Directions for NWC Sensor Calibrations

1. Email Chris Fiebrich from the Mesonet
   1. His email is [chris@mesonet.org](mailto:chris@mesonet.org)
   2. An example of an email can look like this:

Dr. Fiebrich,

My name is \_\_\_\_\_ and I am working with Dr. Chilson on project CLOUD-MAP. I was planning on taking measurements in the aspirated chambers at the NWC Mesonet tower from around \_\_\_ to \_\_\_ today if this was okay with you.

Thank you!

1. Before starting the calibration
   1. Open the windsond program on the laptop (should be on the home screen)
   2. Connect the antenna to the usb and plug the usb into the laptop
      1. Roll down the car window slightly and run the antenna out of the window and place it on the top of the car roof
      2. Make sure you lock the car after placing everything as the laptop will be sitting on the seat
   3. Insert the battery into windsond sensor
      1. Make sure that the prongs on the sensor body line up with the holes on the battery when connecting it
2. Putting the sensors in the aspirated chambers
   1. Measure a piece of electrical tape with the aspirated chamber so that it is long enough to wrap around the bottom of the sensor and attach to either side of the aspirated chamber
   2. Turn on the sensor right before placing it in the chamber
   3. Place the sensor in the chamber
      1. Make sure to secure the tape well on either side of the chamber
      2. Make note of which sensor goes in which aspirated chamber (left and right). I always put the lowest numbered sensor in the left aspirated chamber, but this doesn’t always have to be the case
3. On the laptop
   1. After the sensors are turned on, the sensor logging screen will appear on the laptop
   2. Under the tab “\_\_\_”, the height ASL must be manually changed to the appropriate height as the GPS is unreliable at recognizing this
      1. 357 m at NWC Mesonet
      2. 345 m at Washington Mesonet (KAEFS)
   3. The primary tab that we are interested in is “\_\_\_”, which displays the live feed of the sensor measurements (temp, humidity, altitude, etc.)
4. After the sensors are placed in the chamber and the height adjustment is made on the program for each sensor, make sure that everything is running properly
   1. The sensors acquire GPS
      1. This usually happens pretty quickly, most of the time it takes less than a minute
         1. The sensors will beep when they are turned on until they pick up a GPS signal
         2. When the sensors connect to GPS, the beeping will stop
   2. Make sure that the sensors are recording data
      1. Data will be live fed to the program and seen in the “\_\_\_” tab
   3. Make sure that the battery voltage on the sensor is good
      1. Battery voltage is displayed in the top right of the “\_\_\_” tab
         1. About 4.15 volts means the battery is fully charged
         2. The minimum voltage for the batteries is about \_\_\_ volts. This voltage should not be reached if it can be avoided.
            1. If the batteries are fully charged, the sensors would last about 1 hour and 45 minutes to 2 hours
   4. Make sure you turn the laptop’s screen brightness all the way down
      1. This saves the computer’s battery
      2. The battery on the computer only lasts about 45 minutes
   5. Make sure that the computer’s lock screen/sleep feature is turned off so that it never locks
      1. When the computer locks/sleeps, the data logging stops. This feature should already be turned off but double check this just in case
5. At the end of the calibration
   1. Remove the sensors from the aspirated chambers
      1. Remove the tape and turn the sensors off
   2. After the sensors are retrieved, exit out of the sensor logging screens
      1. This is safe to do. When you exit, the data is automatically saved to the folder “\_\_\_” on the laptop.
   3. Unplug/disconnect the usb and antenna from the laptop
   4. Congratulations! You have completed the calibration