

Installing Rhizon Porewater Samplers

Supplies

1. Rhizons 2.5 mm, the standard size Rhizons for pore water sampling
2. Rhizon extension tubing
3. Power auger with at least a 3 in bit
4. Insertion tool ($\frac{1}{8}$ in ball end hex screwdriver with a 5 in tip)
5. Pvc supports with drilled holes to connect the Rhizon tubing to above the soil

Protocol

1. Auger a hole 45 cm deep. Make sure to remove the excavated soil carefully.
2. Insert the depth installation tool. It is a piece of pvc or wood that has pre drilled holes at the specific depths where the rhizons will be installed.
 - a. For the NFWF project we will insert a Rhizon at 45 - 55 cm and at 15 - 25 cm depths.
3. Insert the Rhizon insertion tool at a 45 degree angle at the desired depths.
4. For the lower depth rhizon connect the rhizon filter tip to an extension tubing.
 - a. For the NFWF project we put white labeling tape on the tubing of the 15 -25 cm depth Rhizons and bright green labeling tape on the tubing 45 - 55 cm rhizon. We put the tape near the top coupling piece that is attached to the pvc support post.
5. Remove the insertion tool and then gently put the rhizon filter tip into the hole created by the insertion tool. Make sure to insert the rhizon filter tip completely. You should not see any white of the filter piece outside the insertion hole. Place a small amount of the excavated soil around the area where you inserted each Rhizon.
6. Carefully run the Rhizon tubing out of the excavated hole making sure that none of the coupling pieces get buried or dirty.
7. Fill half of the hole with a bentonite and water mix. Insert the pvc support post into $\frac{1}{2}$ filled hole and fill the remainder of the hole with bentonite and water mix. Making sure to mound the bentonite at the top to prevent pooling.
8. Gently wrap the Rhizon tubing around the pvc support post and zip tie them to the post to keep the tubing off the ground and out of the soil.
9. Mix bentonite and fill the excavated hole. Make sure to shape the bentonite

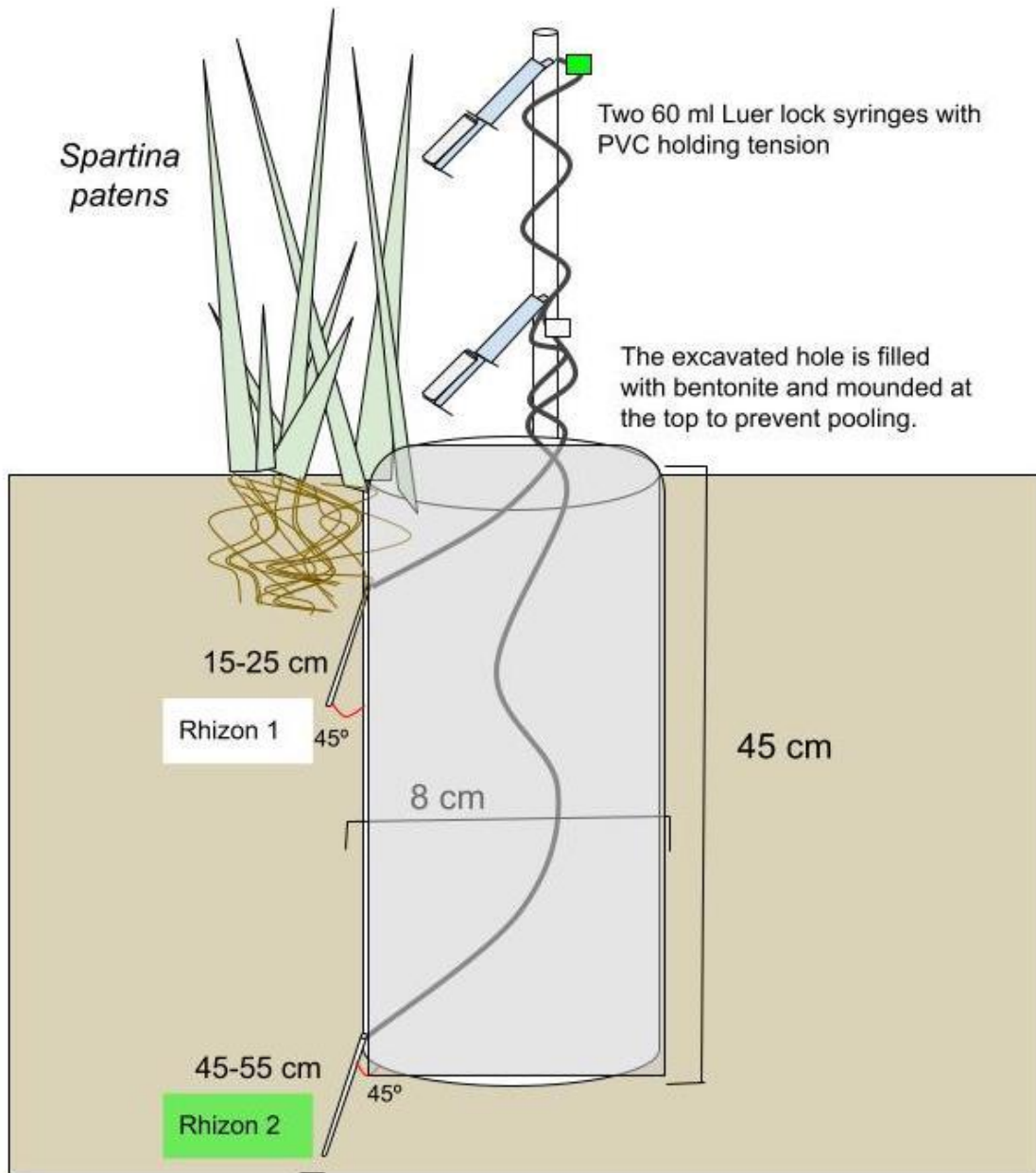


Figure 2 1/8' ball end hex screwdriver with 5 in tip



Figure 2: Use a 1/8" in ball end hex screw with a 5 in head to insert a 10 cm Rhizon filter piece.

Figure 3 Rhizon depth insertion guide

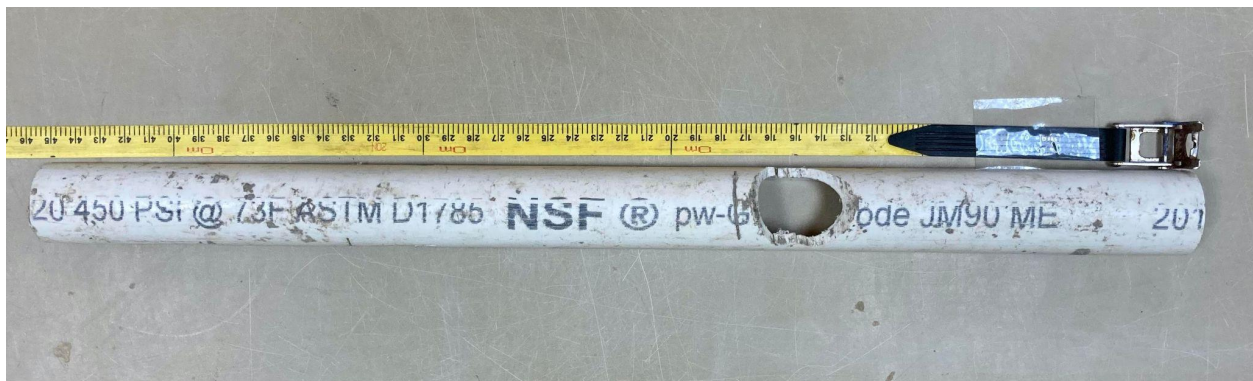


Figure 3: This Rhizon depth insertion guide is made from a piece of pvc that is 45 cm long. There is a hole cut into it at 15 cm. Insert the ball end hex tool at a 45 degree angle into the soil profile through the guide hole to install the 15 -25 cm rhizon. Then remove the depth insertion tool while leaving the screwdriver in place.