FILENAME: SOP_1130_ Procedure for Constructing Housings for Passive Field Sampling.doc
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SOP #: 1130

Procedure for Constructing Housings for Passive Field Sampling

1.0 Purpose and Applicability

This document outlines a procedure for preparing a weather-proof housing for the Wagner-Leith passive sampler. Also outlined here is the procedure for attaching the housing to a pole to keep it stable and level.

2.0 Equipment and Materials

3 Plastic 3/8” thumb screws (McMaster Carr Part # 94323A307)
3 Polyurethane washers (McMaster Carr Part # 93650A110)
3 Stainless steel pan head philips 3/8” screws (McMaster Carr Part # 91772A192)
3 Aluminum standoffs (McMaster Carr Part # 93330A456)
3 Rubber grommets (McMaster Carr Part # 9600A17)
2 Plates constructed from 0.08” thickness sheet aluminum
4” corner L-bracket
Prepared passive sampler (refer to SOP # 1120 for preparation)
Duct Tape
U-channel fence post (6-7’)
Post Driver

3.0 Methods

1. 2 plates need to be made from the sheet aluminum. One plate is 8" diameter and the other is 5" diameter. The three holes for the standoffs in both plates need to be just big enough to fit an 8-32 screw. The hole in the center of the 5" plate holding the grommet is 1/4". The 8" plate has a groove etched into it on one side about a 1/2" from the outer edge. Both plates have their outside edges rounded off.

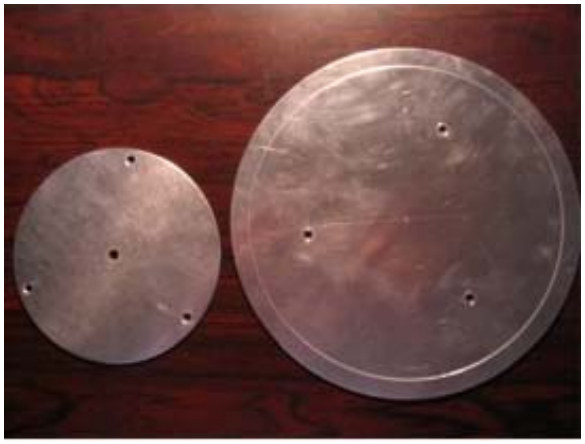

Figure 1 – 5” and 8” plates of shelter.

2. To assemble the housing, first push the grommet so that it is securely into the hole that was cut into the center of the 5" plate.

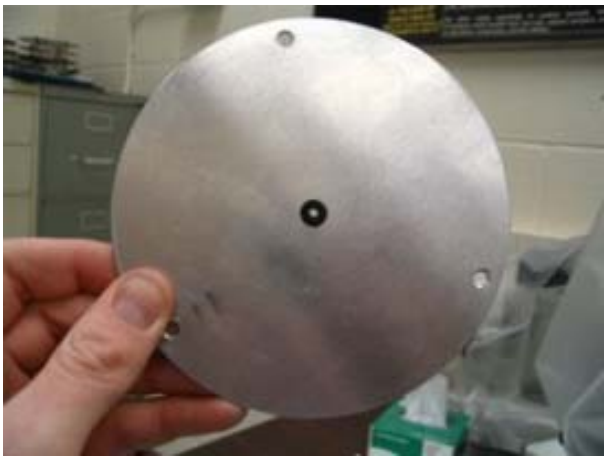

Figure 2 – 5" plate with grommet in middle.

3. Put the stainless steel screws through the holes in the 5" plate and screw them into the standoffs, so that the plate is in between the screw and the standoff.

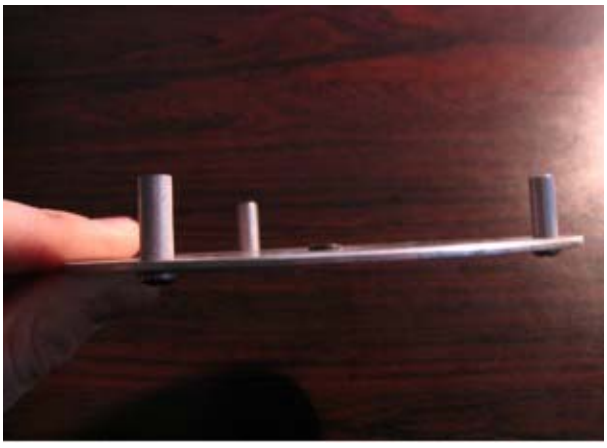

Figure 3 – 5" plate with grommet, stainless steel screws, and standoffs attached.

4. Place the 8" plate on top of the standoffs so that its holes line up with the standoffs (with the grooved edge side down.) With the polyurethane washers on them, screw the thumb screws into the holes in the 8" plate and into the standoffs. The shelter is now complete.

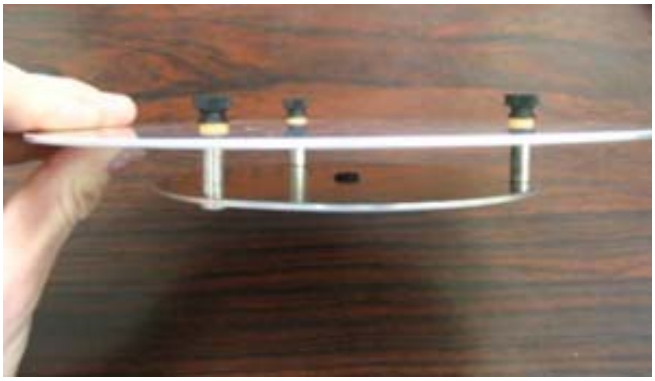

Figure 4 – Assembled Housing.

5. Drive a 6' to 7' fence post about a foot and a half into the ground with the post driver. To the top, attach the L-bracket so that one side of the L-bracket is level for the shelter to be set upon.

Figure 5 – L-bracket attached to fence post.

6. After the L-bracket is screwed into place, apply duct tape around the base for extra stability.

Figure 6 – L-bracket attached to fence post, with duct tape.

7. Now the housing can be attached. Unscrew one of the screws from the 5' plate and secure the housing to the L-bracket with it. (Use the hole on the L-bracket that is farthest away from the U-shaped pole.) Try to position the housing so that the bottom plate covers as much of the L-bracket as possible. Otherwise, rain can splatter off the bracket into the sampling area.

Figure 7.1 – Housing attached to L-bracket.

Figure 7.2 – Housing attached to L-bracket.

8. To begin sampling, unscrew two of the thumb screws and swivel the 8” plate until the grommet is exposed. Take the passive sampler out of its plastic storage tube and place it securely in the grommet. Turn the 8” plate back into position and re-attach it. Take note of the location and time. When changing out the sampler, do not let rain land on it. Excessive moisture will interfere with the sampling.

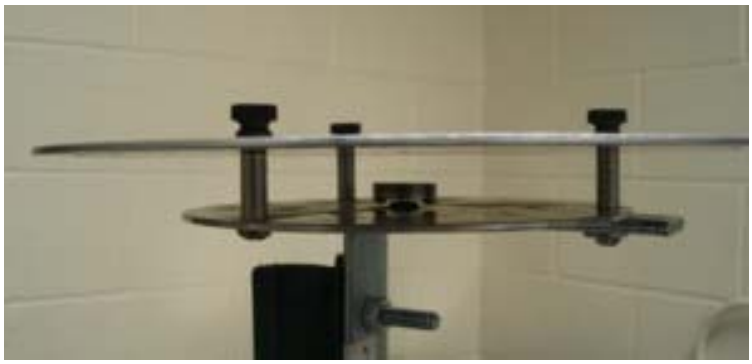

Figure 8 – Housing with passive sampler inside.

9. When sampling is complete, take out the passive sampler following the procedure just described. Return the passive sampler to its plastic storage tube. Take note of the location and time.

Deployed passive sampler