QARTOD VI
Dissolved Oxygen
July 31-August 1, 2012
Hosted by the National Data Buoy Center

Purpose: to collect data and procedures to help facilitate the writing of a Dissolved Oxygen QC cookbook that focuses on coastal, real time and those electro-chemical sensors such as semi-permeable membranes or fluorescent-based technologies . Manual must be written with the fidelity and granularity to be codeable as a deliverable to the Regional Associations and ocean observing community. The RT in QARTOD is for real-time. We intend to provide only tests that can be accomplished in real time. Delayed mode processing that requires a human-interface or post-calibration numbers will not be addressed. The algorithms will not be overly complicated and we are holding each of the QARTOD meetings to determine coefficients that will be included in pretty basic QC algorithms.

Constraining the problem
- Only semi-permeable membrane & fluorescence-based DO sensors
- Only coastal (what is meant by coastal)?
- What is meant by real time (human vs. machine)?
- Code-able output (necessary, but not sufficient)
- Not metadata format, not M-M data interface, not definitions
- Profiling?

Location: Conference Room in B3205 (new NDBC building), across from the Director's Office

Agenda

Tuesday, July 31st

8:00	NDBC daily operational brief	NDBC Mission Control Center theater
8:30	coffee, doughnuts	
8:45	Opening remarks; Introductions	Dick Crout
	- Include brief overview of DO experience and expertise	
9:00	Workshop Goals	Ray Toll
9:15	DO QC Manual template	Mark Bushnell/Helen Worthington
10:00	break	

DO Partner Overviews

10:15	USGS	Dennis Demcheck
10:30	CBIBS	Doug Wilson

10:45	EPA/Rutgers	Darvene Adams/Josh Kohut
11:00	GLOS – Fresh water	Scott Kendall
11:15	CalCOFI	David Wolgast
11:30	UCONN	Kay Howard-Strubel
11:45	Baruch Institute	Melissa Ide
12:00	VIMS	Grace Cartwright
12:15	Working lunch	

Sensor Tests Discussion

12:30-3:00 Membrane-based Technology discussion	Leads
- Wet Labs Water Quality Monitor	Ian Walsh
- SeaBird SBE 43	Carol Janzen
- (Hach) Greenspan Galvanic DO 300/350 series	Ian Walsh

3:30 break

3:00-5:00 Fluorescent-based Technology discussion

- YSI Reliable Oxygen Sensor (ROX)	Mike Lizotte
- Aanderaa Oxygen Optodes	Josh Kohut

5:00 Wrapup

Wednesday, August 1st

8:00   NDBC brief

8:30   Recap from day 1   Doug Wilson lead

9:00   Mark and Ray lead discussion on QC Manual. Helen to present report template

12:00 Adjourn

<u>**Guidance**</u>

DO partners should focus their comments on their DO processes and procedures that can support this manual.

For vendors, for very specific sensors, include

- Causes of degradation & failure
- Description of what degradation & failure looks like
- How to distinguish degradation & failure from real world signal
- Very specific code-able test descriptions

The agenda allows time for the group to collectively discuss the specific tests, their applications to the specific sensor, and best ways to provide the codeable verbiage.

<u>**Example list for the membrane-based sensor**</u>

Minimum DO threshold
Max threshold
Rate of change
Spike detection
Datum shift
Flat line
DO depletion at the membrane due to slow/no flow
Membrane temperature dependency (related to flow)
Biofouling effects, how to detect, what thresholds apply
Impact of anoxic conditions on the sensor

<u>**Example list for the fluorometer-based sensor**</u>

Minimum DO threshold
Max threshold
Rate of change
Spike detection
Datum shift
Flat line
Biofouling effects, how to detect, what thresholds apply
Ambient light interference - this one and the rest are my guesses at
topics of interest
Excitation stability
Detector stability
Interfering solutes

WEBINAR AND CALL IN INFO

Topic: QARTOD 6

Date: Wednesday, August 1, 2012
Time: 8:30 am, Central Daylight Time (Chicago, GMT-05:00)
Meeting Number: 733 885 967
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