

NADP QAAG Meeting Minutes **Wednesday October 30, 2019**

Meeting began at 9:10 MDST. Camille Danielson chaired the meeting.

Attendees:

Camille Danielson, Martin Shafer, Chris Worley, Richard Tanabe, Amy Mager, Zac Najacht, Dana Grabowski, Mark Olson, Bob Larson, Cheryl Sue, Tim Sharac, Melissa Puchalski, Greg Beachley, Maria Jones, Eric Hebert, Greg Wetherbee

Absent: Winston Luke

Approval of minutes from the March 2019 QAAG meeting: Mark Olson moved, Camille second, and the minutes were approved.

1. QAAG Roster: No changes suggested. Camille will invite people to attend QAAG at the fall meeting.

Routine Business

2. Site Survey Status – Maria Jones and Eric Hebert

Maria Jones: Only a few sites left to go for the year: 9 NTN, 3 MDN, 14 AMoN. Fewer sites than normal due to contractual changes. No more AIRMoN sites. Eric Hebert: On schedule, and some sites to be done might actually be deactivated.

3. Site Operations Update – Richard Tanabe

Richard Tanabe: Things are going well. The Network Equipment Depot (NED) has a new employee who is coming up to speed on equipment repairs. PO set up a contract with EEM&S for site equipment O&M issues. Right now, there is no method for cost recovery to individual site sponsors. EEM&S will provide onsite maintenance and repair services if/when they are in the vicinity of NADP sites by request from the Site Liaison.

Items for Discussion

4. HAL (Transition) Lab Analytical Validation Plan Report – Mark Olson/Martin Shafer

Draft report was sent out yesterday for review. Martin: In February, a drafted RV Plan was prepared and modified by QAAG in March. WSLH was notified of accelerated operational start up changing from September to June 1, 2019, which significantly changed the plan for HAL transition. Installed a new Tekran in May. Large majority of components of the plan were executed over early summer. Sent out a draft summary of the outcomes of performance, inter-comparison, and supplies testing. No significant concerns were revealed. Supply QC is excellent. Field comparison with HAL is 30 percent different, but still don't have half of EFGS data, which has been slow in coming. Mark O. – field study had limited time with 3 sites, saw higher results overall for WSLH HAL. WSLH incorporated additional QC compared to EFGS. Greg commented on acceptance criteria and using 75-125% recovery instead of 80-110% as stated. Martin indicated that the more restrictive criteria are goals and the EPA method criteria will be used in production. Greg also commented that we need to establish DQOs, which has been desired/talked about by QAAG for years. Camille indicated that there are established criteria from accreditation and methods that are used.

Greg indicated that we need to put all of that into one document and he will help CAL/HAL to get it done. Tim Sharac noted that the acid vat data indicate that the acid needs to be changed earlier. Mark Olson indicated that the data will be used to modify operations. The HAL will complete the report and send it out for final review and approval by QAAG.

5. HAL QAP – Camille Danielson

The CAL QAP was approved in July with 14 yes votes, 4 missing, no “No” votes. Plan is to merge QAPs for CAL and HAL into one document in the future.

6. Internal Audits – Camille Danielson

Camille will be implementing internal audits of all methods and analysts. There will be a systems audit and then method specific audit. Focusing on CAL first then HAL. Should be completed by January. 19 Final SOPs completed now. There are a 4 shipping , 2 QA, 1 data review , 5 sample prep, and 7 analytical SOPs completed. This includes 1 total mercury and 1 supply prep SOP. There are 5-10 more SOPs needed – mostly QA and data review.

7. Bag analyte/debris study – Camille Danielson

Chris Worley presented recent data showing reductions in NH_4 , NO_3 , SO_4 concentrations with bag liners. Might be an adsorption or biological issue, but not sure. Designed a second study to look at the phenomenon. Lots of graphs produced/presented, including comparison of bottles, bags in bottles, bags, time series, other components. Losing analytes in the bucket as well. Looks like there is a bias but similar to buckets. Going to discuss this in NOS. Next steps is to do bucket/bag comparison at Madison NTN site, figure it out, and implement bag sampling in spring of 2020. A brief discussion between Greg, Camille, and Martin about detection limit calculations occurred.

Did 20 DI rinse samples of bags and noticed debris on filters more commonly when the solution contacted the lids than when the samples were not shaken/stirred. So, the lid seems to be an important factor in the process of cleaning supplies. The mass of these materials are difficult at best to weigh.

8. NTN Bag Update – schedule/plan – Richard Tanabe

Richard Tanabe: Shooting for spring/early summer of 2020 to implement bag sampling after lab gets more information on analyte stability.

9. AMoN Shelter “Audit” – Richard Tanabe

Started in 2017. Put on back burner during transition. CASTNET does this every year, and NTN/MDN site is once every 4 years. AMoN checklist should be done on an annual basis. Amy Mager: A column for change in conditions should be added instead or in addition to the “new” column. Bob Larson: would it be good to send previous checklist for comparison? Risk might be that operators would just blow it off. Melissa Puchalski: Fine with checklist, but in future make notes on characteristics of pastures and

agricultural operations (e.g. crop changes). Richard will make a .pdf version of the checklist. Frequency of collection of data will be annual.

10. Data Updates – Amy Mager

Creation of an official NADP procedure is in progress for database editing and data removal. Need procedures on how data are changed and tracked. Started occurrence reports and documenting changes for current data removals.

11. Bromide Data Removal – Bob Larson

Bromide data are not actually removed from the database tables yet because it would “break” other programs that need to be modified. Replaced bromide data on the web with -9 (missing data) web. Removed the bromide maps, and they are in an archive. In a few months data will be removed and the columns reformatted. Data downloaders will be notified as possible.

12. DMAG Update – Amy Mager

Data status and changes to map scripts were discussed in the Data Management Advisory Group. Encryption of web traffic in 2020 will start. Chris Rogers (Wood) indicated that TDep products are now available on the web site. Coding and error flagging consistency is being addressed by DMAG.

13. AMoN acidity matching standards correction – Chis Worley

Chris Worley wanted the minutes to reflect the following. Previous QAAG meeting minutes indicated that acidity matching of AMoN standards is occurring. The actual bias is less than previously estimated and is approximately $-0.006 \text{ mg/L NH}_4^+$ for non-acidity matrix matched calibration standards. The issue is now resolved. The CAL is using the acid-matched calibration standards.

14. AMoN Anti-static bag study – Camille Danielson

Camille reiterated that the goals of this study are to limit AMoN breakage of the samplers as well as the jars and to reduce shipping costs. A comparison study with anti-static bags and routine methods showed comparable results between using anti-static bags and glass jars. In fact, the bags appear to be better at limiting bias in NH_3 . But, there is no significant savings using bags as compared to jars. There now seems to be no significant sampler breakage occurring due to changes in the cleaning of samplers as well as better lots of radiellos. Therefore, CAL is backing off of moving to from jars to bags, but the desire is to be able to use anti-static bags for the Radiellos if needed. Mark Olson moved to approve use of anti-static bags as an alternative method for shipping AMoN passive samplers. Richard Tanabe commented that bags would be useful for international shipping. There are other benefits to the bags for reducing contamination and easier storage of the samplers. Greg seconded the motion. The motion passed.

15. AMoN Network moving from triplicates to duplicates – Camille Danielson

CAL's current protocol is 12.5% triplicate sampler deployment to AMoN sites. Some individual sites want to receive triplicates every deployment and they are paying for that so current percentage is close to 15% of sites getting triplicates on a rotating basis. Camille sees no benefits to triplicates from reviewing the data. Due to the revelation of no added value of triplicates versus duplicates, expansion of AMoN, and growth of workload, the CAL is proposing to go to 15% of sites getting duplicate samples for quantification of variability. Mel Puchalski indicated that she is comfortable with going to duplicate sampling. Last week Mel met with other EPA monitoring networks, and they want to add AMoN to potentially ~250 sites! Mel moved to approve the CAL's proposal to move to duplicate samples at 15% of the sites or a comparable percentage by January 2020. The percentage of sites that duplicates need to be sent to in the future to be assessed by looking at variability of current triplicate data. Amy Mager seconded. Motion carried.

16. CAL QAP – Camille Danielson

The CAL's Quality Assurance Plan was approved by online survey vote on July 1, 2019 with 14 "Yes" votes, 4 votes missing, and 0 "No" votes.

17. Minimum sample volume for reporting Hg concentrations – Robert Larson

Bob Larson talked about uncertainty in measurements of MDN bottle weights to obtain tare weights for sample volume (depth). Currently, 20 PTGE bottles are weighed, and the average is used. But, the bottles vary in weight by ± 0.5 grams. This is important because 1.5 mL limit = minimal volume for reporting concentrations. Greatest difference between EFGS and WSLH intercomparison study is for low volume samples, which might be influenced by bottle tare weights. Mark Olson will look into this issue and obtain some data for presentation at the fall meeting. HAL is now tracking each individual bottle with tracking stickers. There might be a way to better measure tare weights and sample volumes. Bob Larson suggested that after samples are analyzed, tare the bottle? Mark Olson – would rather do a measurement on the front end of the analysis due to potential loss of sample.

18. Low volume Filtration Study – Camille Danielson

Camille presented the results of a study of filtration of small volume samples using an Acrodisc syringe filtration technique. Camille and Martin sent out a document that presents the results of the study. Differences between Acrodisc and standard (47 mm diameter) filters are negligible. Camille proposes that a new protocol to change WI and WD sample preparation. WI samples would have at least 4 mL and < 14 mL, and these would be filtered with the Acrodisc, diluted to 15 mL, and then run for a complete analysis except for pH and specific conductance. WD samples will have at least 14 mL and <27 mL and would have the same Acrodisc filtration after measurement of pH and specific conductance. Trace samples will be defined as <4 mL and will not be analyzed (guessing around ~ less than 500 samples per year out of over 14,000). The protocol will cost approximately \$1,000 per year for the acrodisc filters and syringes. Greg moved to accept the protocol. Martin seconded. Amy amended that the start date will be for samples received after January 1, 2020. Greg accepted the amendment. Motion passed.

19. CAL/HAL/PO External Review Plan – All

Complete CAL review and abbreviated PO review was done in 2018. Now that everything is integrated into the WSLH, perhaps combined, simultaneous reviews would be advantageous. Greg opined that PO reviews could be done on the Friday after spring meetings by Executive Committee volunteers, and that a separate lab review could be done by another team at another time. Different analytical chemistry expertise might be needed for NTN and MDN operations. The subject will be brought up in NOS next week.

20. Litterfall QA Needs – Martin Shafer

Martin – standard representativeness, homogeneity, and standard reference sample analysis will be done by the lab. The laboratory processes are straightforward. An intercomparability with USGS lab should be implemented. Field QC is more complicated, such as net material blanks and other testing. Apparently, collection period length has been investigated. Sample stability is a question for investigation, but there are no plans for field QC experiments this year. HAL will get collected samples from Doug Burns (USGS) this year, and then the equipment will come to the HAL for testing after the collection season is done. Mark Olson preformed the first year's analyses for LeafNet, but he does not remember QC samples being run. Amy Mager is working on setting up a meeting with Doug Burns to talk about network issues at the fall meeting next week.

21. USGS QA Reports and Data – Greg Wetherbee

Greg published the 2015-16 external QA report at the end of 2018 – See USGS Scientific Investigations Report (SIR) 2018-5034. The 2017-18 USGS external QA report (SIR) is in peer review right now by Roger Claybrooke (USGS) and Bret Schichtel (NPS). Roger is also reviewing the Data Release for the 2017-18 data which will be published just prior to the SIR. The reviews are due by Thanksgiving. Greg expects the 2017-18 SIR to be published in January 2020.

OLD Business

22. Precipitation sensor data access – Greg Wetherbee

Greg found the precipitation sensor study data. It is extensive and difficult to work with and evaluate – lots of 1s and 0s for open/close signals. Some statistical analysis was started, but no conclusions were reached. Greg will try to harvest some information from the dataset and provide it to the QAAG in the coming months.

23. PTGE bottle evaluation data access – Greg Wetherbee

Greg mentioned that the data used to approve PTGE bottles is in the hands of EFGS, and we need to ask Bob Brunette for them. Greg called Bob and left a voicemail asking for the data. Ryan Nelson's powerpoint presentation could provide the only documentation that we have to justify changing from glass to PTGE bottles for MDN.

Greg moved to adjourn. Richard seconded. The meeting adjourned at 11:35 MDST.