Ammonia Monitoring Network (AMoN) Sampler Change-out

Items needed:

> AMoN supply box for current sampling period
> AMoN supply box for next sampling period
> laboratory gloves, provided by the CAL and included in supply box
> fresh (< 6 months old) deionized or distilled water in a plastic squeeze bottle
> paper towels or laboratory wipes (e.g., Kimwipes[*])
> AMoN field form for current sampling period
> log book, if used

Precautions:

Store AMoN supply boxes in a cool, dry place.

Wear a clean laboratory glove when handling the AMoN sampler.

Handle the sampler by the coupler at the top of the sampler only.

Do not disassemble the sampler. It is shipped ready to deploy.

Breath, perspiration, cleaners, and waxes are sources of potential contamination. Direct contact of any of these with the AMoN sampler should be avoided.

Leave the strips of filter paper in the bags containing the glass jars. These strips are coated with citric acid and will scavenge ammonia from the inside the bag to prevent possible contamination of the sampler.

Sets of supplies should remain together, and should not be mixed with supply boxes for other deployment dates.

The AMoN sampler has a bar code and 2 character ID on its base. Please leave this bar code in place. It is used to track problems (e.g., deployed sampler found on the ground, sampler body fell apart, dropped sampler in the grass when deploying it) with specific samplers.


[*]**Disclaimer:** The use of trade or manufacturer's name does not constitute an endorsement by the NADP, its sponsors, the University of Illinois or the Illinois State Water Survey.

Instructions – In the Laboratory:

<u>Before</u> going to the field site, inspect contents of AMoN supply box. Contact the AMoN Site Liaison (800-952-7353, or amon@isws.illinois.edu) if the glass shipping bottle for either the sampler or the travel blank (if present) is cracked, or broken.
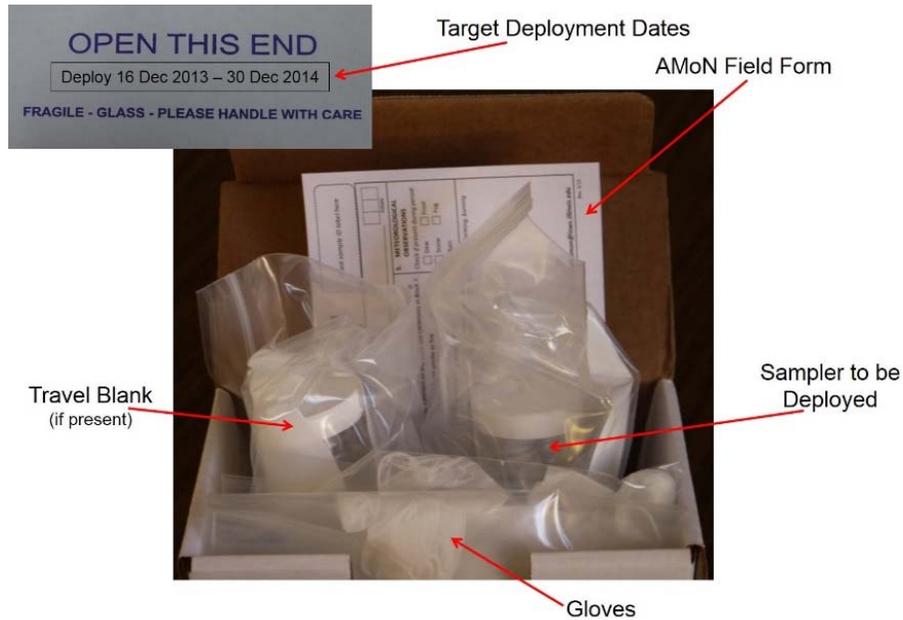
The AMoN supply box will contain a glass jar with sampler(s) to be deployed, and possibly a second glass jar containing a Travel Blank. The glass jar containing the sampler(s) to be deployed will contain either one sampler, or three samplers (for triplicate measurements). The Travel Blank should be left in its sealed glass jar, inside the plastic bag, and in the supply box.
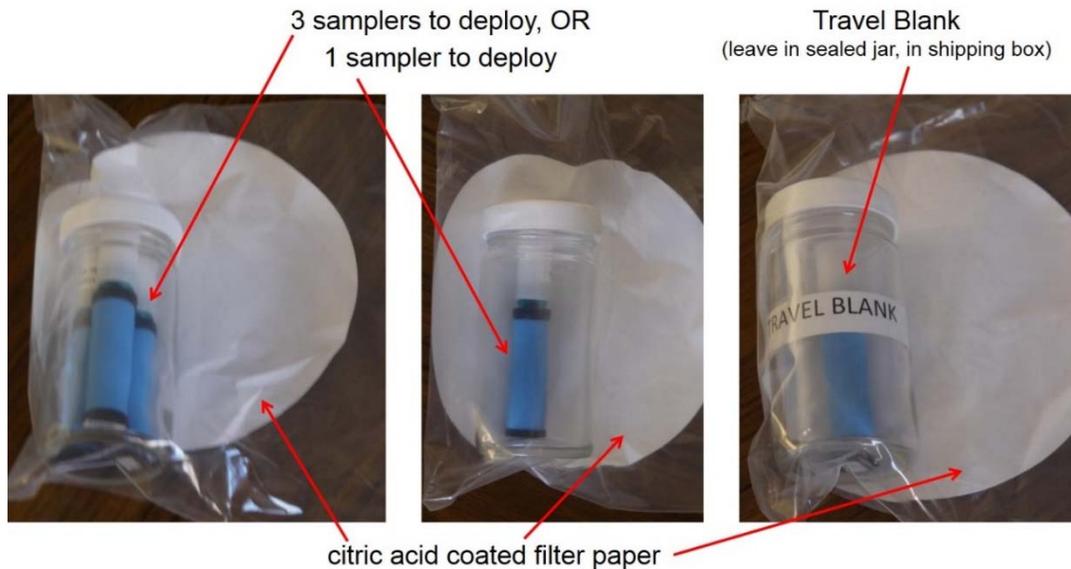
The plastic bag containing the glass bottle with the samplers to be deployed, and the field form are labeled with matching bar code numbers. The bar code labels should remain in place; do <u>not</u> remove them. If the numbers do not match, contact the AMoN Site Liaison.

Instructions – In the Field:

1. Complete Block 4 **Site Conditions** of the AMoN field form for the sampling period that is ending. Include additional information in Block 7 **Remarks** of the field form to help describe any problem(s) or local activities that may have impacted the sampler. Remember to include the ID of the sampler body if multiple samplers are deployed.

2. Retrieve the glass shipping bottle for the current sampling period from its plastic bag and loosen (but do not remove) its cap. Place the bottle on a flat, stable surface.

3. Put on a (one) clean laboratory glove. Using the gloved hand, retrieve the AMoN sampler for the current sampling period by unscrewing its coupler from the mounting bolt in the AMoN shelter. Handle the sampler by its coupler <u>only</u>.

4. Open the glass shipping bottle and place the AMoN sampler inside. Re-seal the glass bottle.

5. If additional samplers are deployed (i.e., triplicate samplers), repeat steps 3-5 until each of the deployed samplers has been collected and stored in the glass shipping bottle.

6. Ensure the lid is secure on the glass shipping bottle, and return the bottle to its shipping bag. Leave the strips of filter paper in the bag.

7. Seal the plastic bag and place the sealed bag (with shipping bottle inside) in the AMoN supply box.

8. Inspect the AMoN shelter for cracks and other conditions that could impact the integrity of the samplers. Contact the AMoN Site Liaison if a new shelter is required.

9. Moisten a lab wipe (e.g., Kimwipe) or paper towel (non-print/non-colored) with deionized (or distilled) water. Wipe down the AMoN shelter. Be certain to remove bird droppings from the surface of the AMoN shelter. Bird droppings are a possible contamination source. Cleaning agents (e.g., Windex) may contain ammonia and should never be used.

10. Remove and discard the laboratory glove after cleaning the AMoN shelter.

11. Complete Block 3 **Sample Start and End** to indicate the date and time that the AMoN sampler was removed (i.e., OFF) from the AMoN shelter. The date and time that the AMoN sampler was deployed (i.e., ON) should have been recorded on the form already.

3. SAMPLE START AND END					
	Date			Time	
	MO	DAY	YR	0001-2400	
ON					
OFF					

12. Complete Block 5 **Meteorological Observations** (on the AMoN field form for the sampler that was just removed) to indicate meteorological conditions that occurred during the sampling period.

5. METEOROLOGICAL OBSERVATIONS
Check if present during period:
☐ Dew   ☐ Frost
☐ Snow   ☐ Fog
☐ Rain

13. Complete Block 6 **Site Observations During Filter Removal** (on the AMoN field form for the sampler that was just removed) to indicate the percent of leaves on trees and brush in the immediate vicinity of the site.

6. SITE OBSERVATIONS DURING FILTER REMOVAL				
What % of leaves:	0-25%	26-50%	51-75%	76-100%
Have dropped?	☐	☐	☐	☐
Have fall color?	☐	☐	☐	☐
Are green?	☐	☐	☐	☐

14. Include any additional comments in Block 7 **Remarks** (on the AMoN field form for the sampler that was just removed) that may help with sample validation. Such notes may include: *extended duration sample*, *short duration sample – AMoN supplies received late*, *travel blank bottle arrived cracked*, or *sampler with ID AA found dropped on ground when deploying it*.

15. Place the completed field form in the AMoN supply box containing the sampler that was just removed. Set the completed supply box aside.

16. Retrieve the AMoN supply box containing the new sampler to be deployed.

17. Complete Block 1 **Site** and Block 2 **Observer** on the AMoN field form for the sampler to be deployed.

1. SITE		2. OBSERVER	
Name _____	☐☐☐☐ ID	Print name _____	☐☐☐☐ Initials

18. Enter the date and time in Block 3 **Sample Start and End** on the AMoN field form (for the sampler to be deployed).

3. SAMPLE START AND END					
	Date			Time	
	MO	DAY	YR	0001-2400	
ON					
OFF					

19. Retrieve the glass shipping bottle for the sampler to be deployed from its plastic bag.

20. Put on a (one) clean laboratory glove. Using the gloved hand, unscrew the lid from the glass shipping bottle and retrieve the new AMoN sampler to be deployed. Handle the

sampler by its coupler only. If the sampler must be deployed during a precipitation event, perform this step under the AMoN shelter to prevent the sampler body from getting wet.

21. Secure the sampler inside the AMoN shelter using its coupler by screwing the coupler to the mounting bolt.

22. If there are additional samplers in the glass bottle (i.e., triplicate samplers), repeat steps 20-21 until each of the samplers has been deployed.

23. Re-seal the glass bottle and return the bottle to its shipping bag. Again, leave the strips of filter paper in the bag. These strips are coated with citric acid and will scavenge ammonia from the inside the bag to prevent possible contamination of the sampler.

24. Place the glass bottle in its shipping bag and re-seal the bag. Place the shipping bag (with shipping bottle inside) and the field form in the AMoN supply box for use when the sampler(s) is/are collected at the end of the sampling period.

25. Store the AMoN supply box (for the newly deployed sampler) in a cool, dry place. Storage in a refrigerator or freezer is encouraged, provided it does not contain food, or samples containing ammonia (e.g., urea, etc.).

26. Affix the pre-paid shipping form (and customs labels, if appropriate) to the outside of the AMoN supply box containing the sampler that was collected.

27. Seal the AMoN supply box, and ship it to the CAL for analysis. The shipping address for the CAL is:

> NADP Sample Receipt
> Central Analytical Laboratory
> Illinois State Water Survey
> 2204 Griffith Drive, Dock B
> Champaign, Illinois 61820-7463
> USA

Appendix A – AMoN Sampler Body

steel bolt (inside shelter)

threaded coupler
(secures sampler to bolt)
GRASP HERE

Radiello upper end
(black cap)

Radiello diffusive body
(blue tube)
DO NOT TOUCH

Radiello lower end
(black end cap)
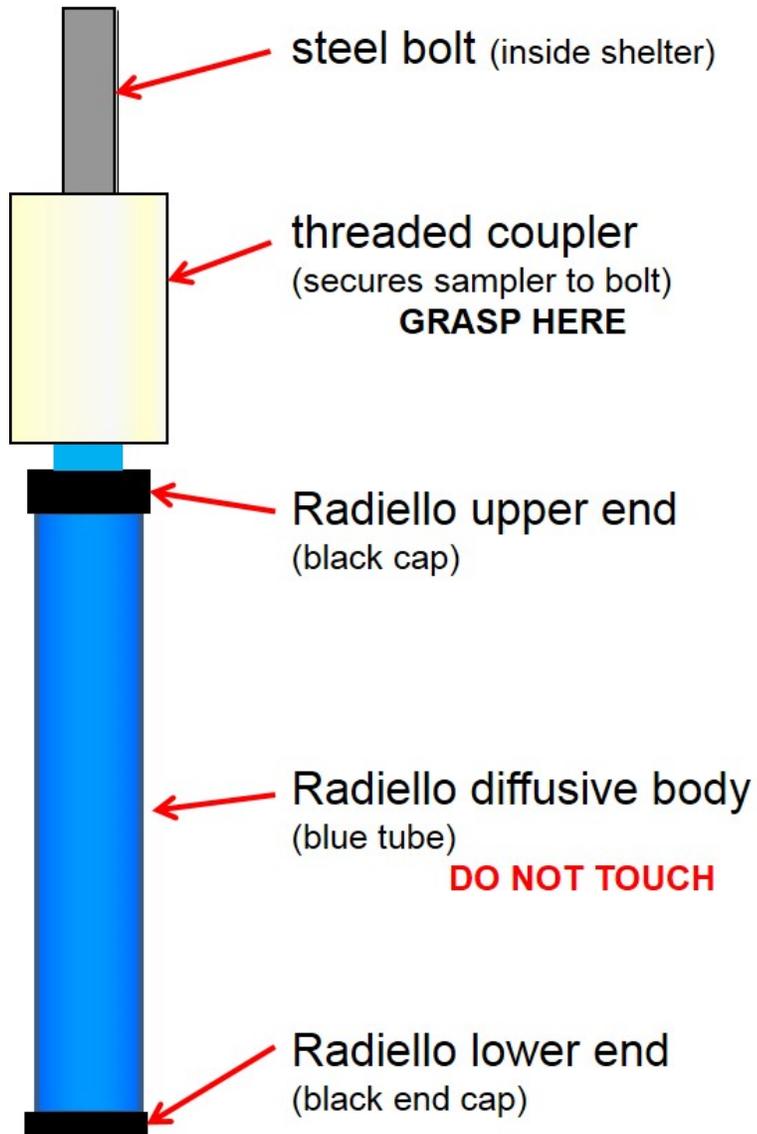
Appendix B – AMoN Field Form

AMMONIA MONITORING NETWORK (AMoN)

NADP

Send Completed Form with Each Sample Set to:
Central Analytical Laboratory
2204 Griffith Drive Dock B, Champaign, IL 61820

Place sample ID label here

1. SITE

Name _____

ID

2. OBSERVER

Print name _____

Initials

3. SAMPLE START AND END

	Date			Time
	MO	DAY	YR	0001-2400
ON				
OFF				

4. SITE CONDITIONS

Please check any and all conditions that apply. Comment on any other site conditions in Block 7.

YES	NO	
2	1	1. Significant smoke or fire
2	1	2. Fertilizer use nearby
2	1	3. Farm animal activity nearby

5. METEOROLOGICAL OBSERVATIONS

Check if present during period:

☐ Dew ☐ Frost
☐ Snow ☐ Fog
☐ Rain

6. SITE OBSERVATIONS DURING FILTER REMOVAL

What % of leaves:	0-25%	26-50%	51-75%	76-100%
Have dropped?	☐	☐	☐	☐
Have fall color?	☐	☐	☐	☐
Are green?	☐	☐	☐	☐

Place sample set ID label here

7. REMARKS *For example: equipment malfunction, contamination, farming, burning*

Questions? Call the CAL at 1-800-952-7353 or E-mail amon@isws.illinois.edu

White Copy: Return to CAL   Blue Copy: Retain for Your Records

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