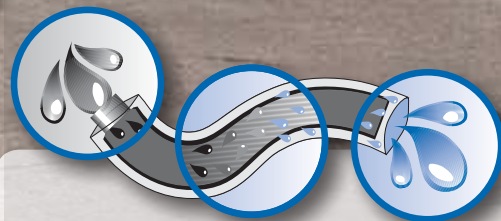


Pure[®]

FILTER SOCK

From dirty to clean
in one easy process



- Cleans contaminated water as it's being pumped away
 - Reduces use of vacuum trucks
 - Reduces carbon footprint
 - Reduces risk of pollution
 - Portable, reusable and recyclable parts
- It's as simple as that.

Available through



Southwater
DREDGING & WATER TREATMENT

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A product by

Pure[®]
Filter Solutions

Pure[®] FILTER SOCK

PURE[®] Filter Sock is an innovative filtration system with significant economic and environmental benefits.

Our Pure[®] Filter Sock is the most simple and economical way of dealing with contaminated water being pumped out of manholes, vaults, sumps, retention ponds, ditches and more. It uses multi-stage filtration to remove oil sheen to non-detectable levels and shows an average 99% TSS removal of particles 1 micron and above.



Good for your business and good for the environment

Using our PURE[®] Filter Sock means that you don't have to take contaminated water away by vacuum truck for cleaning elsewhere. It also means that you can avoid releasing contaminated water into the environment. Offering both cost savings and a way of reducing vacuum truck usage and pollution risks, our PURE[®] Filter Socks are especially attractive to companies looking to meet environmental requirements without incurring burdensome disposal costs.

PURE[®] Filter Sock technical features

We offer two types of filters:

- **PURE[®] Filter Sock** : designed to remove oil sheen and capture particles down to 1 micron.
- **PURE[®] Filter Sock AC (Activated Carbon)** : Designed to removed oil sheen and low molecular weight organics (hydrocarbons and/or aromatics: e.g. Diesel, BTEX) at low concentrations and to capture particles down to sub-micron levels.

Our PURE[®] Filter Sock technology consists of an innovative , multi-layered filtration system contained in a flow-directing, recyclable polytubing bag. It is designed to optimize filtration without reducing flow rates.

Every PURE[®] Filter Sock comes with full instructions and is easy to operate. It can be moved around the site as needed. It rolls out and can be used multiple times until the filter is full. It is then rolled up and sealed in an easy-to-store polytubing bag or bucket.

Depending on the size of the filter, all of our PURE[™] Filter Socks are supplied with cam-lock hose connectors ranging in size from 1.5", 2", 2.5" & 3" male and female. Our fittings are easily inter-changed between filters, ensuring instant compatibility for all pump sizes listed above. Our fittings may be retained and used on future pump-outs. PURE[®] Filter Sock is designed to filter low levels of contamination.

Independent performance test results

Full-Scale independent tests have validated the efficiency of our PURE[®] Filter Sock for both oil sheen and sediment removal.

Tests were carried out in 2010 in the USA by the independent laboratory, TRI Environmental Inc. Further tests were conducted in October 2011 by the independent testing house, Webs Ltd, with results analysed by Severn Trent Laboratories under the UKAS and MCERTS schemes.

These tests were designed to simulate the pumping of sediment and hydrocarbon-laden water from underground chambers through a portable filter system in order to remove most sediments and oils prior to discharging the filtered water.

Testing objectives

The objectives of the trials were to establish the retention levels of oil and suspended solids and the quality of the filtered effluent from the filter system when filtering water contaminated with a pre-determined level of hydrocarbons and sediment.

Testing Methodology for our PURE[®] Filter Sock

A 1,000 gallon tank was filled with tap water. The water was mixed with sediment and oil and pumped through our PURE[®] Filter Sock using a 2" trash pump. The amount of oil and sediment used is outlined in the charts opposite this page.

Testing Methodology for our PURE[®] AC Filter Sock

An IBC (1,000 litres) was filled with tap water. The water was mixed with topsoil and diesel and pumped through our PURE[®] Filter Sock using a submersible pump placed in the IBC. The amount of topsoil and diesel is outlined in the charts opposite this page.

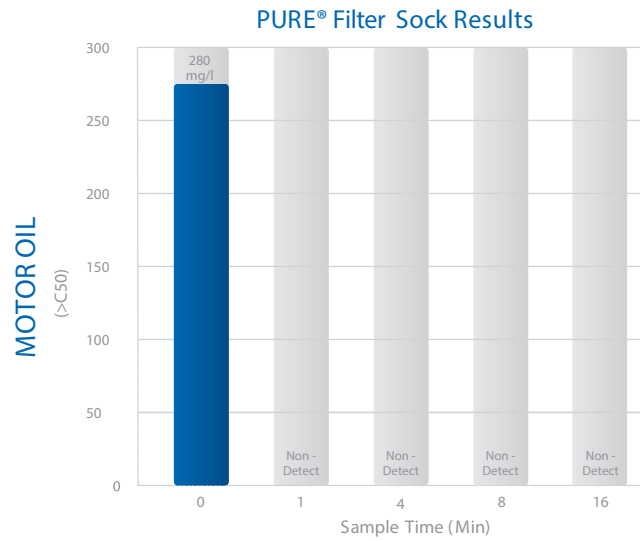
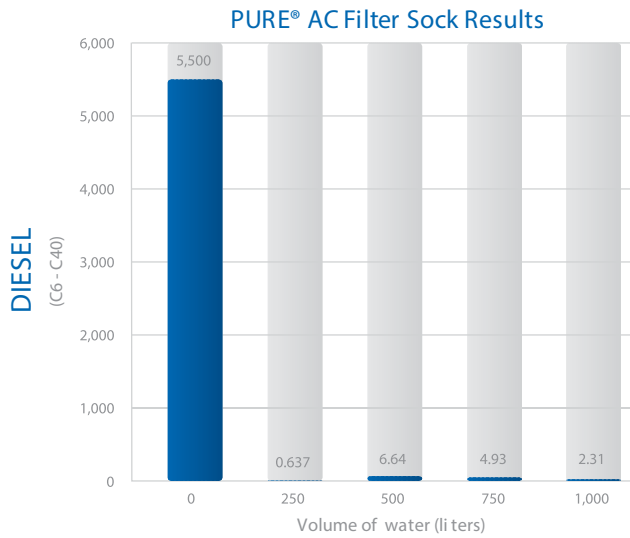
Results: hydrocarbon efficiency

Our PURE® Filter Sock removed the oil to a non-detectable level as seen in the chart to the right. Our PURE® AC Filter Sock achieved a 99.9% diesel removal efficiency as seen in the chart below.



Hydrocarbon test results

The results show that our PURE® Filter Socks are highly effective systems for hydrocarbon removal.



Results: sediment removal efficiency

The regulatory goal for sediment removal efficiency is typically 80%. Anything above that is considered excellent. As shown below, our PURE® Filter sock and PURE® AC Filter Sock far exceeds the regulatory goal, with the average removal for the test being 99%.

Sediment test results

Three tests (1, 2 & 3) were run using different sediments:

Test 1: Sil-Co-Sil 106 sediment was used. (Run for 32 min, @ 10 PSI)

Test 2: Cinder Clay sediment was used. (Run for 10 min, @ 3 PSI)

Test 3: Top soil/Sand/Foundry was used as the sediment. (Run for 60 min, @ 10 PSI)

Each blend provides a wide range of particle size distribution, which closely represents actual sediments found in a manhole and a vault. Samples taken throughout the testing were analysed for TSS to determine the Filter's sediment removal efficiency.



Test 1 : Sil-Co-Sil 106	
TSS EPA Testing method 106.2	
TSS of 2274 Mg/L unfiltered (with 260MG/L used oil)	
Sample Time (minutes)	% Removal
1	99.84
2	98.36
4	99.60
8	99.45
15	98.73
32	98.10

Test 2 : Cinder Clay	
TSS EPA Testing method 106.2	
TSS of 1900 Mg/L unfiltered (with 300MG/L used oil)	
Sample Time (minutes)	% Removal
1	100.00
2	100.00
3	100.00
4	100.00
5	100.00
6	100.00
7	100.00
8	100.00
9	100.00
10	100.00

Test 3 : Top Soil/Sand/Foundry	
TSS EPA Testing method 106.2	
TSS of 2700 Mg/L unfiltered	
Sample Time (minutes)	% Removal
5	99.99
10	99.99
15	99.99
30	99.99
45	99.99
60	99.99

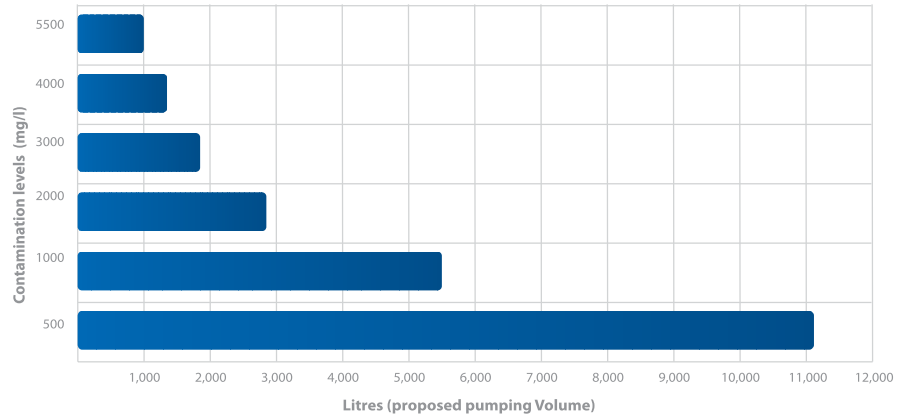
The tests confirm that our filter removes solids down to 1 micron with an average of 99% efficiency.

Volume usage

The chart indicates the probable volume that will be filtered efficiently through the PURE® Filter Sock AC system.

The additional factors to be considered in calculating the likely volume are:

- Type of Hydrocarbon
- TSS levels (silt aids the hydrocarbon filtration process)
- Pumping flow rate
- Placement of pump



Note: Light Oils with a retention level of 3.3 litres of oil

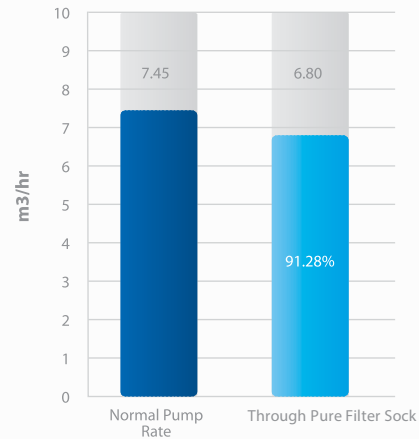
Testing above conducted with Diesel.

Pumped flow rates

During the independent test the flow rate was measured to quantify the reduction in rate. The flow rate for the pumped effluent was measured by recording the time it took for the water level to drop in the IBC.

The free flow rate for the pump, with no filter attached, was measured at 7.45 m3/hr. The flow rate when the filter was attached was up to 6.85 m3/hr.

These tests confirm that PURE® Filter Sock has a high flow rate and does not impede the pumping process.



PURE® Filter Sock is an innovative filtration system with significant economic and environmental benefits.

- Portable, simple and quick
- Reusable and recyclable parts
- Reduces use of vacuum trucks
- Reduces carbon footprint
- Reduces risk of pollution
- Versatile solution for de-watering many holding systems:
 - manholes and vaults
 - sumps and bunds
 - ponds and ditches
 - separators (interceptors)
 - and more



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