

# WEST COAST FILTERS INC.

## Design, Manufacture & Distribution of Water Purification Equipment

### Filter Operating Instructions

The following is a general guide for the operation of pressure filters. This is supplied for reference only as most filter operations are best determined in the field.

Under normal conditions the following flow rates should be adhered to as closely as possible:

Media	Filtration rates	Backwash Rates
Multi-media filters	2 - 4 GPM / Sq. Ft. of Surface Area	12-15 USGPM / Sq. Ft.
Greensand filters	1 - 2 GPM / Sq. Ft. of Surface Area	12-15 USGPM / Sq. Ft.
Pyrolusite filters	4 - 8 GPM / Sq. Ft. of Surface Area	25-30 USGPM / Sq. Ft.
Activated Carbon	1 -2 GPM / Cubic foot of media	6 – 8 USGPM / Sq. Ft.

Operation of a filter system is dependent on numerous local conditions. Every situation is unique as each water supply has individual characteristics.

The following guide may be utilized to determine the requirement for the backwashing multi-media & greensand filters.

- a) When the pressure differential reaches 8 - 10 PSID
- b) When the effluent quality exceeds normal tolerances

Under normal operating conditions the filters should not be allowed to exceed a pressure differential of more than 12 PSID. Operating the filters beyond this range will cause penetration and breakthrough by the contaminant being removed. It is also possible to cause damage to greensand media if the pressure differential is high. The media has a tendency to fracture and fines may be forced deep into the bed.

Sample screens located at strategic locations on the side-shell of your vessel will assist in determining the quality of the effluent at different levels of the media. These should be utilized to determine the performance of the filter media. They will also assist in determining the requirement for backwashing.

It is advisable to follow the media manufacturers guidelines as close as possible. When using manganese greensand as a media it is important to always maintain a residual of potassium permanganate at the filter media surface to avoid stripping of the manganese coating from the media. This may be best determined by the presence of a slight pink tinge to the water at this point. The media may not remove an excess feed rate of potassium permanganate and care should be taken to avoid this situation, as a pink color water will be noticed in the effluent.

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If the air scour cycle is utilized in the backwash mode it is normally operates at 1.5 SCFM / Sq. Ft. of filter area at 5 - 6 PSIG. This cycle should be utilized for 2 - 3 minutes. After the air scour cycle has occurred it is a good practice to allow the filter to stand idle for 2 -3 minutes to allow the air to rise in the bed. The next cycle is the backwash cycle. If a low backwash cycle is not incorporated into your system you should BW initially at a low rate (4 USGPM) for 2 - 3 minutes to remove any air without losing any media to the drain.

Normal BW rates may then be followed for approximately 8 - 12 minutes depending upon the condition of the media. At the end of the BW cycle it is advisable to slowly close the BW supply valve to allow the media bed to settle uniformly and stratify itself.

Following the BW cycle the filter should be rinsed to waste for 2-3 minutes at nominal filtration rates to remove any trace particles in the media and to ensure that the filter media is conditioned for the next filter run.

For guidelines in the operation of our automatic filter systems and assistance with electronic or programmable systems please refer to the individual owners guide or consult your representative.

### **Warning:**

**Activated carbon in the moist form will absorb oxygen. Do not enter a confined space containing activated carbon without utilizing proper breathing apparatus, adequate safety equipment and responsible supervision!!**