics are put together in a design that delivers famous QED durability and value.

The controller can be connected to the MP30 Drawdown Meter for optional Automatic Drawdown Control, an industry first.

## MicroPurge® basics™ MP15 Control & Power Pack Advantages

- The MP15 weighs just 27 lbs. with a full cylinder in its padded nylon field case. Backpack carrying leaves hands free for other sampling equipment.
- Also includes capability for optional drawdown control with link to the MP30 Drawdown Meter.
- Lightweight, silent drive power: 3.5 hours of purging capacity at 75 foot pump depth!

## Multi-mode digital control

The MicroPurge basics Controller gives you three easy-to-use operating modes, to cover every sampling protocol and situation.

- **MicroPurge Mode** easily adjusts low-flow rates with "faster/slower" arrow keys to reach desired rates. You don't have to worry about calculating pump cycles or refill and discharge times.
- **ID Mode** instantly recalls optimized settings previously established for each well, providing precise, consistent performance from event to event.
- **User Set (MN) Mode** provides manual control of pump operation for extreme depths and special cases.

## MP15 SPECIFICATIONS

### SYSTEM SPECIFICATIONS:

Model No.:	MP15
Dimensions:	25-1/2" x 12-1/2" x 10" (65x32x25 cm)
Weight:	27 lb. (12 kg)
Case Material:	Polyethylene
Carry Bag:	Standard
Back Pack Straps:	Optional
Keypad:	6 Keys
Display:	2 Line, 16 Character LCD Display
Power:	3 "AA" batteries
Battery Life:	50,000 Cycles @ 70°F (21°C)
Max. Pressure:	120 PSI (827.5 kPa)
Max. Pump Depth:	250 Feet (76 m)
Operating Temp.:	-20 - 150°F (-29 - 66°C)
Cylinder:	5 lb. (2.3 kg) CO <sub>2</sub>
Cylinder Life:	>3 hrs (75' pump depth)
MP30 Connection:	Heavy-duty cable (supplied with MP30)

## MP15 PURGE CAPACITY\*

Pump Depth (ft)	Purge Time (min)
50	400
100	120
150	90
200	50

\*Purge times based on 200 ml/min flow rate, full 5 LB. CO<sub>2</sub> cylinder; consult QED for more detail.

# Choose low-flow sampling methods for dramatic O&M cost reductions . . .

Low-flow sampling methods offer important advantages in sample quality and consistency, but the cost savings are substantial as well.

Using dedicated low-flow sampling equipment reduces labor costs, helps avoid resampling, eliminates field cleaning, and drastically reduces purge water handling.

The huge reductions in operating cost of a MicroPurge® system earn back the difference in capital expense in as little as 1 to 5 sampling events. Ongoing project costs are much lower than with any other sampling technology.

## Labor Savings

- Dedicated equipment saves 50% or more on labor – faster setup, fewer personnel required, no cleaning or decontamination.
- Shorter purge times cut labor costs even more.

## Purge Water Savings

- Cut purge water disposal cost up to 95% – at \$150-\$300 or more per barrel.
- Reduce purge water handling – no tanks, no heavy equipment, less operator exposure to potential contaminants.

## The Low-Flow Advantage

- Vs. Disposable Bailers
  - Save \$50, 605 over 5 years
  - Save \$392, 830 over 30 years
  - Payback – 1.30 years (5 events)
- Vs. Bailers/Portable Pumps
  - Save \$63, 490 over 5 years
  - Save \$438, 140 over 30 years
  - Payback – 0.76 years (3 events)

Based on – Well depth: 50 feet; Static water level: 20 feet; Well diameter: 2"; Number of wells: 10; Sampling events/yr.: 4.

## Analytical and other savings

- No decontamination or cleaning blanks required – eliminating a major laboratory expense.
- Greater sampling precision – reduced risk of being required to resample or go to Assessment Monitoring.
- Reliable bladder pumps, with a 10-Year Warranty, and no regular maintenance requirement.
- Low-flow methods extend well life by reducing sediment load on the filter pack and surrounding formation.

# . . . Choose the best equipment from the industry leader

MAKE SURE YOUR SUPPLIER MEETS THESE KEY CRITERIA	QED	Others
20 years or more experience supplying ground water sampling systems?	Yes	?
<u>Latest technology</u> with one touch electronic control, purge scan stabilization, automatic drawdown control?	Yes	No
Field support from trained, equipped local representatives in your area?	Yes	?
The industry's first 10-Year Standard Warranty on <u>all dedicated downwell equipment</u> ?	Yes	No
Digital controller with the simplest flow-rate control, plus auto recall of site data?	Yes	No
Pumps available in all-Teflon, all-PVC, Teflon/stainless, and all-stainless steel?	Yes	?
Special small-volume pumps available for low-yield wells?	Yes	?
Certified high flex life (200,000 cycles) PTFE bladders for years of uninterrupted service?	Yes	?
Systems designed to your well specs, tubing cut to specific lengths, order packaged complete with all components, ready to install?	Yes	?

# MP20 Flow Cell & Meter

PATENT PENDING



*Sample with confidence thanks to visible & audible stabilization alert with PurgeScan™ technology.*

## Simple, economical purge monitoring with automatic stabilization alert

The MicroPurge basics™ MP20 Flow Cell sets new standards in performance, size and price for purge water quality monitors. QED-exclusive PurgeScan™ technology (patent pending) signals when stabilization has been achieved for selected water quality parameters, with automatic storage of key data points.

The MP20 meter is designed expressly to simplify calibration and

operation in the field, by eliminating non-essential features. It displays all readings automatically and is lightweight and waterproof.

The compact sonde is a low-profile design with rugged, easy-to-service probes. The flow cell collects and vents gas bubbles effectively, and distributes purge flow evenly for quick response and more accurate readings. The whole package is protected by a 3-year warranty, backed

### MicroPurge® basics™ MP20 Flow Cell Advantages

- QED-exclusive PurgeScan™ signals when selected purge water quality parameters remain steady over successive readings, at user-defined intervals, automatically storing the readings.
- Transparent, molded flow cell effectively collects and vents bubbles, even in the horizontal position; low internal volume (175 ml), designed flow distribution and stirrer give fast response, even at low-flow purge rates.
- Three Year Warranty.
- Rugged, waterproof case doubles as a measurement and calibration workbench.
- Waterproof MP20 meter displays all readings automatically: pH, ORP, temperature, conductivity, and DO.
- The compact sonde attaches with a quick bayonet-type mount to the flow cell, calibration and storage cups.

by service and support from QED, the leader in low-flow sampling.

## MICROPURGE FLOW CELL SPECIFICATIONS

### SYSTEM SPECIFICATIONS:

Model No.:	MP20
Overall Dimensions:	18.5"x15"x6.5" (47x38x17 cm)
Overall Weight:	14 lbs (6.4 kg)
Storage:	100 Data Points
Stabilization:	Purge Scan™ Technology
Case Material:	Structural Resin
Keypad:	5 Keys

### METER SPECIFICATIONS:

Display Size:	3.5" (9 cm)
Weight:	2.1 lbs. (1 kg)
Memory:	100 Data Frames
Rating:	Waterproof NEMA 6 [IP67]
Power:	3 "C" batteries
Battery Life:	12 Hours
Temperature:	23 - 122°F (-5 - 50°C)
Cable:	6 foot (1.83 m)

### FLOW CELL SPECIFICATIONS:

Volume:	175 ml
Material:	Rigid urethane
Fitting Type:	Soft-tube "clamp-free"
Fitting Size(s):	Inlet: 1/4" I.D. x 3/8" O.D. Outlet: 3/8" I.D. x 1/2" O.D.
Venting Modes:	Horizontal and Vertical
Sonde Connection:	Bayonet-style Twist Mount

### SONDE SPECIFICATIONS:

Size:	3"x9" (8x23 cm)
Weight:	1.3 lbs (0.6 kg)

### TYPICAL SENSOR PERFORMANCE SPECIFICATIONS:

	Range	Accuracy	Resolution
Temperature	-5 - 50°C (23 - 122°F)	± 0.20°C (0.36°F)	0.01°C (0.018°F)
DO	0 to 20 mg/l	± 0.2 mg/l	0.01 mg/l
Specific Cond.	0-100 mS/cm	±1% of reading ± 1 count	4 Digits
pH	0 to 14 units	± 0.2 units	0.01 units
ORP	-999 to 999 mV	± 20 mV	1 mV
Salinity*	0 to 70 PSS	±1% of reading ± 1 count	0.01 PSS

\*Calculated

### PURGESCAN™ SPECIFICATIONS:

Parameter Stabilization range criteria:	pH- +/- .2 units DO- +/- 0.2 mg/l Conductivity- +/- 0.020 mS/cm ORP- +/- 20 millivolts
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Stabilization basis: 3 consecutive readings of selected parameters (one or more of above 4) within above limits, at time interval selected, from 1 to 9 minutes. For example, if 2 minutes is selected, then stabilization would be signaled when 3 consecutive 2-minute intervals showed in-range readings at the end of each interval, requiring 6 minutes.

Elapsed time since Purge Scan initiated shows at the bottom of the screen.

Full data sets are stored at time 0, every 5 minutes, and the 3 consecutive readings which satisfy the stabilization criteria.

# MP 30 Drawdown/Water Level Meter

PATENT PENDING



*Links to controller to prevent excessive drawdown during purging and sampling.*

## Drawdown control is now automatic with new low-flow water level meter

Limiting drawdown is one of the basics of MicroPurge® low-flow sampling. The MP30 Drawdown/Water Level Meter provides a new, simpler way to assure drawdown control.

The MP30 performs as a drawdown sensor and control when connected to the MicroPurge basics controllers, and as a high

quality water level meter. The MP30 switches between both modes.

For drawdown control the meter is turned to MicroPurge mode and the probe is lowered to the point of maximum drawdown. If purging lowers the water level to the selected point, a light and buzzer on the MP30 meter are activated

### MicroPurge® basics™ MP30 Drawdown Meter Advantages

- Provides unique MicroPurge Automatic Drawdown Control. Cable link to basics controller puts pumping on standby mode until the well recovers — automatically!
- MicroPurge drawdown mode includes light and buzzer indicators to alert sampling personnel when the selected maximum drawdown point has been reached.
- Standard water level mode includes conventional probe submergence light and buzzer indicators.
- Available with 150 or 300 foot (46 or 91 meter) chemical resistant polyethylene-coated tape.
- Compact 5/8" (16 mm) diameter probe fits narrow or crowded well casings.

and the controller is signaled to enter a standby mode until the water level rises again. A separate light indicates probe submergence in both modes.

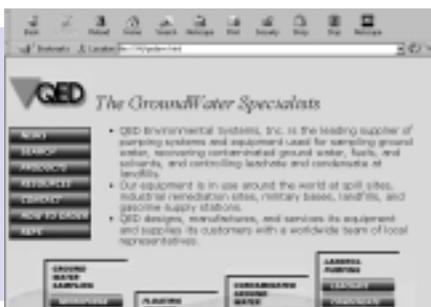
## MICROPURGE DRAWDOWN / WATER LEVEL METER SPECIFICATIONS

### SYSTEM SPECIFICATIONS:

Model No.:	MP30
Dimensions:	14" X 10 1/2" X 8" (37x27x20 cm)
Weight:	7 lb. (3.2 kg) w/150' tape 9 lb. (4 kg) w/300' tape
Probe Diameter:	5/8" O.D. (1.6 cm)

Probe Length:	7.5" (19 cm)
Carry Bag:	Optional
Connecting Cable:	Included
Well Hanger:	Included
Reel Brake:	Included

Power:	9 Volt battery
Battery Life:	30 - 40 hours
Tape Length:	150 or 300 Feet (46 or 91 m)
Operating Temperature:	-40 - 185°F (-40 - 85°C)



## www.qedenv.com

- The latest facts on new QED equipment
- The most up-to-date product specs
- Regulatory updates and industry trends
- Application assistance from the GroundWater Specialists

# MP40 Engine/Compressor



*Expand your sampling range with this versatile, full-powered compressed air source.*



## Compact, portable pneumatic power for purging and sampling

The rugged MicroPurge® basics™ MP40 Compressor cuts the weight and the part count of oil-less field compressors. The high quality compressor is directly coupled to a smooth-running Honda engine, eliminating the weight and complexity of pulleys, belts, and belt guards.

The MP40 compressor is mounted in a light weight aluminum

cage for easy carrying — only 48 pounds total weight!

A new hose reel option attaches to the compressor cage so that wells up to 200 feet away can be reached without having to move the compressor unit. An optional cart with high flotation wheelbarrow tires is also available for mounting the MP40 to reach more distant wells.

### MicroPurge® basics™ MP40 Compressor Advantages

- Direct coupled to 4.0 HP Honda engine for lighter weight, less vibration; high output compressor is premium long-life, oil-less.
- MP40 weighs just 45 pounds dry, 48 pounds filled with gasoline and oil.
- Lightweight aluminum cage protects the engine and compressor, and provides convenient lift handles and hose storage.
- Optional air hose reel mounts to the MP40 cage, allows wells up to 200 feet away to be reached without moving the compressor.
- Optional cart kit comes with 16-inch diameter, high flotation tires for easy travel over rough terrain.



**Model 3020 Electric Compressor**

### Oil-less electric compressor

The 3020 Compressor is a useful option for low-flow sampling of wells at depths to 100 feet. It runs on a 12 volt DC electrical supply, and can be connected to your vehicle's battery with the supplied cables, or driven by a separate power source.

Just 15x11x6-1/2" and 15 pounds, it offers an extremely convenient, portable pneumatic power choice for many sampling systems.

#### ELECTRIC COMPRESSOR SPECIFICATIONS

Model No.:	3020
Dimensions:	15 x 11 x 6.5" (38x28x17 cm)
Weight:	15 lbs. (7 kg)
Power Supply:	12 VDC (battery cable)
Max. Pressure:	100 PSI (6,895 kPa)
Rec. Max. Lift:	100 Feet (30 m)
Output:	0.21 SCFM @ 100 psi (0.357 m <sup>3</sup> /h @ 6,895 kPa)

### MICROPURGE COMPRESSOR SPECIFICATIONS

#### SYSTEM SPECIFICATIONS

Model No.:	MP40	
Overall Dimensions:	14" W x 18-1/4" L x 18.5" H (36x46x47 cm)	
Weight:	45 lbs (20.5 kg) dry; 48 lbs. (22 kg) filled w/ gasoline & oil	
Engine:	4.0 HP Honda	
Max. Pressure:	125 PSI (8,620 kPa)	
Max. Lift:	250 Feet (76 m)	
Output:	Through: (20 ft. [6 m] air hose)	(100 ft. [61 m] air hose)
0 psi (0 kPa)	7.0 CFM (11.9 m <sup>3</sup> /h)	
25 psi (1,725 kPa)	6.1 CFM (10.4 m <sup>3</sup> /h)	4.8 CFM (8.2 m <sup>3</sup> /h)
50 psi (3,450 kPa)	5.0 CFM (8.5 m <sup>3</sup> /h)	4.4 CFM (7.8 m <sup>3</sup> /h)
75 psi (5,170 kPa)	4.2 CFM (7.1 m <sup>3</sup> /h)	3.8 CFM (6.5 m <sup>3</sup> /h)
100 psi (6,895 kPa)	3.5 CFM (6.0 m <sup>3</sup> /h)	2.4 CFM (4.1 m <sup>3</sup> /h)
125 psi (8,620 kPa)	2.2 CFM (3.7 m <sup>3</sup> /h)	1.7 CFM (2.9 m <sup>3</sup> /h)
Compatible Controllers	MP10/MP15 or Model 400	

#### OPTIONS

Cart Kit	MP40-1
Hose Attachment (200 ft.)	MP40-2
Propane Conversion Kit	MP40-3

# MicroPurge Low-Clearance Well Caps

## Standard Cap

Standard low-clearance model includes compact self-storing MicroPurge discharge tubing and dust cover. Anodized aluminum caps fit 2" and 4" wells. Models for 1/4" and 3/8" discharge tubing available.

Model No.	Cap Size	Discharge
C24L	2" (5 cm)	1/4" (6 mm)
C26L	2" (5 cm)	3/8" (9 mm)
C44L	4" (10 cm)	1/4" (6 mm)
C46L	4" (10 cm)	3/8" (9 mm)

## Sealing Cap

Sealing low-clearance model includes compact self-storing MicroPurge discharge tubing. Anodized aluminum caps fit 2" and 4" wells. Models for 1/4" and 3/8" discharge tubing available.

Model No.	Cap Size	Discharge
C24S	2" (5 cm)	1/4" (6 mm)
C26S	2" (5 cm)	3/8" (9 mm)
C44S	4" (10 cm)	1/4" (6 mm)
C46S	4" (10 cm)	3/8" (9 mm)

## Custom Caps

QED makes many other sizes and styles of well caps to fit your project's needs. Please call 1-800-624-2026 for more information.



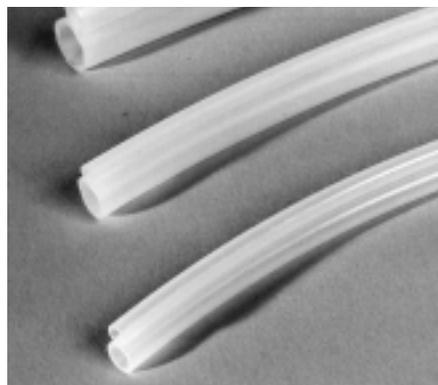
# Sample Pump Tubing

QED tubing innovations protect sample integrity while making system installation and operation easier and more economical.

## Twin-line simplicity

Our standard twin-line air supply/discharge tubing has a continuous heat-welded bond that saves time and hassle by preventing tangles or hangups during pump installation and maintenance, and avoids entanglement with portable water level meters or other equipment.

Tubing assemblies are cut to exact length and pre-assembled to well cap and pump per customer specifications at no extra cost. QED stocks the largest variety of discharge adapters, elbows, and couplers.



## Quality materials and samples

All tubing is controlled quality, virgin grade material. Economical Teflon-lined polyethylene tubing is the most frequently used, with Teflon on the inside of the sample tubing, where it's really needed.

Other choices include all-Teflon, polyethylene, and polypropylene (for deep-well use).

QED also stocks bulk tubing and many other sizes and materials; inquire for details.

## QED Tubing Advantages

- Hassle-free twin-line bonded tubing, not cable tied or loose.
- Systems are custom cut, pre-assembled, leak-tested, and poly-bagged for easy installation.
- Highest quality materials and true continuous lengths.

## SAMPLE TUBING SPECIFICATIONS

Model No.	Material	Maximum Pressure	Maximum Depth	Min. Bend Radius
<b>Air Supply: 1/4" O.D. (6 mm) Discharge: 3/8" O.D. (9 mm)</b>				
P5000	Polyethylene	300 psi (2070 kPa)	600' (183 m)	1.25" (3 cm)
PT5000	Teflon-lined PE	300 psi (2070 kPa)	600' (183 m)	1.25" (3 cm)
T5010	Teflon	300 psi (2070 kPa)	600' (183 m)	2.5" (6 cm)
PR5010	Polypropylene	300 psi (2070 kPa)	600' (183 m)	1.25" (3 cm)
<b>Air Supply: 1/4" O.D. (6 mm) Discharge: 1/2" (13 mm)</b>				
P5100	Polyethylene	200 psi (1380 kPa)	400' (122 m)	2.5" (6 cm)
PT5100	Teflon-lined PE	200 psi (1380 kPa)	400' (122 m)	2.5" (6 cm)
T5110	Teflon	240 psi (1650 kPa)	500' (153 m)	3.0" (7.5 cm)
PR5100	Polypropylene	300 psi (2070 kPa)	600' (183 m)	2.5" (6 cm)
<b>Air Supply: 1/4" O.D. (6 mm) Discharge: 1/4" (6 mm)</b>				
P5200	Polyethylene	300 psi (2070 kPa)	600' (183 m)	1.0" (2.5 cm)
PT5200	Teflon-lined PE	300 psi (2070 kPa)	600' (183 m)	1.0" (2.5 cm)
T5200	Teflon	300 psi (2070 kPa)	600' (183 m)	1.0" (2.5 cm)

Note: Polypropylene tubing is cable-tied, not heat-bonded.

Tubing I.D. is as follows: 1/4" (6 mm) O.D. = 0.17" (4.3 mm) I.D.; 3/8" (9 mm) O.D. = 0.25" (6 mm) I.D.; 1/2" (13 mm) O.D. = 0.375" (9 mm) I.D.

# QuickFilter® In-Line Filters: The Original In-Line Ground Water Filter

*Are you analyzing your samples — or your sample filters?*

QuickFilter® In-line Sample Filters from QED are the original disposable filter for ground water sampling. They provide fast field filtration without exposing samples to air or on-site contamination.

The advantages of QuickFilter use include:

- High-performance, premium membrane polyethersulfone increases filtration capacity.
- Capsules heat-sealed, not glued — for purity and performance under pressure.
- Clean Rinse<sup>SM</sup> — 100% tested to ultra-pure 5 megaohm resistance, to insure quality samples.
- Full rated surface area guarantees maximum capacity and performance.
- Always in stock — no back orders; guaranteed best value with the industry's lowest prices.

QuickFilter capsules attach directly to sample tubing for faster, more efficient sampling, with no setup or decontamination required. QED's Sample Transfer Vessel allows use with any type of sampling device.

If you use other filters for metals analysis, you could be risking the accuracy and consistency of your program data. A number of monitoring projects have traced false positives and other analytical errors to the use of "off-brand" filters.



## QuickFilter®

### QUICKFILTER SPECIFICATIONS

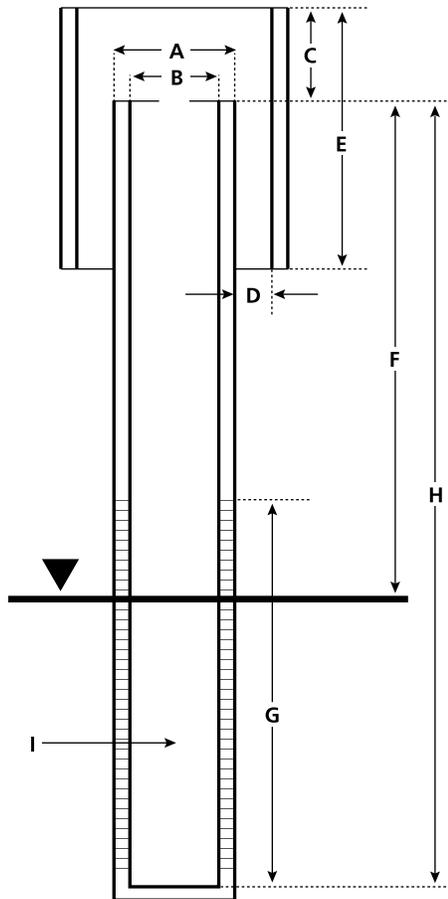
Model No.	Capacity	Area	Filter Material	Pore Size	Max Press.
<b>FF8100</b>	Standard	30 cm <sup>2</sup>	Polyethersulfone	0.45 microns	60 P.S.I.
<b>FF8101</b>	Standard	30 cm <sup>2</sup>	Polypro	1.00 microns	60 P.S.I.
<b>FF8200</b>	High	609 cm <sup>2</sup>	Polyethersulfone	0.45 microns	60 P.S.I.
<b>FF8201</b>	High	770 cm <sup>2</sup>	Polypro	1.00 microns	60 P.S.I.
<b>FF8205</b>	High	770 cm <sup>2</sup>	Polypro	5.00 microns	60 P.S.I.

**ACCESSORIES:** (Ordered separately) - **Model No. FF8500** - Sample transfer vessel with hand pump, **35780** - Transfer vessel stand, **8810** - Connector for 1/2" O.D. tubing, **8815** - Connector for 3/4" O.D. connector, **8820** - Connector for 1/4" O.D. tubing, **8825** - Connector for 3/4" O.D. connector.

#### TRANSFER VESSEL SPECIFICATIONS:

**Model No.:** FF8500; **Volume:** 1100 ml; **Ht.:** 12.63"; **O.D.:** 5.25"; **Wt.:** 3 lbs.; **Cap Material:** Polypro; **Reservoir Material:** Styrene-Acrylonitrile; **Max Press.** 125 P.S.I.

# Dedicated Sampling Design



STANDARD CASING DIMENSIONS				
Nominal Pipe Sizes (Inches)	Schedule 40 O.D.	Schedule 40 I.D.	Schedule 80 O.D.	Schedule 80 I.D.
2	2.375	2.049	2.375	1.913
2 1/2	2.875	2.445	2.875	2.289
3	3.500	3.042	3.500	2.864
3 1/2	4.000	3.520	4.000	3.326
4	4.500	3.998	4.500	3.786
5	5.563	5.017	5.563	4.767
6	6.625	6.031	6.625	5.709

## Sampling Design Data

Site \_\_\_\_\_

Location \_\_\_\_\_

Date \_\_\_\_\_ Well Purge Volumes Required \_\_\_\_\_  MicroPurge

Sampling Parameters \_\_\_\_\_

(Metals, Low Level Organics, etc. \_\_\_\_\_)

Well Bottom to Pump Intake Distance \_\_\_\_\_

Casing Material \_\_\_\_\_

Pump Material Preference \_\_\_\_\_

Pump Tubing Material Preference \_\_\_\_\_

## Optional Cost Analysis Information

Current Sampling Method \_\_\_\_\_

Frequency of Events (Quarterly, Yearly, etc.) \_\_\_\_\_

No. of Persons in Sampling Crew \_\_\_\_\_

Man Hours to Purge, Sample and Clean \_\_\_\_\_

Hourly Labor Rate Assumed \_\_\_\_\_

No. of Cleaning Blanks Per Event \_\_\_\_\_ Blank Cost \_\_\_\_\_

A. Well Casing Diameter – O.D.								
B. Well Casing Diameter – I.D.								
C. Clearance from the Top of Well Casing to the Top of Outer Casing / Vault								
D. Clearance of Outer Casing / Vault Depth								
E. Outer Casing / Vault Depth								
F. Depth to Top of Static Water								
G. Screen Length								
H. Depth of Well								
I. Water Yield (G.P.M.)								

***Innovative product engineering and complete customer service make QED the leading supplier of environmental equipment.***



**Portable Ground Water Sampling**  
The first portable MicroPurge® pumps for low-flow sampling



**Low-Flow Ground Water Sampling Control Equipment**  
The only complete low-flow sampling system  
U.S. Patent No. 4,585,060 and 4,489,779

**WELL WIZARD®**

**Dedicated Ground Water Sampling**  
The leading dedicated bladder pumps since 1982

**QuickFilter®**

**Ground Water Sample Filtration**  
The original in-line disposable field filters

**HYDROPUNCH®**

**Direct Push Sampling**  
The original rugged device for sampling without wells  
U.S. Patent No. 5,146,998



**In-Well LNAPL Cleanup**  
Product-only floating hydrocarbon recovery — without water  
Patent Pending



**High Performance Automatic Pumps**  
Ground water cleanup and landfill leachate/condensate pumping to 15 GPM  
U.S. Patent No. 5,358,037

**SOLO II**

**Economical Automatic Pumps**  
Proven reliable automatic cleanup and landfill leachate/condensate pumping  
U.S. Patent No. 5,141,404



**Cleanup – LNAPL, DNAPL, Water**  
Complete family of reliable pneumatic pumps for demanding applications

**E-Z Tray™**

**VOC Removal from Water**  
High-efficiency, low O&M removable tray air strippers  
U.S. Patent No. 5,518,668

**E-Z Stacker™**

**VOC Removal from Water**  
Economical stacking air strippers