Case Studies: Manganese removal systems in BC & Yukon

Deanne Mould, BA
Marketing Coordinator & Technical Writer-Manuals
No longer an Aesthetic Objective but a MAC 0.12 mg/L (120 µg/L) for manganese in drinking water.

The MAC is intended to protect all Canadians, and is based on the most vulnerable/sensitive population (e.g. infants and young children).
Brent Kennedy Elementary School
South Slocan, Kootenays
Port Clements, Haida Gwaii
30” filters – Train A - Backwash flow rate is restricted to 60 usgpm

Media bed D:
Type: Anthracite
Qty req’d: 2.5 cu ft (approx.)
Height: 6 inches (150 mm)

Pour enough for 8” of media height

Media bed C:
Type: Greensand Plus
Qty req’d: 11 cu ft (approx.)
Height: 27 inches (686 mm)

Pour enough for 27” of media height

Media Bed B:
Type: Fine Gravel 1/4 x 1/8
Qty req’d: 1.5 cu ft (approx.)
Height: 4 inches

Pour enough gravel to add 4 inches of cover

Media Bed A:
Type: Coarse Gravel 1/2 x 1/4
Qty req’d: 2 cu ft (approx.)
Height: 8 inches

Pour enough gravel to **fully cover the laterals.**
Mill Bay, Vancouver Island
Myrtle Pond Powell River
Manganese Pilot Skid
GreensandPlus filter vessel, control panel, chlorine injection, backwash tank

Space required: 24" x 50" x 72" tall.
Backwash tank if required: 48" dia x 80" tall
Power needed: 115 volt, single phase, 15 amp
Cost to rent: $1000/mo.
## Langelier Saturation Index

<table>
<thead>
<tr>
<th>pH</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temp (F)</td>
<td>70</td>
</tr>
<tr>
<td>Temp (C)</td>
<td></td>
</tr>
<tr>
<td>Alkalinity (mg/L CaCO3)</td>
<td>100</td>
</tr>
<tr>
<td>Calcium hardness (mg/L CaCO3)</td>
<td>220</td>
</tr>
<tr>
<td>Calculated Langelier Index</td>
<td>0.30</td>
</tr>
</tbody>
</table>

### Test Results Meaning

- A tolerance of -0.3 to +0.3 is the ideal range for swimming pools
- A tolerance of -0.5 to +0.5 is acceptable for swimming pools
- A Saturation Index of higher than +0.5 indicates carbonate scale formation.
- A Saturation Index of lower than -0.5 indicates corrosive water.
Thank you!

Deanne Mould
deannem@bipurewater.com