NAME OF THE INSTRUMENT: OPEN PAN EVAPORIMETER

➢ EVAPORATION:

- The physical process by which any liquid escape from the surface into the atmosphere in gaseous state is called **evaporation.**

➢ PURPOSE OF MEASUREMENT:

- The standard United States Weather Bureau (USWB) Class-A open pan evaporimeter is most commonly used to measure **evaporation** from free water surface.

➢ UNIT OF EVAPORATION:

- Millimeter

➢ LEAST COUNT:

- 0.1 mm

➢ TIME OF OBSERVATIONS:

- 08:30 hrs & 14:18 hrs

➢ DETAILS OF EQUIPMENT:

- It consists of a 120.7 cm diameter and 25.4 cm deep pan made of 20 gauge galvanized iron sheet with a stilling well of size 10 cm diameter and 30 cm height placed within the tank.
- A vertical pointer is provided in the stilling well to show the level of water maintained in the pan.
- Its purpose is to isolate a small portion of the water surface in the tank so that it is not disturbed by waves produced by wind.
- Three small holes are located at the bottom of the well to permit the flow of water in and out of the well.
- The pan is painted white and is placed on a wooden frame so that air may circulate beneath the pan.
- A measuring cylinder is used to measure the evaporation rate.
- The cross-sectional area of the measuring cylinder is exactly 1/100 of the area of evaporation pan.
- The scale from 0 to 20 cm is engraved inside it along the height and the graduation runs from top to bottom in ascending order.
- One full cylinder of water raises 2 mm height in the pan.

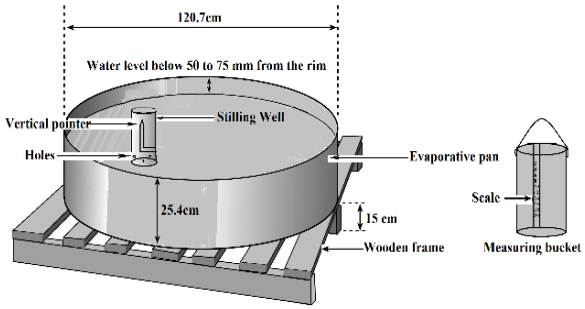

Fig: Components of Class A pan Evaporimeter

➢ MEASURING PROCEDURE:

- When there is no rainfall, add measured amount of water into the tank by the measuring cylinder up to the tip of the fixed point of the gauge. Evaporation rate (mm) will be equal to water added (mm) to the evaporation pan.
  E = Number of measuring cylinders of water added to the tank X 2
- On a rainy day, for example, if water added is 3 mm and rainfall is 5 mm, evaporation will be 8 mm
  E = rainfall, i.e. 3 mm + water added, i.e. 5 mm

➢ PRECAUTIONS:

- If the rainfall is heavy, water must be removed from the tank with measuring cylinder. Difference between the actual rainfall of the previous day and water removed from the tank gives the evaporation rate. For example, if rainfall is 20 mm and water removed is 10 mm then the rate of evaporation will be 10 mm.
- If there is very heavy rainfall, the tank overflows and evaporation value cannot be obtained. The message overflow or excess rainfall is written in the weather report.