Network Operations Subcommittee

May 3, 2011

Pensacola, FL

Minutes from previous meeting approved – Motion by Kevin Mishoe, second by Mark Olson

QA report – Weatherbee

Mass N-CON/Bucket Comparison, sometimes one has more precipitation, sometimes one has higher concentration, but not consistent between collectors.

CO89/98 ACM Collocation. Looking at data variability. Upgraded solar panels and telemetry. 50% more cycles on one, the other had more volume. 2% precipitation difference which is good.

CA50/50CA collocated Ott Pluvial 2. Bucket lid broke lose during snow event. ACM motorbox died during the same event.

Concentration – typically higher in N-CON. Greater difference between ACM and N-CON vs ACM to ACM

Field Audit. Pour 75% into bucket, process, send with remaining 25% to lab. Equipment rinse audit, look at maximum solute loss

In general seeing less contamination than 10 years ago, steady over past few years

Interlab comparison – 8 labs, 4 blinds/month. Looking at CAL variability. CAL only one measurement out of control (Ca). Bias was negligible, variability low, always less than 1 f-pseudosigma from MPV.

Blanks – no hits on blanks

MDN – Interlab comparison, looked at HAL bias and variability

Blind Audit, HAL percent recovery historically 93-95%. Some outliers but probably operator confusion of how to process sample. Indicated low bias

System Blank, Identify maximum contamination in MDN samples. High was 0.3 ng/l, most were very good < MRL.

90% confidence in 90% of samples, max is 1.5 ng/l. Consistent levels over past few years. 99% of data are above this level, which meets DQOs.

No break in consistency is comforting. Greg is not concerned about quality. He was very satisfied.

AMNet - Olson

Sites holding at 23, lost 5, gained 5.

Funding – invoices went out Nov 2010.

Three site visits conducted in FY11, 20 to go.

Taiwan – Presented AMNet to Taiwan EPA, site visit to Mount LuLin. Might join network.

GMOS – Global Mercury Observation System planning on land, water and sea mercury measurements. 25 land based sites. Presented AMNet SOP's and QA program to GMOS in April 2011. Adopted AMNet SOPs and want to use QA program for data. AMNet Site Liaison on GMOS SOP committee.

All good news

Litterfall - Risch

Presented preliminary 12 point plan for NADP Litterfall initiative.

USGS offering reduced cost for analysis for 1-2 years, estimated $2000/site/year

Discussed formation of a group of advocates to pursue litterfall as a new initiative within NADP.

For combined NOS and DMAS session Kevin Mishoe took notes.

NOS

Weds, May 4, 2011

Equipment Testing update – Rhodes

66 Delrin T washers replaced on ACM samplers, 134 remaining

N-CON dual chimney, 3 sites testing them WA, WI, PA. Work in progress.

Difference ACM/N-CON– differences track pretty well with few outliers. Need to investigate the outliers. No data from PA site. Need more snow samples and evaporation testing before approval.Operator comments:

Pros – easier to work with, smaller foot print, better at melting snow

Cons – Heater fan interferes with overflow bottle, trace metal stand too short.

AMon Travel Blanks – Rhodes

Periodic increase in travel blanks, some as high as 0.41 $\mu g/m^3$ which produces a quality rating of C

Appears to be isolated problem, not site specific.

Plotted all blanks by date, one peak attributed to contamination from blue sampler bodies as received from the manufacturer.

Focus on CAL contamination sources, but lab blanks are clean – mystery.

Lingering questions – Blanks, what do they mean? Should we continue? How do we make data meaningful?

Will start to track individual sampler bodies using bar coded bodies.

Changes in CAL – Washing shipping bottles in dishwasher now. Decrease storage time in field, current travel blanks sit with sampler in field, maybe send back with sampler from previous period to reduce time in field? Reduce potential for contamination but does it represent sample?

EEMS Site Survey Status – Hebert

In 2010 completed 95 surveys at 85 locations of which 63 were NTN, 32 were MDN and 0 were AIRMoN. 10 sites had collocated NTN and MDN.

Raingages – 47 Belfort and 38 E-gages were serviced. 23 sites required windshields of which only 14 had been installed. Sites need to install windshields.

Of the 21 sites that were visited for a second time, about half improved, the other half got worse. NY10 fixed 6 things and they were the most improved site.

Grid sensor activation – Most sensors were above ambient temperature indicating they were working. One was bad. Most were hitting maximum temperature after activation. 3 required replacement.

Belfort raingages – 47 checked, some not so good on post calibration, but all 3 got better. The 3 that failed were due for e-gages, and they have been installed.

E-gages performing well. One "barely" out of calibration.

MDN Funnels – some were adjusted improperly, room for improvement.

MDN: Some sites do not meet siting criteria. Split boots, brackets on lid, arms misaligned, improper modifications to collectors, MDN cooling fan louvers cracking, insulation around chimneys is cracking to name a few.

EEMS internal QA – Based on duplicate data entry 0.75% of the field data had errors. That's about half from last year. The QA data showed 0.37% errors which was about double from last year. Total of 0.56% data entry errors which were corrected.

EEMS is performing experiments using the datalogger in the e-gages to support the development of low flow collectors to monitor flow rate and perform some analyses. Collaborating with Eric Edgerton. EEMS is doing this on their own initiative with no funding from NADP or EPA.

MDN Evaporation Testing – Rhodes

Measure sample loss from MDN sample bottles installed in collectors that cannot open for a week.

Cooling fan operation appears to be link to loss in ACM

N-CON sampler is fine, little mass loss over the course of a week.

Compared measured and target concentrations for samples experiencing losses. Some saw gains in concentration, some decreased, puzzling, expected change in one direction. Seeing some loss/gain in concentration for all the samples.

How much of the data is impacted? Compared catch percent change to months, snow months, no snow months and all the months.

Compared N-CON to ACM. ACM bottle catch is less. In general, N-CON performs better.

A motion to disconnect the cooling fan on ACM samplers was tabled pending more testing. Ideas for mores tests included diverting the flow around the bottle and reducing the exchange rate within the sampler.

USGS Equipment Upgrades – Ludtke

In the fall of 2010 about 10 new e-gages had been installed at USGS sites.

Requested staggered shipping but they all came within 2 weeks. Several units were incomplete which created challenges, now the NED has created a care package and installation guide

USGS has a regional installation plan which is going well. As of last night 45 gages have been installed leaving 35 remaining to be installed before Sept 30, 2011.

USGS has been using telemetry for a real time network at 2 sites. Science Centers can track lid openings, battery power, solar charge rate among other parameters. NADP can pull data from USGS site, 2 sites are operational. The system can monitor up to 15 parameters and display on the web.

Installation issues include solar panels, Batteries, wiring, protective fences, etc.

Phase 2, NTN collector replacement – Next contract should be awarded in 30 to 60 days and will include that they ship 7 per month. Expect to complete installations by the end of FY12.

NED Equipment Depot – Layden

ACM Collector failure of 89 motors in 2010/11 compared to 112 motors in 2009/10. 65 sensors failed in 2010/11 vs 55 in 2009/10.

N-CON samplers lost 2 motors and 2 sensors in 2010/11.

E-gages. Only a few problems with the NOAH and OTT style rain gages were experienced. Batteries, chargers and Bluetooth dongles basically cover it. Spare parts are on hand.

COMMENT – In the 1st week of February a snow and ice storm was predicted. The PO called 25 sites within the storm region and advised them to place the sampler in bulk sampling mode. The suggestion was made in an attempt to save motorboxes. The questions – is this a good practice? It was determined the SOP should be modified to include a statement on sampler use during expected severe weather events. Something formal will be presented in the fall in time for next winter sampling.

Litterfall revisited – Risch

Carry over from NOS day 1

Marty will form an advocate committee and create a formal 12 point plan. The plan will be presented in the fall of 2011.

Considerations for Trace Metals – Burnette

About 20 sites have expressed interest in trace metal sampling

ACM collectors have been modified with a second sample collection train. N-CON dual chimney can also be used.

EPA method 1638 is being used, MDL's have improved and trace metals are being seen in wet deposition.

The MDN coolers have been modified to include trace metal sampling apparatus with MDN supplies.

Ongoing comparisons between single and dual chimney collectors are being conducted.

Looking to bring formal 12 point plan to the floor in the fall of 2011.

Cost will be comparable to MDN.

Adjourn – Moved by Jason, second by Gerard.