**Section 604.610 Rapid Rate Pressure Filters**

a) Pressure filters must not be used in the filtration of surface water, groundwater under the direct influence of surface water, or water treated by lime soda softening.

b) The rate of filtration must not exceed 4 gal/min/ft2 of filter area unless otherwise approved by the Agency under Section 604.145(b).

c) Minimum criteria at Section 604.605(e) and (g) relative to structural details, hydraulics, and filter media provided for rapid rate gravity filters also apply to pressure filters when appropriate.

d) Number

1) A minimum of two units must be provided. Each unit must be capable of meeting the plant design capacity or the projected maximum daily demand at the approved filtration rate.

2) When more than two filter units are provided, the filters must be capable of meeting the plant design capacity at the approved filtration rate with one filter removed from service.

e) Rapid rate pressure filters must be designed to provide for the following:

1) loss of head gauges on the inlet and outlet pipes of each battery of filters;

2) an easily readable meter or flow indicator on each battery of filters;

3) filtration and backwashing of each filter individually;

4) minimum sidewall shell height of 5 feet, unless otherwise approved by the Agency under Section 604.145(b);

5) the top of the washwater collectors at least 18 inches above the surface of the media;

6) an underdrain system to collect the filtered water and to uniformly distribute the backwash water at a rate not less than 15 gal/min/ft2 of filter area;

7) backwash flow indicators and controls that are readable while operating the control valves;

8) an air release valve on the highest point of each filter;

9) when the filter exceeds 36 inches in diameter, a manhole at least 24 inches in diameter;

10) means of observing backwash discharge water; and

11) a six inch or larger air gap, or other Agency approved cross connection control measure.

f) Rapid rate pressure filters should have a flow indicator on each filtering unit.