

Application Note 17

Monitoring Water Quality on Construction Sites with a Potential Impact to Turkey Creek Wetland

Using In-Situ Inc. MP Troll 9000 to Monitor Construction Runoff

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“Being able to monitor the water quality on a regular schedule can provide key data when trying to prevent erosion/sedimentation. Based on our experience, developers respond quickly when presented with data that clearly shows the need for corrective measures.”

Project Overview

Recent development in the western portion of Knoxville Tennessee has spawned interest in conserving and protecting some of the city’s remaining wetlands. The controversial Turkey Creek Development Center is a prime example of how development is interacting with nature and the Turkey Creek Wetland. As development encroaches upon wetland habitats it’s evident that some impact will occur. The goal in this type of situation is to minimize the impact to the best of our abilities as a technologically advanced society. With the Turkey Creek Development came the need to hire professional advice on minimizing impacts and successfully mitigating for these impacts. After a successful mitigation program and continued monitoring, the land developers handed the responsibility of wetland monitoring and quality assurance over to the Tennessee Izaak Walton League. As development began to increase in the upper sections of the watershed, we began to persuade developers to initiate water quality monitoring throughout the construction process. This situation gave the developers real data to successfully assess the efficiency of erosion/sediment control measures. With this data erosion problems could be isolated and corrected with minimal impact.



Equipment / Procedure Overview

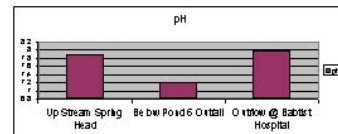
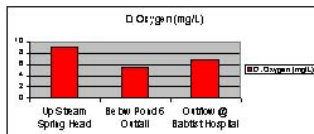
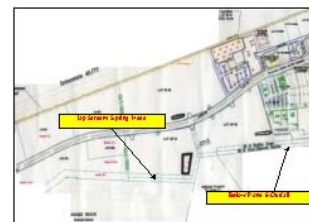
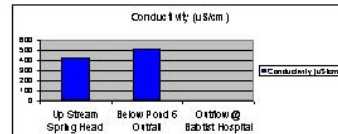
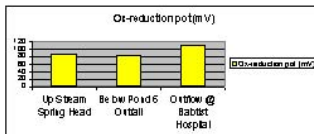
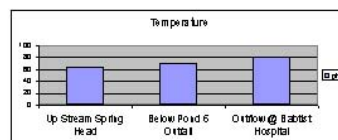
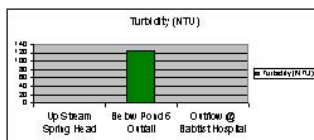
Equipment: The MP Troll 9000, 25 ft of quick connect cable, and the Rugged Reader running on the Pocket-Situ software.

Procedure: The MP Troll 9000 was calibrated before leaving the office. Upon arrival the troll 9000 was deployed in the creek at 3 different locations along the creek. A snapshot was taken at each site. This information was then uploaded a computer and the results analyzed.

Test results:

 Colonial Pinnacle Water Quality Monitoring
 September 2004

3 sample sites	Temp (F)	pH	Ox-reduction pot (mV)	Conductivity (uS/cm)	D. Oxygen (mg/L)	Turbidity (NTU)
Up Stream Spring Head	63.85	7.9	86	428.94	9.04	0.3
Below Pond 6 Outfall	70.82	7.22	82	512.94	5.44	124.1
Outflow @ Baptist Hospital	80.42	7.97	110	3.9	6.76	0.6



How In-Situ Equipment Helped

Using water quality data to pinpoint problem areas is useful in the construction industry. Construction projects are often constantly changing. Being able to monitor the water quality on a regular schedule can provide key data when trying to prevent erosion/sedimentation. Based on our experience developers respond quickly when presented with data that clearly shows the need corrective measures.