

Network Operations Subcommittee Meeting
Portland, ME
October 2, 2012

- Motion to approve minutes by Olson. Seconded by Ludtke. Minutes approved.

- USGS External QA (Wetherbee)
 - In FY 2013 collocated samplers will be run at 02CO and CO02 (N-CON/ACM), 13CO and CO13 (2 Noah-IV gages); 00CO and CO00 (N-CON/ACM and 2 Ott Pluvio collocated); and CO98 and CO89 (2 ACM and 2 Noah-IV).
 - Bag sampling study at Arvada, CO (GS01 and GS02). Results will be used to determine if operators can collect samples in bags instead of buckets. So far the results look promising with low contamination.
 - The NTN field audit program will continue in 2013 with 100 samples per year
 - The NTN inter-laboratory comparison program will include 7 labs (possibly 8). USGS will ship 48 samples per year per lab.
 - The MDN system blank program will remain the same with 25 samples per quarter.
 - The MDN inter-laboratory comparison program includes 11 labs this year. USGS will ship 24 samples per year per lab.
 - The MDN blind audit program was discontinued in 2012.
 - The CAPMoN/NADP comparison is overdue, but on hold. USGS intends to do this analysis in the upcoming year.
 - USGS will assist the PO with setting data quality objectives (DQOs) for the networks.
 - USGS publications
 - Effects of equipment performance on data quality – USGS open-file report (submitted for approval)
 - 2009-2010 external QA report (nearly complete)
 - Elemental composition of particulates in cloud water by neutron activation analysis, Mount Bamboo, Taiwan (planned)
 - 2011-2012 external QA report
 - Analyzed for Sr-90 in 34 samples collected during the Fukushima disaster, but no Sr-90 was detected in any of the samples.

- AMoN
 - Field Forms, Coupling Nuts, and Travel Blanks (Lehmann)
 - AMoN Field forms
 - Updated field forms for AMoN include site observations – modeled after the CASTNET field form. Additional information will be used for deposition modeling.
 - Scott Dossett recommended using ‘vegetation’ instead of ‘leaves’. Dave McTavish suggested using ‘surfaces’.
 - Coupling nuts for AMoN samplers

- The binder clips will be replaced with coupling nuts. Should hold the samplers on much better inside the rain shield.
 - AMoN Travel Blanks
 - CAL began using Decon 90 to wash the Radiello bodies in July. Since changing the cleaning procedure, the CAL has seen lower NH₃ concentrations in the travel blanks. In 2011, 3.2% of travel blanks were elevated; in 2012 9.1% have been elevated.
 - Motion: The number of travel blanks deployed will be reduced to 1 in 4 in January 2013. Travel blanks will be randomly distributed across all sites. Motion to approve by Greg Wetherbee, second Dave McTavish, unanimously approved.
 - Phosphate is an issue with the travel blanks. The bodies and cores are made of the same material which has an affinity for phosphoric acid. Ammonia binds with the phosphate.
- Update on USGS Rain Gauge Upgrades (Ludtke)
 - Phase 1 of the USGS equipment upgrade began in 2010. A total of 64 sites needed e-gages installed. The last raingage was installed in Aug. 2012. Upgrades included wind shields (where needed) and several sites received new batteries and wiring.
 - There were 64 Ott Pluvio II's, 8 Ott Pluvio and 4 ETI Noah IV raingages installed
 - Phase II of the upgrade began in 2011. 73 sites received N-CON replacement collectors for the Aerochems. The upgrade posed a problem for sites with DC power – the new collector requires more power. Out of the 76 USGS sites, 22 use DC power.
 - There were 58 N-CON collectors installed with 18 Aerochems that still need to be replaced. Ten out of the 18 sites left will need solar upgrades to power the collectors.
 - “Lessons learned” from installing the NCON collectors:
 - Convert to AC power if at all possible
 - The collector uses 15 Watts/hour of 110 v AC power
 - To install power at the DC solar powered sites you need a system that produces 250-400 watts of power and three, 105-amp/hr marine grade batteries
 - Testing Tripp-Lite APS750 PowerVerter at CO99 and NY68 for sites that only have DC backup. The Tripp-Lite inverts DC power to AC when the power is lost.
- Equipment Testing Update (Rhodes)
 - Sensor study
 - Greater variability in the operation of grid sensors compared to the Thies (optical) sensors.
 - Thies sensors configured with factory default settings and with N-CON Systems settings behave similarly
 - CAPMoN and Eigenbrodt sensors behave similarly, and cycle more than either the NADP grid sensors or the Thies sensors

- Upper case of Thies sensor is cracking. Exact cause, not known. The sensors are expensive to repair; ~½ the original price to refurbish the sensors. Manufacturer has agreed to sell replacement parts to NADP directly.
 - Bag versus Bucket sampling
 - Bag sampling could be a cost savings for NTN and AIRMoN operations.
 - Bag sampling is important for shipping internationally (cheaper).
 - Comparison between bucket and bag 24-hour results look promising. Chemistry results indicate a loss of ammonium and phosphate in bucket samples for both 24-hour and 1-week tests. No loss is observed with bag samples tested over the same time periods. Testing used QA solution containing phosphate.
 - Bondville has 2 bag samplers (ACM collectors) with comparison against the IL11 NTN collector. Arvada is also running a bag versus bucket comparison using 2 N-CON collectors and an Ott Pluvio²raingage.
 - MDN evaporation issue
 - A modified thistle tube was tested. The bulb on the modified thistle tube is between its location on the ACM thistle tube and the N-CON thistle tube. Sample loss was observed. Mark will work with FGS to determine how to proceed next.
- Belfort Digital Rain Gage Demonstration (Robinson)
 - New, low cost 3-transducer electronic precipitation gauge with heated inlet
 - Frequency is measured by 3 vibrating wire transducers that retain their calibration
 - Data can be accessed in real-time online
 - Gage includes a digital processor and corrects for temperature
 - Zero reset button simplifies calibration and installation. To install the gage, level the unit, add anti-freeze or oil (if used) and press the zero reset button.
 - The gage uses less power and is less expensive than OTT and ETI. The cost of the gage is \$3,900.
 - The output from the gage can be configured to the users/NADP's needs
 - One of the issues from the PO tests was the amount of pre-charge solution needed. The gage now has a weight attached to the bucket holder making the pre-charge solution unnecessary
 - Questions were raised about testing for adoption by NADP. Should the next step be to test the "improved" Belfort gage at an NTN site?
- NOS Secretary Election – Amy Ludke was nominated as the next NOS secretary. Motion by Eric Hebert, second by Mark Rhodes. Motion passed.
- Motion to adjourn (Wetherbee). Meeting adjourned at noon.