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Turf Umbrella Runoff Study: Total Suspended Solids (TSS)

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1 Works for me This protocol is published without a DOI.

PDI Test

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ABSTRACT

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PROTOCOL CITATION

USDA 2021. Turf Umbrella Runoff Study: Total Suspended Solids (TSS). **protocols.io** https://protocols.io/view/turf-umbrella-runoff-study-total-suspended-solids-btwnnpde

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GUIDELINES

MATERIALS TEXT

Safety Equipment

- Gloves
- Lab coat
- Goggles

Lab Equipment

- Oven set at 103 - 105°C
- Desiccator with active desiccant
- Ring stand with clamp
- 1000 mL filter flask
- Vacuum tubing
- Filtering apparatus: top, bottom with stopper, and clamp
- Baked Millipore filters - 0.2 µm, white nylon, GNWP 47 mm (cat. # GNWP04700)
- Millipore forceps
- Aluminum tins
- Balance (0.000X g)
- Balance (0.0X g)

BEFORE STARTING

*** Note: Samples must be brought to room temperature before filtering.*

1 Remove samples from the refrigerator. Bring to room temperature.

2 Assemble filtering apparatus to vacuum.

3 Record the aluminum tin ID # on data sheet.

4 Using a tweezers, place an oven-baked filter (either side facing up) into the aluminum tin. Discard the blue paper between filters.

If you need more baked filters, use a tweezers to place unbaked filters on aluminum foil, making sure that there is layer of aluminum foil between each filter and the next. Seal the filters up and then place in the oven at 104C overnight.

5 Record the weight (0.000X g) of the filter and aluminum tin. Set aside.

6 Record the sample ID and weight (0.0X g) of sample. Be sure to weigh the sample with the cap on to prevent spillage.

If you are handling Manifold Water samples, double glove.

7 Using a forceps, seat the filter on the filter holder with either side up. Turn vacuum on. Sparingly wet the filter, with epure water, to create a seal and prevent sample loss.

When handling filters, always try and touch the tweezers to only the outer edges of the filter.

8 Carefully place the filtering apparatus top onto the filter holder. Secure with the filtering apparatus clamp.

Vigorously shake sample and then add to the filtering apparatus. Slowly filter sample. Remove and discard debris such

9 as leaves, sticks, or fecal matter. Replace the tin foil back on top of the filtering apparatus.

10 After the entire sample has passed through the filter, rinse the inside of the filtering apparatus with epure water 3x.

Use a designated squirt bottle for this with fresh MilliQ water (DO NOT use the one that is used for washing dishes as we cannot ensure there aren't contaminants on it)

11 Record the weight (0.0X g) of the emptied sample bottle with its cap on. Turn off vacuum.

12 Disassemble the filtering apparatus. Using a tweezers, place the filter into the aluminum tin. Rinse the tweezers with MilliQ water between samples. Place in oven at 103 - 105°C for at least 4 hours, or overnight.

Make sure that you take the filter off soon after it's done filtering. Otherwise it may stick on the filtering apparatus and be difficult to move.

If the filter is not coming off, try and wet it with a little MilliQ water to help get it unstuck.

13 Remove tin from oven and desiccate for at least 30 minutes.

14 Record the final weight (0.000X g) of the filter and aluminum tin.

15 Return tin and filter back to oven.

16 Repeat step 13.

17 Repeat step 14.

18 If there is a big difference in weight from step 14 and 17, then rebake and weigh a third time.