

	<p style="text-align: center;"><b>Standard Operating Procedure</b></p> 	Effective Date:	Version:
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## Standard Operation Procedure – Sludge Volume Index for Faecal Sludge

### 1. Scope and Application

- Sludge Volume Index (SVI) is an indication of the sludge settleability in the final clarifier.
- It is a useful test that indicates changes in the sludge settling characteristics and quality.
- By definition, the SVI is the volume of settled sludge in millilitres occupied by 1 gram of dry sludge solids after 30 minutes of settling in a 1000 ml graduated cylinder or a settleometer.

### 2. Apparatus

- 1L graduated cylinder
- Stop watch
- Four – place Analytical Balance
- 50ml capacity evaporating porcelain crucibles
- Desiccator

### 3. Safety Precautions

- Always use safety goggles, gloves and laboratory coat while working in laboratory
- Wear gloves suitable for withstanding high temperatures when removing crucibles from the oven.
- After the analysis clean bottles and beakers with clear water keep it for drying
- Dispose the used gloves after completion of analysis
- Clean the hands using antiseptic soap
- Disinfect hands after washing with soap
- Avoid spillage and contact with skin. In the latter case use copious washings with cold water and call for medical attention.

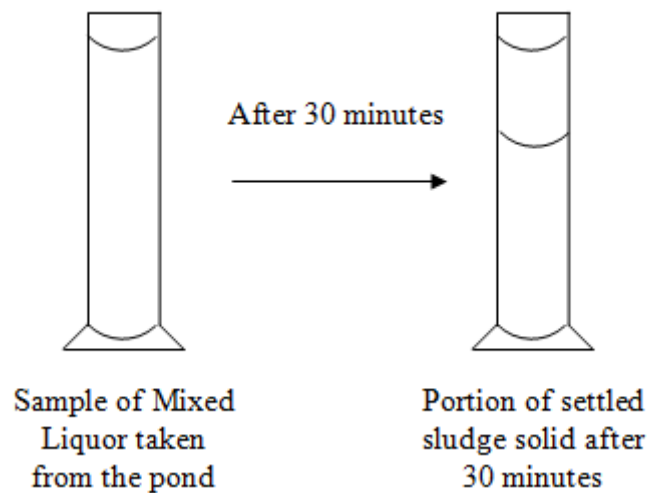
#### 4. Procedure

- Determine the suspended solids concentration of a well-mixed sample of the suspension (do the suspended solids test). See **Total solids SOP**.
- Determine the 30 min settled sludge volume as follows:

#### 5. Sampling Preparation

##### Preparing a mixed liquor

- Measure out sludge.
- Place sludge in volumetric flask and top up to 1L.
- Mix well.
- Place solution in graduated cylinder until the 1L marking.
- Allow it to settle for 30 minutes.
- After the time period, read the marking to determine the volume occupied by the settled sludge and the reading is expressed in terms of mL/L and this figure is known as the SV value.



**Figure 1:** Experimental set-up

#### 6. Calculation

- Calculate the settled sludge volume as follows:

$$SVI (mg/ml) = \frac{\text{settled sludge volume (ml/L)} \cdot 1000}{\text{suspended solids (mg/L)}}$$

## 7. References

1. [http://www.epa.ie/downloads/advice/water/wastewater/epa\\_water\\_%20treatment\\_manual\\_primary\\_secondary\\_tertiary1.pdf](http://www.epa.ie/downloads/advice/water/wastewater/epa_water_%20treatment_manual_primary_secondary_tertiary1.pdf)
2. <http://www.wastewatersystem.net/2010/10/correlation-between-sludge-volume-index.html>
3. [http://www.norweco.com/html/lab/test\\_methods/2710cfp.htm](http://www.norweco.com/html/lab/test_methods/2710cfp.htm)

### APPROVAL OF STANDARD OPERATING PROCEDURE

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