



MEASURING THE WATER  
CONTENT OF SNOW  
BY WEIGHT

# Calibration

Weigh your outer-tube  
Without anything in it.

Looks like it weighs  
452.2 gms without  
water



# Calibration

Next prepare the inner-tube with exactly 1.00" of water.

Now pour the water into the larger tube



# Calibration

Now weigh the outer-tube with exactly 1.00" of water inside it.

The result with this particular tube is 653.0g



# Calibration

Subtract the original weight of the outer-tube (452.2g)  
From your measurement (653.0g) to find the weight  
of the “one inch of water”:

$$\begin{array}{r} 653.0\text{g (outer-tube \& 1.00" of water)} \\ - 452.2\text{g (outer-tube)} \\ \hline 200.8\text{g per inch of water} \end{array}$$

**1.00” of water = 201g**

**0.01” of water = 2g**

# Snow Core



Take a snow core with the outer-tube of your gauge off of your snowboard for the snow water equivalent (SWE) of newly fallen snow. Take another snow core off the ground to determine the (SWE) of snow cover on the ground.

# Weighing your snow sample

Now weigh your snow core in the tube



(for our example we will just weigh the snow core sample off our snow board)

# Weighing your snow sample

This one  
weighs 624.2g





# Weighing your snow sample

Subtract out the weight of the outer-tube.

624.2g (outer-tube & snow core)  
- 452.2g (outer-tube)  
**172.0g weight of snow core**



# Weighing your snow sample

Previous finding: 1.00" of water = 201g

Finally divide the weight of the snow (172.0g) by (201g) to convert weight to depth.

$$\frac{172.0\text{g}}{201\text{g/inch}} = 0.86 \text{ inches of water}$$



# Snow Water Equivalent (SWE)

*“The depth of water that would result from the melting of a snow sample”*

- AMS Glossary of Meteorology



# Reporting (SWE)

**Data Entry : Daily Precipitation Report Form**

**Precipitation Report Form** Submit Data Reset

Station Number : CO-LR-284

Station Name : FCL 3.0 W

\* Denotes Required Field

12/11/2009 \* **Observation Date** ?

7:00 AM \* **Observation Time** ?

0.86 \* **Rain and Melted Snow to the nearest hundredth inch that has fallen in the gauge during the past 24 hours** ?

Yes  No **Report was taken at registered location?**

**Observation Notes:** (This will be available to the public) ?

Ground bare yesterday. Eleven inches of new snow overnight. Core taken of new snow resulted in 0.86" SWE

**New Snowfall**

11.0 **Accumulation of new snow in inches to the nearest tenth** ?

#1 0.86 **Melted value from core to the nearest hundredth** ?

**Total Snow and Ice on Ground at Observation Time**

11.0 **Depth of total snow and ice (new and old) in inches to the nearest half inch** ?

#2 0.86 **Melted value from core to the nearest hundredth** ?

For new snowfall report SWE in box #1. Box #2 for SWE of total snow on the ground.