

**\*Please review on August 22nd for final notes**

**Objective:** Deploy water temp sensor (150') housed in PVC/Steel conduit (125'). The sensor cable will be anchored by 8 anchors. The anchors will be constructed prior using two 80lb bags stacked on top of one another with a u-bent piece of rebar pierced through the bags to create a loop. Starting at the active ice/wave zone, 50' of the of sensor cable will be housed within galvanized piping which will be anchored by 4 of the 8 anchors.

**Date & Time:**

August 23, 2018 @ 8:00 AM

**Meeting Location:**

Mallets Bay Public Boat Ramp in Colchester, VT

**Main Equipment Involved:**

- 150' of sensor cable housed in 125' of steel/pvc conduit
- 8 x 160 lb anchors with rebar loops (prebuilt)
- total of 50' (five 10' segments of galvanized piping).
  - One pipe will be 2" diameter (the other four will be 1" diameter).

**People Involved:**

- John Truong (FEMC/UVM): 802-881-8645
- Mike Finnegan (FEMC/UVM): 860-803-0739
- Mike "Wick" Wickenden (HeroDivers): 802-355-3148
- Steve Cluett (UVM Rubenstein Lab)
- Brian (UVM Rubenstein Lab)
- Amelia Tavern (UVM Rubenstein Lab)

**Action Plan:**

1. John and Mike will meet Brian at the Mallets Bay public marina at 8:00 AM.
  - a. Steve along with Amelia will meet us at Colchester Reef
2. Wick will meet the UVM crew at Colchester Reef @ 9:00 AM
3. John and Mike will take the connector end of the sensor and run it onto shore to figure out how much of the sensor will remain on land.
4. Cut power to logger, wire sensor, check that sensor is working properly, unwire sensor, reconnect power.
5. Wick, Steve, and Amelia will mark out location within the water where depth is around 84.5 using surface floats and anchors. This is the depth that the end of the sensor should be at.
6. The sensor in conduit is then run out to the 84.5 depth point.
7. John and Mike, mark off point where the conduit begins to enter the water
8. Feed sections of galvanized pipe and connectors from the probe end to Wick, who will join them.

9. At this point the sensor will be sitting housed in the galvanized piping segments along the bottom with no anchor point
10. Load C-Hawk with anchors
11. Lower anchors overboard starting as close to shore as possible with rope
12. Wick will assist in lining anchors up to midpoint of the pipes as crew on the C-Hawk lower the anchor slowly
13. Once lowered Wick will cut into concrete bags allowing water to go seep through
14. Wick will then attach piping to rebar loops of the anchor using zip ties and galvanized shackles
15. Steps 7 - 15 will be repeated until the end of the conduit is reached.
16. Chain, used to take tension, will be connected to the anchor at the deep end of the galvanized pipe, then run to the sensor end anchor, ziptied to the flexible conduit along the way.
17. Head back to shore to make sure all the conduit on shore is secured to the tower
18. Disconnect power from logger, connect sensor, power logger on, confirm it is working.

#### Important Notes:

- Wick will need to leave by 12:00 PM
- High possibility that we will not need to use the 2" piping, this will depend on how much conduit is used directly on shore
- Steve will pick up anchors and piping to bring down to the rube lab on 8/21/18.

Below are examples of some of the equipment we are using. From left to right. The flexible couplers we are using to connect piping, the concrete bag anchors we've rigged up, and the coupler we are using to connect the 25' portion of conduit to the 100' section.



#### Final Images of Installation

- Important note, half of concrete anchors broke apart while under water. Future deployments should use set concrete anchors. Consider pouring anchors into a mold.
- 2 inch galvanized pipe was not needed

- Shackles were not used
- hose clamps were only used to connect flexible coupler to piping

