MINUTES
NADP Network Operations Subcommittee (NOS) Meeting
Tuesday, May 2 – Wednesday, May 3, 2006
Historic Mission Inn, San Diego Room (5/2) and Music Room (5/3)
Riverside, CA

Attendance: A spreadsheet containing the names, affiliation, and contact information for the attendees was created by Kathy Douglas. The meeting began at approximately 1:35 p.m., May 2, 2006 in the San Diego Room of the Historic Mission Inn Hotel. Mike Kolian, 2006 NOS Chair

1. Introductions and meeting called to order - Mike Kolian, 2006 Joint Chair (USEPA, Clean Air Markets Division)

2. Mike Kolian moved to accept the NOS meeting minutes for the fall 2005 meeting in Jackson, Wyoming. Tom Jones (ATS Chester) seconded the motion, which was unanimously approved.

3. Siting Criteria Proposed Changes – Chris Lehmann (ISWS, NADP Prog. Office)

- A substantial amount of discussion focused on rules pertaining to site location with respect to large animal operations for NTN and AIRMoN. Jane Rothert (ISWS) suggested that the rule be annotated to provide rational as approximately 200 kg/month of ammonia emission based on emissions factors for Carnegie Mellon University ammonia emissions model.
- Guidelines on galvanized metal and treated wood will be footnoted to specify: "This is of special concern if trace metals are to be monitored."
- There was considerable discussion on wind shielding rain gages and collectors. Marty Risch (USGS) suggested that the windshield guideline be changed to a rule. Marty then moved that a formal NOS discussion on wind shields be presented at the fall 2006 meeting using information assembled by USGS-BQS and PO. The motion was seconded by Mark Nilles (USGS) and unanimously approved.
- Mark Nilles motioned to approve the new siting criteria as presented by Chris and amended in the present meeting. Marty Risch seconded the motion, which was approved without opposition.
- Chris Lehmann moved that the new siting criteria be retroactively applied to sites surveyed by ATS-Chester as of January 2006 and to all sites surveyed after May 15, 2006. Jane Rothert seconded the motion, which was approved without opposition.

4. USGS External Quality Assurance Project Report for 2005 – Greg Wetherbee (USGS, Office of Water Quality, Branch of Quality Systems)
   - Greg began by showing the co-located sampler program data for AZ03, WI98, and VT99, which indicates slightly higher median absolute error than historical results.

- Input was solicited on how to proceed with the long-term co-located sampler program given that there is no decision on a new NTN collector. Options include: Testing three different collector configurations, one at each site or all three at WI98, continue to use co-located ACM collectors at AZ03 and VT99 and a YES collector at WI98, purchase YES collectors for installation at AZ03 and VT99, and various other combinations.
- Field-audit results show that the proposed DQO for network sensitivity was achieved for 2005. A small amount of constituent loss (e.g. by various reactions/processes) is also quantified using the field-audit results, which is evident primarily for hydrogen ion, nitrate, and sulfate.
- Results for the interlaboratory-comparison program for CAL are some of the best observed in many years. A slight positive bias is observed for most CAL analyses. CAL blank analyses only turned up one hit for potassium.
- MDN system blank data indicate that MDN mercury contamination is less than the 0.15 ng/L reporting limit. Results for HAL interlaboratory-comparison analyses indicate no bias, and approximately 96% of samples analyzed were within statistical control in 2005. Approximately 60% of HAL blank analyses were at or below the median blank concentration (MPV). A MDN blind audit program is going well and producing data which indicate that the HAL is providing accurate data.
- New USGS reports to be available soon include the 2004 External QA Results Scientific Investigations Report, Field-Audit Site Operator Training Open-File Report on CDROM, and a journal article on MDN variability has been submitted to Environmental Monitoring and Assessment (in peer review).
- New studies for 2006 include a high altitude rain gage comparison at Niwot Saddle Southeast – CO90, a sample evaporation study, and a pilot NTN Blind Audit.

5. Network Equipment Depot Report – David Gay (ISWS)

- Good news is that equipment reliability is improving. An intermittent problem with lid openings has been corrected.
- Comparing ACM to NWS stick gage yielded mean difference of -0.01 inches.
- LODA threatening to not make old ACM anymore. New LODA ACM has slightly different sensor, but it is mechanically working well. David will test it in a walk-in freezer next. David also showed the Jim Osborne alternative side-mounted, linear, lid actuator which eliminates a board in the motor, the clutch and counterweight, but keeps what works. This removes 2 components that break, and provides more reliable and powerful collector. The option allows for a deeper bucket to be used by eliminating the crossbow design. It also allows for 2nd sample train for MDN collector and adjustable seal tension. This actuator is harder to install on existing old collectors, and it draws more power than the standard ACM. The retrofit kit would cost about $350.
- Tom Jones (ATS-Chester) moved to have David perform accelerated wear testing on modified ACMs using each type of actuator to generate data for review at the next meeting. The motion was seconded by Marty Risch (USGS) and approved without opposition.

- David provided an overview of the MDN intercomparison between N-CON and ACM collectors. So far, N-CON has higher average concentration, especially for snow. The N-CON heater could be bigger. Lid packs snow into funnel or scalps snow off top of funnel, but it has better capture of precipitation with higher mercury concentrations.
- David also demonstrated that costs could be saved by replacing rubber boots for the ACM lid arms with Gortex ones. Jane Rothert (ISWS) moved that the MDN ACM rubber boots be replaced with Gortex (when replacement is needed) to save at least $160 per boot change. The motion was seconded by Bruce Rodger (Wisc. DNR) and was unanimously approved.

The meeting recessed at 5:18 p.m.

The NOS meeting resumed at 9:00 a.m. on May 3, 2006 in the Music Room of the Historic Mission Inn Hotel.

6. Site Survey QA Program – Mike Kolian (USEPA)
- Contract renewal in 2006. New contract considers electronic gages and includes AIRMoN sites.
- ATS-Chester surveyed 81 site locations and 96 sites to date during 2006. Plan to survey 103 sites by year's end. Approaching 4 years for some site surveys when 3 years is the target.

7. Siting Criteria Summary – Chris Lehmann (ISWS, NADP PO)
   - 444 violations in NTN, 1.9 violations/site for AIRMoN with 17 total (each site has at least 1).
   - 80-90% of Belforts in calibration at the 0"-6" range, but turnover problems remain at the 6"-12" turnover point. The 6"-12" range falls out of calibration most often.
   - Need calibration routines for new electronic gages in the 0"-1" range.
   - Need to do a better job at posting siting criteria violations on web. Tom Jones (ATS-Chester) asked if it is important to keep measuring all parameters in a survey. Are the data collected by site surveys being used? Chris Lehmann assured Tom that indeed the data are being used by the QA program, but not by data users directly.

8. DQO overview – Chris Lehmann (ISWS) and Greg Wetherbee (USGS)
   - The attendees were either supremely disinterested, bored, or perhaps confused by the riveting presentation of the status of Data Quality Objectives for NADP.
   - DQOs have been discussed, evaluated, and documented in a draft appendix to the QAPP which will be refined in the coming month for final presentation at the Executive Committee meeting and Fall Technical Meeting, hopefully for final approval. DQOs are quantitative and qualitative statements about NADP data quality, which are used to indicate when NADP data-collection processes

may need attention to remedy situations that adversely affect data quality. The DQOs are not intended to qualify NADP data as "good" or "bad" data.
    - Input on the draft DQO document was solicited by Chris and Greg. The chairs of each subcommittee will be asked to review and comment on the document when it is completed in June.

9. Southern Ontario Ammonia Passive Sampler Survey – Dave MacTavish (Environment Canada)
    - 72 passive samplers deployed to collect ammonia samples. Network setup and operations going well. A new site, OK08, is now operating at an ammonia-rich area in Oklahoma.
    - Network will run for 1 year to May 2007. The network is moving forward, and Dave expressed appreciation for NADP support.

10. Alternative Rain Gage SOP – Chris Lehmann (ISWS- on behalf of D. Gay)
    - Chris presented an overview of the basic steps for obtaining precipitation depth data from alternative sources (NWS, NOAA, etc.) in the event of an equipment malfunction or destruction by natural forces. The new SOP specifies which data will be substituted in various situations so that computation of deposition may be done despite loss of the Belfort rain gage.

11. Preliminary NADP/CAPMoN Co-Located Site Data Comparison – Greg Wetherbee (USGS).
    - Greg described the collaborative effort between USGS, NADP PO, and Environment Canada to use statistical methods of Sirois, Vet, and Lamb (2000) to compare NADP and CAPMoN data for the period 1994-2005 and every 3 years henceforth. The comparison will provide data users with some justification and methodology for adjusting NADP and/or CAPMoN data for cross-boundary analysis.
    - Preliminary results indicate similar comparison for post 1994 and pre-1994 data. Poster or oral presentation of results may be made at fall 2006 meeting.

12. Viasala Rain Gage Evaluation – Roger Claybrooke (ISWS)
    - All-weather precipitation gage, Viasala model VRG101 from Finland is being tested. Same load cell as NOAH-IV with 25-inch capacity and a 400 sq. cm orifice.
    - One problem is that the insert sometimes touches the bucket and causes false positives. Wind can also cause false positives.
    - Overall, compared well with NOAH and NWS stick gage. It is power hungry. The gage has a weather-proof shelter for datalogger (MAWS100). Only 3 in USA at moment. Compares within 0.02" of stick gage, which meets NADP criteria.
    - The cost of the gage is $3,000, not including datalogger or enclosure.

The meeting concluded and adjourned at 11:08 a.m.