NCSU Study Reveals YSI 6600EDS (Extended Deployment System) Performs Well in High Fouling Conditions

The lower Neuse River Estuary is a wind-driven, highly productive system suffering from significant perturbation. Algal blooms, suppressed dissolved oxygen, anoxia and consequent fish kills have plagued this reach of the Neuse for many years. North Carolina State University (NCSU) Center for Applied Aquatic Ecology (CAAE) researchers Dr. Robert Reed and David Toms, under the supervision of Dr. Howard Glasgow, have developed a real-time remote monitoring program in the lower Neuse River Estuary that includes a network of autonomous and real-time data acquisition stations with surface to bottom sensor profiling. This program is collecting the data necessary to characterize physicochemical and biological response of the Neuse River in the presence of natural and anthropogenic phenomena.

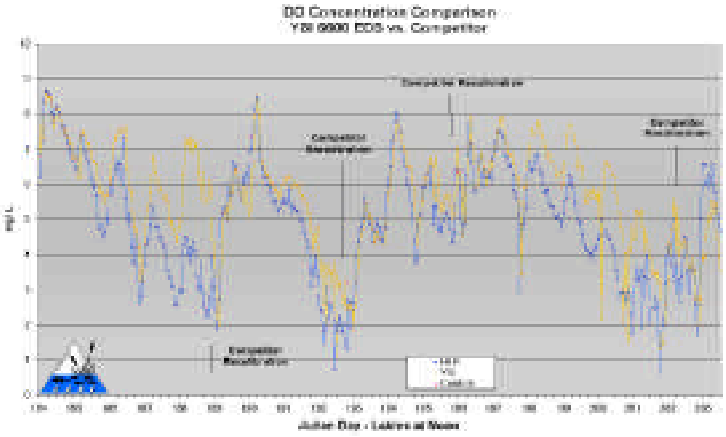

Figure 1. Data documents YSI 6600EDS DO system accuracy and stability during continuous deployment in high fouling conditions. *Note frequency of other unit recalibrations.*

Sensor fouling and consequent drift and failure have been the most significant obstacles to the operation of this program. Due to the chronic fouling and drifting of their sondes provided by a YSI competitor, the NCSU team serviced each deployment station as often as every three days to clean, recondition, and recalibrate each unit (Figure 1). This high degree of maintenance caused Glasgow and team to search for alternatives in multiparameter technology and brought them to YSI and the 6600EDS (Extended Deployment System).

In order to evaluate the 6600EDS, the NCSU-CAAE team collocated a 6600EDS and a competitor's sonde at one of its deployment stations. The results (Figures 1, 2, 3) were impressive. The 6600EDS remained accurate and reliable throughout the deployment without requiring cleaning or recalibration.

Dr. Reed reported that the 6600EDS will save his program valuable time and money that can be spent on expanding the program and working toward the resoration and protection of the water quality of the Neuse River (http://waterquality.ncsu.edu).

In 1991 YSI, Inc. made its first significant advance toward providing accurate DO measurements in the presence of fouling with the development of the Rapid Pulse™ dissolved oxygen system. Rapid Pulse DO continues to outperform thick membrane or stirring-dependent technology in any environment. In the mid-nineties, YSI pioneered the employment of wiped optical sensor technology in multiparameter sondes with the introduction of its widely successful wiped chlorophyll and turbidity sensors. YSI has just recently introduced wiped optical sensor technology for the determination of rhodamine WT for dye tracing and time of travel studies. Carrying wiped technology to the next level, YSI has developed the most important advancement in deployable sonde technology since the beginning of multiparameter sonde deployments: the 6600EDS. The 6600EDS, with the Clean Sweep™ technology,

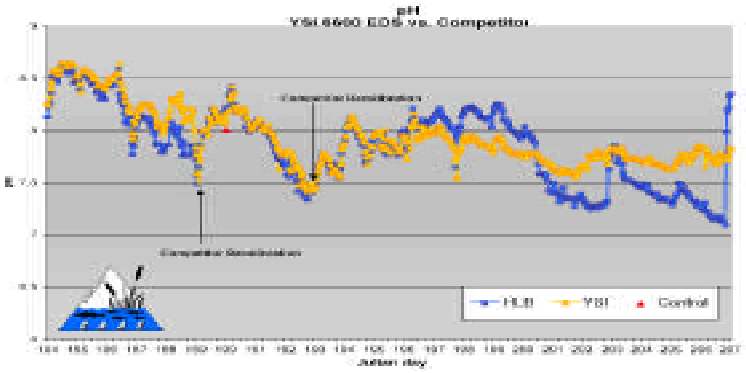

Figure 2. Data depicts YSI 6600EDS pH system accuracy and stability during continuous deployment in high fouling conditions. *Note frequency of other unit recalibrations.*

prevents fouling of the Rapid Pulse DO sensor as well as the pH or pH/ORP sensor. Integral wipers continue to facilitate unprecedented performance from YSI's chlorophyll, turbidity or rhodamine sensors.

For additional information about the YSI 6600EDS:
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800.897.4151
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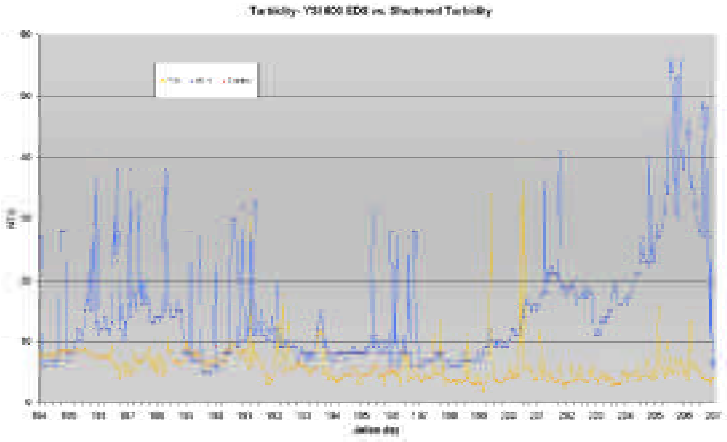

Figure 3. Data depicts stability and accuracy of YSI turbidity system. YSI turbidity data were proven to be more representative of actual conditions than the shuttered turbidity system.

Figure 4. YSI 6600EDS with wiped pH, ORP, dissolved oxygen, temperautre and turbidity and chlorophyll sensors. Turbidity, chlorophyll, and rhodamine have individual wipers while the Clean Sweep™ mechanism maintains the remaining sensors.