

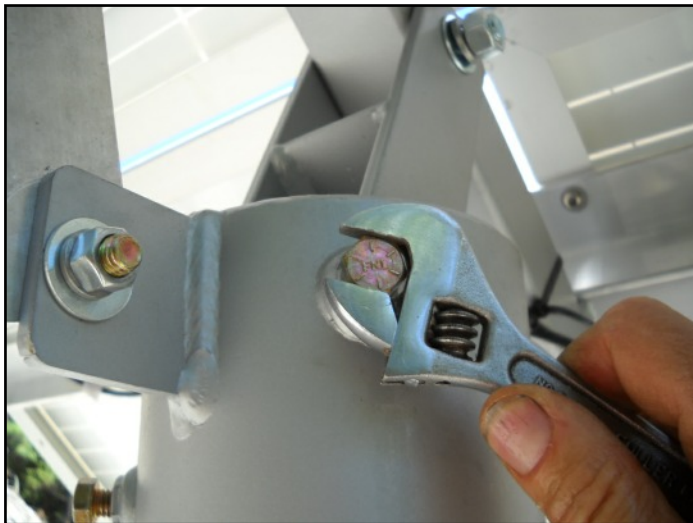
Volunteers for the Yurok Tribe Community Garden asked to have a solar pumping system installed that could deliver about 1,000 gallons per day. We selected a Dankoff SlowPump Model 2507 48 VDC. The Model 2507 can pump to 140 feet. We selected the 48 volt model because that allowed us to use a smaller wire gauge for the cable between the solar array and the pump. We also installed two float switches: one in the receiving tank, which shuts off the pump when the tank is full, and one in the feed tank, which shuts off the pump if the tank runs dry. These float switches were wired into a SolarCon Pump Controller, which also helps boost pump output. For security, the pump and controller were secured in a steel lockbox. The solar panels were attached to a pole top mount with theft-resistant security hardware.



The Pole Top Mount. This is the High Wind Version.



Pole Top Mount on a six inch steel pole. The pole is set in concrete.



Orient the rack to the south and tighten the gimble onto the pole.



These are the ribs that hold up the solar panels.





Theft-resistant security bolt, requiring a specialized driver to install.



Wrap tape around the wrench and Torx bit to avoid losing it.



Using a 7/16" wrench and the Torx bit.



12 volt, 60 watt solar panel



You can tie wire onto the frame to keep it from moving. If the frame is flat, it's much easier to mount the panels.



Leave the ribs loose on the strongback until you have all the panels installed, because you may have to move the panels around a little to get everything to line up.



Coil up the cables and secure them with zip ties.



Four 60 watt, 12 volt solar panels were used.





These solar panels are so powerful when they are wired for 48 volts, that they are capable of striking an arc if the cable ends touch, so be careful.



Four 12 volt panels were wired in series. Theoretically that adds up to 48 volts but with no electrical load on the panels, the voltage is much higher. When the pump is running, the voltage drops down considerably.



Dankoff pump and pump controller mounted on a board and installed in the lockbox.



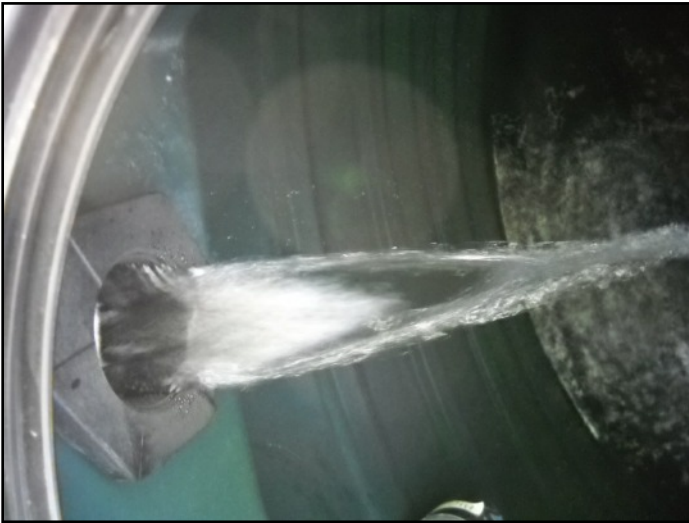
Lockbox.



Feed tank and pump



10 micron filter assembly, a necessity for these pumps.



WooHoo! Got that water! We estimate this 1,000 gallon receiving tank will fill up in a day.



Float switch in the receiving tank stops the pump when the tank is full. It is connected to the pump by 150 feet of 18 gauge, two conductor cable. We used a fish tape to run it inside of 1/2" poly pipe for protection. The same with the array to pump cable, it's also inside poly pipe.





Making the float switch connections.



Yours truly Thad Horner putting the finishing touches on the panel installation.



Smiles as we near the end of the job.



Full tanks for the Community Garden.

Many thanks to Dave for all his support.