

Co-Located AMoN Study with Radiello and ALPHA Samplers

This is a co-located study for the Ammonia Monitoring Network (AMoN) utilizing NADP’s current approved passive sampler, Radiello, and the ALPHA (Adaptive Low-cost Passive High Absorption) sampler, which is widely used in the United Kingdom. Duplicate Radiellos and ALPHAs will be deployed for a 2-week period, spanning over 9 months.

Study Objectives

- Assess ALPHA sampler durability in the field
- Assess ALPHA sampler ease of use in the field
- Compare passive sampler chemistries
- Assess anti-static bag for packaging

Study Timeline

- 11/5/24 – first set of ALPHA samplers will be shipped to sites
- 11/19/24 – first deployment of co-located samplers, ALPHAs and Radiellos
- 8/26/25 – last deployment of co-located samplers, ALPHAs and Radiellos

Deployment Details

- This study will use the existing AMoN shelter
- For each 2-week sampling period, duplicate Radiellos and duplicate ALPHAs will be deployed, for a total of 4 samplers deployed in the shelter

Contacts

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THANK YOU FOR YOUR PARTICIPATION IN THIS STUDY!

Section 1 – Preparing Your Site

The first shipment will contain 3 weld nuts with Velcro attached. The 3rd nut is a spare.






Install 2 weld nuts on the posts in the existing AMoN shelter.



Section 2 - Supplies

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| <p>A standard NADP box will arrive with ALPHA samplers and supplies.</p> <p>NOTE: a separate box will be shipped with the current AMoN samplers (Radiellos).</p> | |
| <p>Each shipment will contain:</p> <p>Clear Ziploc Bag (A)</p> <ul style="list-style-type: none"> 1 set of duplicate ALPHA samplers 2 laboratory caps <p>Clear Ziploc Bag (B)</p> <ul style="list-style-type: none"> 1 travel blank (sealed with sticker) <p>Field Form (C)</p> | |
| <p>Packaging of ALPHA samplers:</p> <ul style="list-style-type: none"> Duplicate ALPHA samplers (A) and laboratory caps (B) are inside anti-static bag (C) Anti-static bag is inside of clear Ziploc bag (D) with citric acid filter (E) | |

Section 3 – Deployment

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| <p>Step 1 With gloves on, remove duplicate ALPHA samplers from bag. The ALPHA bodies may be touched.</p> <p>NOTE: DO NOT open travel blank. It will remain sealed in the bag for the entire process.</p> |  |
| <p>Step 2 Remove the top protective cap (cap with embossed writing), exposing the PTFE membrane. Do not touch the PTFE membrane.</p> |  |
| <p>Step 3 While only touching the ALPHA body, attach samplers with the Velcro inside the shelter. Firmly press upwards to ensure sampler is secure.</p> <p>Step 4 Fill out box 3 on the field form with the “ON” date and time.</p> |  |

Section 4 – Sample Collection

Step 1

After 2-week sampling period, retrieve ALPHA samplers from shelter - wearing gloves, pull each ALPHA sampler off the Velcro weld nut. Be sure to only touch the outside of the ALPHA body. Place the protective cap (embossed cap) back on the ALPHA bodies.

Step 2

Fill out box 3 on the field form with the “OFF” date and time, box 4 with the site conditions, and box 5 - REMARKS with any relevant observations.



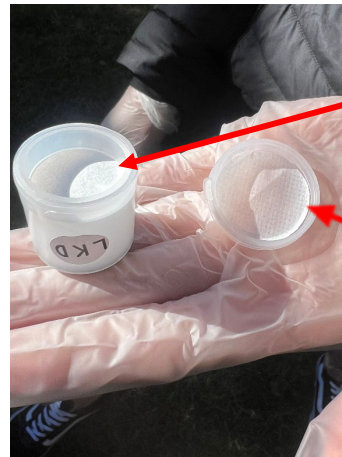
Find **somewhere dry** for next step as precipitation will contaminate the filter. If transportation to a dry location is required, place samplers inside the anti-static bag.

Step 3

Remove protective cap (embossed cap), and membrane cap (cap with hole) with PTFE membrane inside.

Do not touch the inner filter paper. This is the collection filter that contains ammonia and will be extracted back at the lab.

NOTE: The PTFE membranes are cleaned for reuse, so please take care when handling them.



ALPHA body with inner filter paper exposed

Membrane cap with PTFE membrane inside

Step 4

Cap samplers immediately with laboratory cap (extra cap sent with samplers, non-embossed). Ensure cap is secure.



Step 5

Place the following items back inside the anti-static bag:

- 2 ALPHA samplers with laboratory caps on
- 2 membrane caps **with** PTFE membrane included
- 2 protective caps (embossed cap)

Step 6

Be sure to seal the bag. Place anti-static bag into clear Ziploc bag and seal the clear Ziploc bag.

Step 7

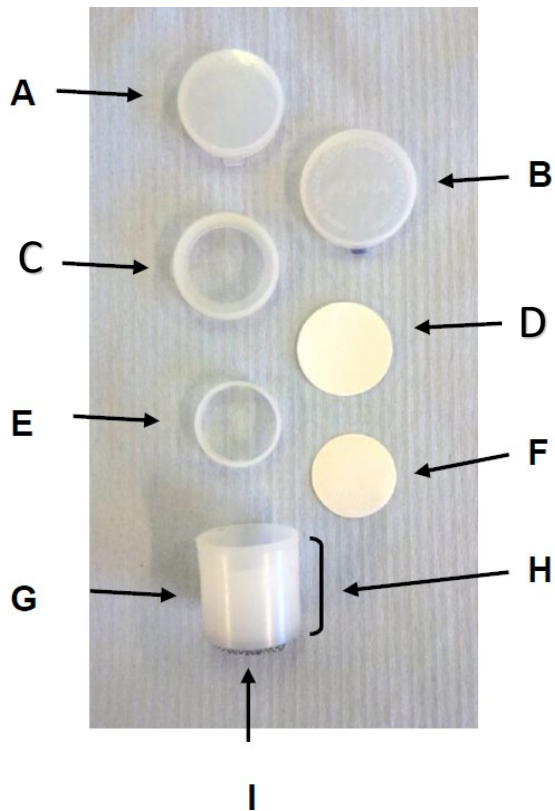
Return all items to the shipping box labeled ALPHA, to be sent back to the lab. This includes 1 Ziploc bag with duplicate samplers and additional caps, 1 unopened Ziploc bag containing the travel blank, and the field form.



Sampler with laboratory cap on



Section 5 – Additional Information



ALPHA Parts

- A. Laboratory Cap
- B. Protective Cap (embossed)
- C. Membrane cap (cap with hole)
- D. PTFE membrane
- E. Support ring to hold filter paper in place
- F. Filter paper
- G. Internal ridge to support filter paper
- H. ALPHA body
- I. Velcro – hook side

****Please note that parts E, F, and G will not be handled during field operations****