SNOW STUCK ON THE RIM OF THE GAUGE

FORT COLLINS, CO — Sunday, March 19, 2006

If you don't like reading about snow and how to measure it, then don't bother. If you do, or if you're being challenged by measuring wet snow, then read on.

Dealing with snow on the rim of your gauge.

Some of us (especially here around Fort Collins) woke to find several inches of snow stuck to the rim or our gauges this morning. More of you will encounter the same thing tomorrow (Monday). How much of that new snow on the rim should go into the sample to be melted? and how much should just be knocked away? We never know for sure but we need to be prepared to deal with this when it happens in a consistent manner.

As convenient and accurate as our 4" diameter, 12" deep CoCoRaHS rain gauges usually are, when it comes to wet sticky snow, they leave a bit to be desired. That's one of the reasons why the National Weather Service uses an 8" diameter gauge for official weather stations. The larger the diameter, the less the potential inconsistencies from rim accumulation.

That's also why some "fancy" gauges are equipped with a heating element to melt the snow that lands on the rim. Unfortunately, this is difficult too. Any gauge with a heater runs the risk of sublimating some of the precipitation back into the air without first measuring its water content.

Only the snow that lands inside the 4" diameter rim should go into the sample and the rest should be knocked away. I used my CoCoRaHS snow swatter this morning to quickly push the snow on the rim straight down so that whatever was inside that rim went in and the rest fell out. I had two separate gauges and both came up with the same answer -- 0.51" of water content, so I felt pretty good about the numbers.

Fortunately, wet snows are easy to get a good core sample as the snow often stays in one concise plug. My core sample water content this AM was a few hundredths less than my gauge water content, but that makes sense since the first part of the precipitation fell as rain and melting snow.

Another trick is simply to not let the snow build up on the rim of the gauge. If you see snow accumulating on the rim, go out with a flat surface and push it gently but firmly straight down from above the gauge until it rests on the rim. Hopefully, the snow that landed inside the rim will go into the gauge and the rest will fall out.

One thing you definitely want to avoid is pushing all the snow from the rim of the gauge inside. If you do knock all the snow from the rim into the gauge, this pretty

much guarantees an exaggeration of the water content. Look at the beveled rim of the gauge, and you will see that most of the rim where snow begins to accumulation is outside of the 4" diameter collection area so that snow does NOT belong in the sample (which is why they bevel the rim to begin with).

Back to Spring

Sorry to bother you with these snowy details. Those of you in southern New Mexico and Texas are probably just chuckling, but in your own way you're probably wishing you had just gotten 0.51" of water content -- even if it was snow. Tomorrow is the first day of spring, and soon we'll put this white stuff behind us for another season. But for now, deal with it as best you can -- and enjoy the moisture.

Nolan