

Technical Service Bulletin

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Sludge Volume Test (SV30)

This Technical Service Bulletin provides information on how to perform a 30 minute sludge volume test (SV30) to qualitatively check sludge quality in a HYDRAsub[®]-MBR system. This measurement is used to calculate the sludge volume index (SVI), which gives a more quantitative value for defining sludge settling characteristics. The calculation of SVI is done in the Analytical Data (Input) Sheet (refer to TSB407).

Required Equipment:

- 1- 1L graduated cylinder
- Stopwatch

Directions:

1. Fill the graduated cylinder with 250 mL of sludge from the membrane tank and add 750 mL of tap water to dilute. This gives a sludge dilution factor of 4.
2. Begin the stopwatch and let the sample sit for 30 minutes.
3. After time is up, record the amount of sludge (in milliliters) that has settled. This can be recorded in the Process Data Sheet (Input) as SV30 (mL/L).



Figure 1. SV30 test set-up



Figure 2. SV30 test results

4. If the volume of sludge that settles is outside the range of 150-300 mL, dilution factors may need to be adjusted. If it is below this range, the dilution should be decreased to two or three times. If it settles above this range, the dilution factor should be increased until the target range is achieved.
5. Check the turbidity of the supernatant (water above settled sludge) for comparison purposes. A higher turbidity from one day relative to another may signify less flocculation of the sludge and therefore higher fouling potential. It is not recommended to increase the flux if an increasing trend is seen in this value.
6. The SV30 and dilution factor results are used in calculating the sludge volume index (SVI). This calculation is automatically done in the Analytical Data (Input) Sheet (refer to TSB408) in the MBR Data Sheets (please contact Hydranautics for this file) when the SV30 and dilution factor values are input.

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