NADP Fall 2024

NOS Agenda 11/4/2024 2-5pm central time

2:00 PM Welcome, Logistics, Introductions (Mike McHale)

2:10 PM Sample and Data Updates (Zac Najacht)

2:30 PM Field Operations & NED Updates (Amy Mager)

2:50 PM Network Analytical and QA Reports

2:50 PM QA Report / External Review Update (Nicole Miller)

3:10 PM Break

3:30 PM Lid change procedure motion (Nicole Miller)

3:45 PM ALPHA samplers for AMoN (Katie Blaydes)

4:05 PM Site Liaison (Richard Tanabe)

4:10 PM USGS External QA Project Update (Noel Deyette)

4:30 PM CAPMon Updates (Jason O'Brien)

4:40 PM CASTNET Update (Melissa Puchalski)

4:45 PM Robotic Sampling Update (David Gay)

4:50 PM Nomination of NOS Secretary (Mike McHale)

4:55 PM Final Discussion/Questions/Wrap-up (Mike McHale)

5:00 PM Adjourn

Zac Najacht: shipping supplies / processing updates

Data review & reporting updates

Supplies all networks and receives samples from all networks

Continue to work closely with the field operations team

-now able to reuse PFAS 1L bottles (spiking after)- so full 10 plus uses

~$7 per bottle

New bags that are not pre-printed- sticker

-AMoN box (with NADP stamp- smaller, cheaper and last as long)

- FedEx shipping- significant savings – still working to improve efficiencies

- August 2023-February 2024- now receiving the federal shipping rates
    - Was $12-14/package, now $8-$9
- Improved connection between sample receiving and Field Operations teams
    - site support hub
    - trouble ticket system

Moving pH/cond/filtering allowed team to move into a more data review role

- Active sites:
    - NTN 256
    - AMoN 100

- Monthly data sets- by month received in
    - 3,000 records/ month

Data review- all within form-overview/ PO/website (Mark and Jean)

- Turn around times (TAT) and data reporting
    - MLN, PFAS, shifting personnel and roles
    - other circumstances
- Focus on what we can control and be better prepared
- Streamlined data review for NTN
- kind of on hold with further development of current programs
- Weekly data ops meetings

- DMAG group is still ongoing
    - idata from preliminary to the web
- Adjusted preliminary review processes
    - now using external tools to prescreen the datasets

NOTE: Old process is legacy

    - new one is “streamlined”
    - all data checks/review steps are maintained
    - reorganization & consolidation
    - team effort

- Streamlined
    - more focused and high-quality results building on previous methods
    - more staff involved in NTN preliminary data review
    - data still gets a final review by Zac
- Legacy timeline- focused on compare>overall sample review
- Progress & statistical comparisons
    - April 2024-new branched process implemented
    - 90-day TAT (turn around time) goal

    - developed a system for tracking the status
    - ~2 weeks through preliminary review now, used to be about a month
    - statistical comparisons
    - valid/invalid sample rates
- Now: MDN and AMoN are within 90-day TAT, 123 days for NTN

Takeaways: Greatly improving TAT, 11 months of preliminary review

- will reach TAT goals by the end of 2024

-better positioned for setbacks and change with this process

- are there potential indicators due to underlying differences in the data rather than the change in Preliminary Review procedure
- See Jean Steele's poster on "Evaluation of updated review"

Next steps

- Revised TAT's
- Best practices and deadlines
- continue with statistical comparisons
- updating the preliminary review SOP (Zac)
- potentially removing the MDN preliminary review to the same process
- Evaluate how we can use other programs/technology to improve functionality and streamline process further (has been tailored to NADP)
- Learning about other programs that the state lab has

Amy Mager

- Upgrades on processes (NADP LIMS system - written in an old language) Casey is the only one who knows how to work with this…
- Need to move to newer programs to support newer changes
- Was not a top WSLH priority- there were other system needs that bumped NADP
- System upgrade possibilities – HORIZON and Acumatica
- Should ramp up work on this in CY2025 – Update, HORIZON work for NADP may be pushed back due to competing needs
- Benefits, will have support from OIS/state lab
- Will help divide Casey's time moving forward; can determine which parts of the NADP LIMS we leave alone (because will move to a new system); vs. those we continue to improve (i.e. re-write in a more modern language)
- Data review will stay as is for now (that is, will not move to HORIZON)
- Data review – convert into a more modern language
- Project managers in OIS to guide implementations
- HORIZON (LIMS used by the rest of the environmental health division at the state lab)

- ACUMATICA (billing, purchasing, ordering, shipping, customer service management)- has a customer portal
- NAVIANT-(document management system, also offers OCR)- ONBASE is administered by this – use this to scan and read field forms
- could replace first data entry through compare
- saves lab tech time/labor and pay for itself in less than a year

Q&A

David Gay: It takes about 30 days to get data out of the lab? How short do you think you could do it? A lot less than 90 days

Zac Najacht: 90 days has been the goal since we took over the program from the University of Illinois- 60 days seems like a fair estimate to start with

- will consult with the lab folks and compare with the data review team

Anita Peterson: Know how much trouble Zac went through for FedEx transition

DG: saved $80k/ year, the PO was paying ~$220k in shipping

MM: Efforts saving money and getting the TAT coming down is nice to see

Field Operations Update: Amy Mager

- The NED is in good shape
    - Well-stocked with sensors and motorboxes. The summer students/interns were a huge help
    - Implemented a "case" system (Mike Randall) to organize repairs
    - The documentation of tasks continues to evolve
    - Implementing a parts shipping and tracking system
    - Mike is also working on equipment testing to improve performance
        - snow roof/heater prototype
        - prototype motorboxes to achieve more consistent resistant triggers

Changes:

Dana: No longer Field Ops supervisor

Research Operations Analyst covering:

- Precipitation data review
- identify/address/resolve site issues
- technical lead for instrumentation issues

Succession planning for Richard

- Role includes subcommittee and meeting administration

PO QA ("Mark Rhodes" position)

- never came over 1:1 from IL
- Generally covered, but staff is stretched too thin

What are we doing:

- Re-examine Field Operations Procedures
- who does what now?
- what are we not doing?

How can we leverage Mike and Nathaniel's roles? (more site support)

- Examine new and existing tools? (site support Hub, new data systems like Acumatica)
- Long standing site/equipment issues-how to handle these? Involve funding agencies? When?

- Change structure of weekly Field Ops/ Data meeting
  - devote more time to specific Field Ops issues
- Recognize we have several large changes on the horizon
  - Data system upgrades
  - Need to have well laid plans and concerted project management efforts for these
- Expand current QA position to be program-wide, cover PO/NAL
  - WSLH has a thorough analytical QA program
  - several NAL duties/tasks overlap with PO QA
- PO/NAL are at same institution, makes sense to have overarching program wide QA Looking at other WSLH resources to cover some of the general QA tasks like SOP management, calibrations, occurrences
- More details to come by the Spring 2025 meeting

QA Report : Nichole Miller

- External review of PO and labs held 10/1-10/2 (Ryan McCammon, Noel Deyette, Tracy Dombek, Sarah Janssen, Michael Butler, Kevin Mishoe, Brian Izbicki, Yong Liu)
- Plan to have a formal response by the end of the year

PT Samples-ECCC

- pH: four samples exceeded in house duplicate criteria of 0.20 (ran a pH carryover study)
- K: low bias for this analyte (low detection samples)-run multiple days, unsure why

- Hg: one high result

USGS SRS program

- overall great results

PT WMO

- overall good results
- slight low bias for Ca

Major changes

- sprinkler system upgrade (no changes in data seen)
- changed the naming system for NTN samples (now more in line with other networks – now TYYXXXXX) changed in March
- Implemented a rinse of the pH probe after samples reading 6.8 or higher

- A couple new SOPs
  available upon request-will be listed on website
- Data review SOP in progress (Mark K)
- Pipette verification SOP completed
- Precipitation review SOP – published in onbase within the next couple of weeks **

QAR 2023

- The QAR is a great resource for a summary of all lab operations and QA items
- The 2023 report is currently in external review (QAAG)
- All past annual documents are available on the NADP website under QA
- 5-year samples accounts by network
- Supply QC is included as well and QC results are explained in more detail within the report

Questions?

Zac Najact: The precipitation and data review SOPs are new. They will be reviewed every 2 years now- minor edits in draft area that will be included in next revision.

NTN Sample Collection (Nichole Miller) Proposed change-motion. (This motion was initially brought up in the spring 2024 meeting and then brought up again with a friendly amendment. The motion was tabled after the fall 2024 Executive committee meeting.)

Motion: Change the NTN bag sampling preparation and Bag Sample Change out SOPs to weigh the bucket with the lid on it and begin in January 2025 after all site operators are informed of the change. This will also require a change to the field observer report form so the observer can indicate that the lid was included in the bucket weight. Changes to the SOP's and the FORF will be made by the Fall 2024 meeting.

"It was suggested that there be a friendly amendment."

SOP will need slight revisions-timing of putting the lid on

Change is suggesting lid is put on to the bucket-remove lid weight so the lid would negate itself

- reorganize SOP and photos
- Sample change out – appendix
- FORF edits to box number 6 (lid weight/ lid weight subtraction)

Other procedural changes

- same lid used before and after deploying the bucket
- place lid on bucket before vacuum sealing?
- sticker on lid bags- able to write date on it to keep track of deployment
- edit data entry program
- minor edits on SOPs (NTN supply preparation, NTN sample login, and NTN operations manual)
    - Update any training documents or videos
- feedback from site operators
- not likely best to having the lid on during vacuum
- lid in bag contamination?
- remote sites were informed originally that they could use the same lid during change out• less supplies to transport
- suggestion to take the initial weight with a lid on, but then subtract that lid weight after preparing the bucket to get the proper bucket/bag tare weight. At collection time, use the new lid weight in our calculations. Leave the FORF and field protocol as is.
- Mostly positive feedback- mostly concerns about bag contamination

Discussion of the motion about the motion for the lid:

Nichole Miller: (Explained the motion and current process/ filling out the FORF

Mark Olson: So currently the sample is prepped, lid stays with the bucket to collect the sample bucket, which is why the weight of the lid is tracked. Now you're saying the lid that's on the bucket stays with that bucket to collect the sample. That's the difference?

Nichole Miller: It's removing the lid weight from the equation entirely, so it would be necessary to keep the same lid with the bucket to get rid of the calculation (and zero it our completely).

Right now the bucket is weighed without the lid. With this motion the operator would come back from the field and weigh the bucket with a lid and include the lid weight on the FORF.

MO: Keep the same lid with the sample

NM: Yes, can vary 5-10 grams per lid, so if we do make this change it is important to emphasize that the lid stays with the bucket throughout the entire process. Need to ensure that the bias of the wrong lid weight does not occur, especially on low volume samples.

Ryan McCammon: Doesn't cost extra, save time in the lab, the QA part of it is going to improve. So, I don't see what the hold-up is.

Mike Bell: Part of the EC conversation-wanted clear SOPs in place and then develop an SOP. Like Ryan said, this makes sense, but it should be documented before its approved.

NM: Good point, a lot of more internal moving parts with this change.

John Offenberg: Unlike chemistry measurements, how will you know if this goes wrong?

NM: Precipitation weight (potential negative value of a low volume/trace sample) maybe could make that determination by differences in the expected precipitation weight. A lot of the feedback we received from operators was that everyone is doing it different and not following the current SOP.

MM: Make clear that the site operator has to remember to bring out the same lid- if they get it wrong we don't know it

Eric Hebert: Lid weights are already wrong (weighed at some point at NADP) and scales of operators could be 5-10 g off. The PO could reduce this uncertainty by removing lid weight from the equation

Naomi Tam: Voicing out for stations in Alberta, we were told to use the same lid from the sample going on and putting it onto the sample coming off. A few stations are located in remote areas in Alberta, and currently we have multiple personnel working out of different offices and running for the same station. And their offices are not located within the same town/cities, and there are no infrastructure to store items on site. The proposed changes for the same lid to be used for on and off would not allow us to continue to operate station under this current practices. Or with this change, there will be a need to ship the lid between personnel from week to week.

NM: I did get that feedback from Andrea in Alaska. These remote sites its tricky to bring in. As she stated its between different operators/buildings. Something to consider as well. Having them check the weights of lids on their scales for accuracy as well.

Michael Randall: Simpler for the operators. No more need to independently pre-weigh lids. And only need one lid instead of two per collection. No worse in terms of contamination than bagging a cap for the MDN bottles.

Amy Mager: Eric was observing out in the field leaving the bucket in the field without a lid on (for example, for the next deployment).

MM: Need to address issues at remote sites if we change the FORF?

NM: Yes, if we change the FORF and remove the lid weight altogether that might be difficult.

MM: If the FORF did not change can accommodate for this at the sites that just can't do this.

- Ask Nichole her thoughts

NM: We only requested feedback from long-term operators, need to consider sites that are not responsive/ fill-in operators.

Logistically we can make the change on our end but not reasonable by 1/1/2025

ZN: Who cares about the true lid weight- let them weigh it both times on the same scale, so it's used on both ends of the process. Trusting them to weigh it, just like you trust them to collect it the right way. Sounds great until you see some of these remote site issues, where they would need to handle supplies in a different way.

JO: Sounds like a trade-off between precipitation amount and contamination- which do you care more about? vs Martin-PFAS and are those the same answer?

NM: As a QA person I would lean towards contamination. Precipitation inconsistency -is that 5g going to make or break? (would need feedback from Dana/others)

Amanda Cole: Sample volume is not the primary source of precipitation depth- so not as important as contamination.

Winston Luke: Given the potential lid mismatch, what is 1 sigma of the lid weight, is it 5g? Is it 10g? Let's say it's 10. So, for a 100 mL sample– 10% error- in terms of the distribution of sample volume across the network, how common are these really low precipitation events? It's going to vary from region to region of course.

NM: Many low volume samples, maybe 40% – seasonal and geographical variability

AM: To Amanda's point-we only use the sample weight/depth when we don't have valid precipitation.

ZN: Most sites have reliable electronic rain gage data.

MM: This is more of a contamination issue than anything else.

Martin Shafer: Keeping the bucket clean is the primary responsibility. The weight of the sample is needed for a very small subset of the total number of samples received.

EH:

- Write SOP to take care of this as much of possible. Operators won't all follow the SOP.
- Not thinking of the lab as a barn – wide variance of when and where the bucket is prepared and when (a week ahead of time with no lid, etc.).

As good as you can get it- address both items so it is kept clean.

- Keeping sample lid on the bucket
- Two lids will keep the buckets covered all the time and not even addressing that now- I've seen buckets sit on the ground open, because they only have one lid that they transfer from bucket to bucket.

MM: Could remote sites just have multiple lids in multiple places?

ZN: Can discuss keeping an option open for these sites, vs just having it so that it is a one-off and we just need to add this in. We will have to look at the logistics of that.

MM: Not able to implement by 1/1/25, could vote on this motion now, but would need to change the date of implementation. Can you tell me what that should be? Or, do we table this until the spring?

RT: 1/1/2026-getting the message out ahead of time

NM: A notification to remind operators that once they have weighed the prepared bucket the lid needs to go on it right away. This could go out sooner to cover that issue in the meantime.

Noel Deyette: If you take into account that the operators that were talked to were already the good ones and they are doing it differently, a survey is needed to see what people are really doing. Also, operators without calibrations weights should be able to get those to know the margin of errors on scales. More feedback from site operators is needed.

MM: No point to move on this at this time-will table this – aiming for January 2026 implementation. Will discuss further in spring.

NM: In the meantime we can reach out to site operators for more feedback.

- **The motion has been tabled**

Ammonia Monitoring Network/ALPHA Study – Katie Blaydes

- TN/TP/ snipit: Kat McKinnon will have a poster on this
- Developing a study plan and a way to do a comparison study for the ALPHA vs Radiello comparison
- AMoN started in 2010- only network providing a consistent long-term record of NH3 gas /concentrations in the US
- Radiello vs ALPHA

- proposing to do a co-located study

Why?

- ALPHAs are more cost-effective
- Radiellos are expensive to purchase, clean, prepare for the field

55% of budget spent on the preparation of the Radiellos compared to

31% for ALPHA (62% from 76- ~46k , 513/yr/site, $20/wk/site)

Study Plan

- Co-located study at 10 sites starting 11/19/24

Every deployment will have a duplicate travel blank of each sampler type

- ~9 months to cover different seasons and conditions
- Assess the sampler durability in the field
- velcro adhesive dot – assess ease of ALPHA use in the field via surveys
- Secondary: Compare passive sampler chemistry
- Assess different packaging materials: glass jar vs antistatic bag (Camille Danielson- already approved)
- will run through 8/26/25
- Spring QAAG and NOS findings

Discussion

- Any changes to the proposed study
- Agreement that the ALPHA sampler is already an acceptable method for NH3 collection

QAAG concerns: how much emphasis should we put on the chemistry comparison given that it is already documented in the literature?

- One concern from QAAG: ALPHA has a lower sampling flow rate – will this be able to capture the low end?

AC: Is NADP using similar shelters as those used in the UK?

KB: Much more shallow and more exposed

Is it ok by Spring meeting to move forward?

Tim Sharac: 14 years previous:4-5 months of data by Spring-would make a decision before a complete study- premature?

Melissa Puchalski: Having the summer months is probably important given previous summer contamination with the radiellos

Martin Shafer: Need to discuss if there is a statistically significant bias- how will that be represented in the network bias?

KB: Good point will be noted in the data set

Winston Luke: David question: Philosophical- What is the goal with the money saved?

David Gay: Negotiations, could give at least some of it back to the sponsors-also, inflation

WL: Yes, budgets are under stress

DG: retirement built in

MM: If we say well, we want results through the summer- would they be available by the fall meeting?

KB: Yes, possibly

Through mid-September

MM: Just would we even be able to make the decision a year from now

NM: Initial finalized by next fall, but not all of the data by next fall

KB: Just get you thinking about this

Site Liaison Report Richard Tanabe

- They are continuing to work on the updates that would make it easier to identify site issues more quickly.

Noel Deyette: PCQA update

- PCQA Core Programs 2024

- Interlaboratory Comparisons
    - NTN – 11 labs, 4 samples/month- will transition in 2025
    - MDN – 9 labs, 6 samples/qtr

NTN Field Audit

- USGS implementation from Troy, NY
- ~ 100 sites once a year – all 1L now
- >80 surveys received; 36 samples processed

- MDN System Blank
    - NAL implementation from Madison, WI
    - All sites once a year – PETG bottles
    - ~50 surveys received; 11 samples processed

- Co-located 1-week 2-week study at 20NY through 7/1/2025

- Future of the co-located sampler program is to be determined
- Could include the 1-week 2-week study in a different climate/geographic location,
- Or use data from Tim Sharac's wind rose diagram comparison to alter the orientation of a collector at a site that has the waiver to alter the way the collector is oriented from the traditional western orientation to the direction of dominant wind/precipitation and comparing the catch efficiency.
- 1-week 2-week wouldn't save on operator costs, but would cut down the analytical costs by compositing the 2-week sample (thus, cutting the analysis costs in half).

- PCQA Information Products
  - 2021-22 External QA data release is published
  - 2021-22 SIR has been published
  - Will begin preparing the next External QA report in FY25
  - PCQA website is now offline
  - The most recent data is available through ScienceBase data releases and the most recent report

- USGS NADP sites with telemetry
  - Sites with GOES transmitters are being phased out and replaced with cellular modems, where feasible

USGS Transition Planning for FY25

Ryan McCammon
- Full-time NADP coordinator
- Led the NAL audit October 1st and 2nd 2024

Noel Deyette
- PCQA half-time co-Project Chief in FY25
- Assists with site liaison and telemetry improvements
- QAAG/NOS/NAL Auditor

Greg Wetherbee
- Helping train Ryan
- USGS NADP operations and research
- Continues role as PCQA co-Project Chief
- QAAG/NOS

Discussion

Tim Sharac: We have a list of ~18 sites that are goofed up based on citing criteria and positioned incorrectly based on the wind rose plots. Either following or not following the guidelines based on local meteorology. Have you identified any non-compliant sites that could be used for the field QA project?

ND: No, but USGS has a few extra collectors, so we could deploy at a site relatively close to the Troy office.

TS: Okay, that would be my suggested study if you were to pursue it.

MM: We talked about moving to 2-week sample collection. Greg said this would save NADP. My question is, we're still sending operators to the site weekly, but this could save analytical costs? Shipping? At this point a little financial calculation to figure out what does this actually save us? Or does it keep the lab and NADP afloat? Does it really save the cooperators money?

This is a time to think about if we have enough information to do some calculations on the financial side of this.

ND: It would also save on shipping.

Also need to consider if we want to make any changes to the protocol. Would we want to consider not having operators visit the site each week in the northeast to homogenize the sample vs arid sites. Are we as concerned with that if we have good fitting lid pad seals?

EH: I think it's a great idea to do the colocated study at a place where we can change the orientation of the collector and see how much of a difference that makes.

The 2-week samples: need to do some comparisons.

ND: Agree, it's a great start to look at wind-rose and 1-week 2-week in the northeast, but we should look at other sites across the network before we would want to make any big changes.

MM: Suggests we think about 2-week sampling in a more rigorous way to make some recommendations to determine how we want to move forward. Or do people like Richard or Nichole think this is a waste of time?

RT: If we're looking at this 2-week sampling for NTN, is the end goal to switch the network completely to 2-week sampling or a hybrid of some sites doing 2-week and some sites doing 1-week sampling depending on their funding? Would it be this a-la carte type of network?

DG: I like to save money, but the problem with the 2-week sample is the ammonium.

David Schmeltz: Before we head down this path we need to get input from data users. I suspect the states and tribal nations that are supporting MDN sites or those not in the room, we should engage and consider their needs and utility of the data.

Winston Luke: David, to your point, this discussion is about NTN not MDN. For MDN it certainly could make a big difference. I haven't been involved with NADP for all that long. I thought this was looked at years ago and the community rejected the idea of 2-week sampling

not just because of ammonium, but also nitrate. The ammonium is going to get chewed up and converted to nitrate. Thought this idea was off the table a long time ago.

MM: Noel and I will discuss this further.

ND: This isn't a one-size fits all approach. I think that this could help the network overall, if we are able to do this at some sites and determine what makes sense statistically.

MM: Doing one thing at one site and something different at another could be difficult logistically for the PO. Will revisit this.

Amy Mager: pulling weekly saves NH3/NO3 conversion/ storage…

CAPMoN updates Jason O'Brien

Colocated NADP measurements

- AMoN 3 sites
- MDN 5 sites
- NTN 1 site (Penn State, USGS cut CAN5)

Lab updates:

- Covid shut down the lab for over a year
- Backlog in the laboratory expected to be complete by March 2026
- pH/ Ammonium most impacted at different frequencies (up to 3 years)
- Additional studies on hold until backlog is up to date
- Closing Sprucedale and Flat Valley sites

Additional PM 2.5 monitoring at sites impacted by wildfires

- Conversion of 3 sites from daily to weekly
- Closing of 2 sites in ON (Sprucedale and Flat Valley)

Field Updates

- Instrumentation-continued upgrades to the D400 precipitation collector
- Testing and evaluation of new ozone instruments

Special Studies

- Weekly air sampling method development and testing is ongoing
- Low cost PM2.5 sensors (PurpleAir) installed at 12 sites
- Kejimkujik National Park site selected as part of Radiello/Alpha intercomparison

- Concerns about sampling rate at lower concentration sites (this is a lower concentration site)

Data Updates

- CAPMoN data sets available on the Open Government Portal https://search.open.canada.ca/data (Hint: search "CAPMoN")
- Precipitation data available up to 2019 with 2020-2023 contingent on results of long-term storage study
- Air filter pack 2020 data projected end of 2024
- Submitted 2023 ozone data for consolidated publication with NAPS sites
- New CAPMoN map and site lists (static)
- Enhanced in-house data QA/QC
- Continued work on tablet-based electronic sample history form

Recent publications

You, Y., J. O'Brien, A.S. Cole, L. Zhang, Z., J. Feng, S. Pearson, 2024. Contribution of emissions from the oil sands activities in Alberta, Canada to atmospheric concentration and deposition of nitrogen and sulfur species at a downwind site. Environmental Pollution, https://doi.org/10.1016/j.envpol.2024.124301

Cathcart, H., Aherne, J., Moran, M.D, Savic-Jovcic, V., Makar, P., Cole, A, Estimates of critical loads and exceedances of acidity and nutrient nitrogen soils in Canada with exceedance under average annual of nitrogen and sulphur atmospheric deposition 2014-2016, Biogeosciences, https://doi.org/10.5194/egusphere-2024-2371

Cheng, I., Cole, A., Zhang, L., and Steffen, A, Natural Surface Emissions Dominate Anthropogenic Emissions Contributions to Total Gaseous Mercury (TGM) at Candadian Rural Sites, Atmospheric Chemistry and Physics (accepted)

Robichaud et al., Data fusion of modelled and measured deposition in the U.S. and Canada, Part I. description of methodology and validation of wet deposition of sulfur and nitrogen, Atmospheric Environment (under review)

For more information contact:

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Questions?(None)

CASTNET: EPA & NPS Program Update Melissa Puchalski

4 New sites

Newest: Haskell Indian Nations University (HAS012/KS08)

Decommissioned Cadiz (CDZ171, KY in summer 2024)- after reviewing SAB criteria

EPA discontinued SO_2 measurements (3rd filter) at most EPA sponsored CASTNET sites in July 2024; NPS discontinued SO_2 in 2022.

Discontinued NO/NOY trace gas measurements

Deploying PM2.5 Purple Air Sensors

Filter pack data will be submitted to AQS for easier comparison to CSN and IMPROVE PM precursor data

NPS-CASTNET Outlook

- Budget pressures may result in closing additional filter pack sites
- Replacing ozone analyzers and a few monitoring shelters

Program Investments (EPA)

- Testing new regulatory ozone analyzers
- Evaluating PM2.5 sensors (see Dakota Delong-Maxey and Jayde Alderman's posters)
- Prioritizing infrastructure repairs
- Interactive annual report will be published in ArcGIS StoryMap

Enhanced Air and Deposition Monitoring with ORD/ NO_y equipment

Water soluble organic Nitrogen (WSON) Nate Topie

Wildfire impacts on air quality (black carbon)

Coordination across PFAS wet deposition monitoring sites

David Gay Robotics update

- Original idea-filtering and automated pH
- Engineers said we can't do that at the levels talked about-some filtering applications that have not been pursued

MM: Nomination of NOS secretary: Jason Lynch EPA

Melissa Puchalski seconded

All in favor

Congrats to Jason Lynch

Any final discussion?

MM: Acknowledge lab folks that keep NOS running

Motion to adjourn – Ryan McCammon