June 16, 2014

Monitoring Data Analysis for May 6, 2014 – June 2, 2014

Rocky Branch Creek Monitoring Sites

As with the other two monitored watersheds, the Rocky Branch sites showed typical diurnal fluctuations in the DO, water temperature, and pH parameters. The average DO concentrations at the ROCA and ROCB stations were 6.7 mg/L and 7.4 mg/L, respectively. While the average DO for the monitoring period was fairly high, the DO levels did drop to 4.5

mg/L at the ROCA station and 4.2 mg/L at the ROC B station, just slightly above the DO minimum level of 4 mg/L. Neither station recorded any pH violations during this monitoring period.

The ROCA and ROCB sites recorded 5 storms. As with the last monitoring period, both sites demonstrated fairly rapid responses to storm events, with sudden peaks in turbidity, decreased pH, and decreased specific conductivity values. The pH response to storm events did show some variability, particularly at the ROCA site. The pH readings increased during several storm events, such as the event on May 26th, May 30th, and May 31st. This may be caused by runoff of basic pollutants.

No significant sensor fouling or sonde burial occurred during this monitoring period. As a result, the included dataset is complete over this monitoring period.

A large number of potential illicit discharges were observed at the ROCA site during this monitoring period. These nine events occurred on May 12th, 13th, 14th, 16th, 17th, 19th, 20th, and 21st, as well as June 1st. Several of these events may be accounted for by the pool filter backwashing processes occurring at Maxcy Greg pool. City employees are currently working to reroute the pool discharge.

The ROCB site also experienced a high number of suspected illicit discharges during this monitoring period, with 10 recorded events. These events occurred on May 11th, 14th, 19th (two events), 20th, 21st, 22nd, 23rd (two events) and 27th. Several of these events influenced only the specific conductivity and ammonium readings. There were also several events that caused a stage increase of 1 to 2 inches, but did not affect any of the water quality parameters which our sonde probes are able to measure. The suspected illicit discharge that occurred on May 23rd caused the turbidity to increase to 60 NTU, and also resulted in a specific conductivity increase, an ammonium increase, and a possible temperature fluctuation. The source of these potential illicit events is still unknown.

City of Columbia, SC Stormwater Management
Partnering for clean waterways

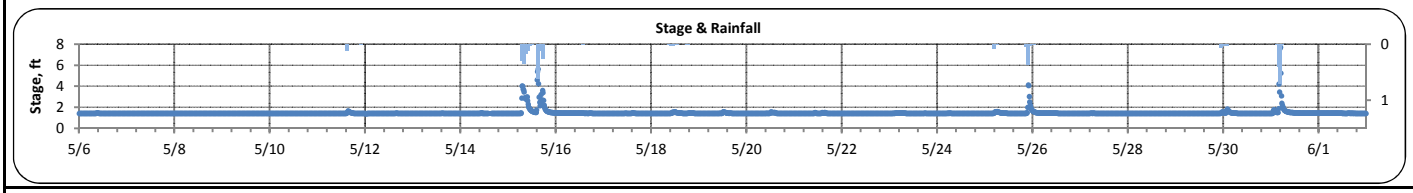
Continuous Water Quality Monitoring Periodic Report

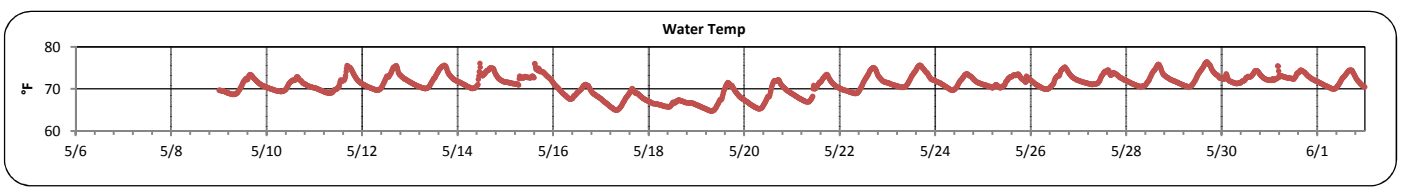
Rocky Branch A (May 6, 2014 -- June 2, 2014)

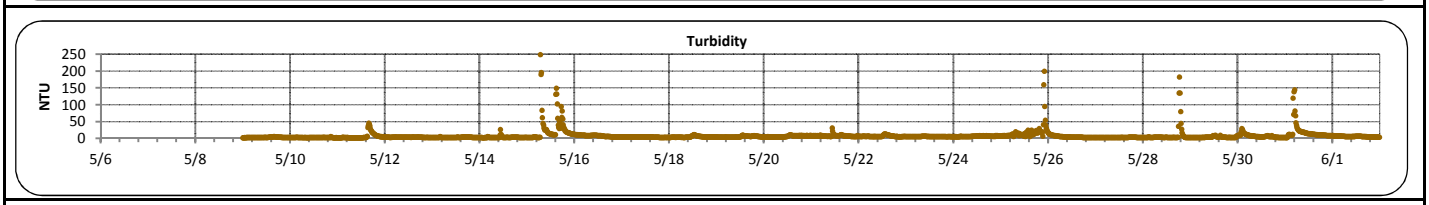
WOOLPERT
DESIGN | GEOSPATIAL | INFRASTRUCTURE

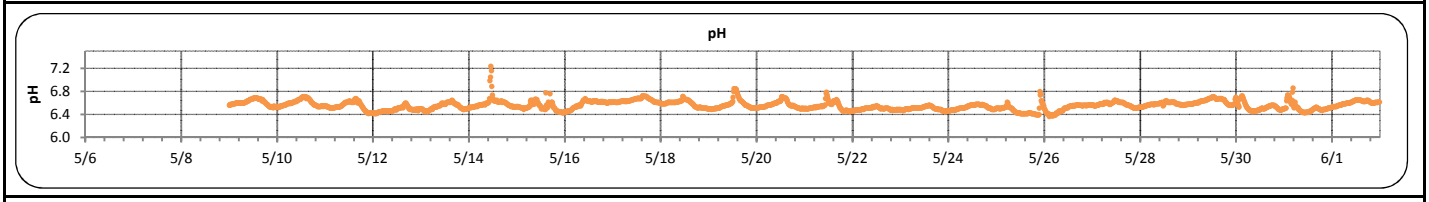
PARAMETER	DESCRIPTION
STREAM NAME:	Rocky Branch
LOCATION:	Maxcy Gregg Park
ADDRESS:	1650 Park Circle Columbia, SC 29201
COORDINATES:	34.995864, -81.021842
TMDL/IMPAIRMENT:	Fecal Coliform
NEIGHBORING LANDUSE:	Residential and commercial
SPATIAL LOCATION:	Most upstream site
TOTAL NO. STORMS OVER 0.1 INCH:	5
MAX. DAILY RAINFALL:	2.0 inches
TOTAL RAINFALL (FOR PERIOD):	4.0 inches

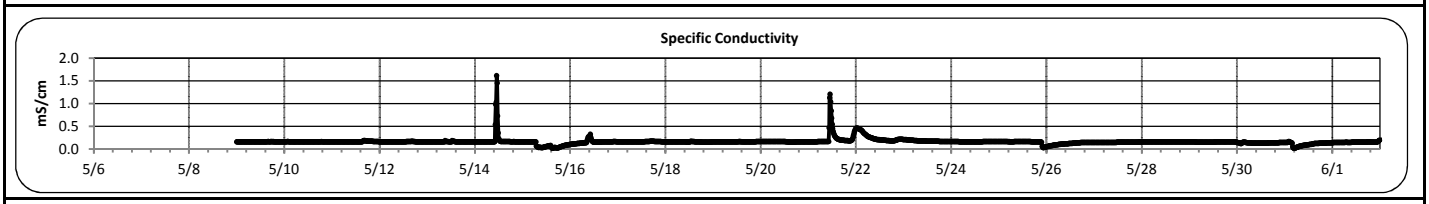
CONTINUOUS WATER QUALITY PARAMETERS:	SUMMARY STATISTICS				
	MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION
STAGE (FT):	1.4	7.7	1.4	1.5	0.3
TEMPERATURE (°F):	65	76	71	71	2
TURBIDITY (NTU):	2	248	5	7	14
pH:	6.4	7.2	6.6	6.6	0.1
SPECIFIC CONDUCTIVITY (mS/cm):	0.014	1.614	0.156	0.159	0.075
DISSOLVED OXYGEN (mg/L):	4.5	8.5	6.7	6.7	0.8

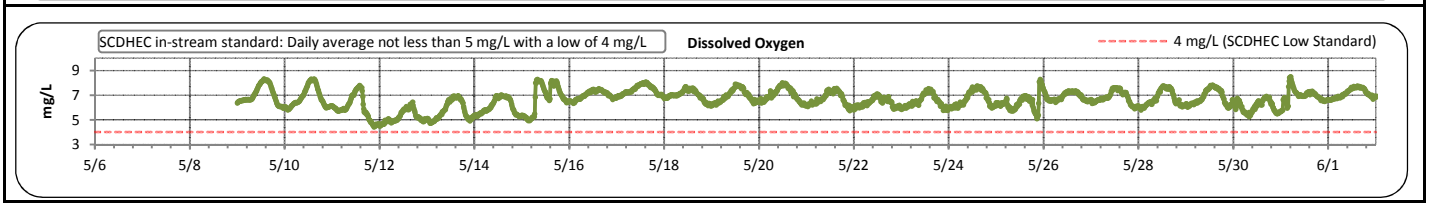












Note: Data gaps appear when the sonde is removed for calibration or when the flow depth is below the sensors

REPORT GENERATED ON 6/13/2014

Continuous Water Quality
Monitoring Periodic Report

Rocky Branch A (May 6, 2014 -- June 2, 2014)

Explanation of Statistics:

MINIMUM OBSERVED	The minimum of the values recorded by the datasonde in 15 minute intervals.
MAXIMUM OBSERVED	The maximum of the values recorded by the datasonde in 15 minute intervals.
MEDIAN OBSERVED	The median of all the values recorded by the datasonde in 15 minute intervals.
MEAN OBSERVED	The average of all the values recorded by the datasonde in 15 minute intervals.
STANDARD DEVIATION	The standard deviation of all the values recorded by the datasonde in 15 minute intervals.

Grab Sample Data:

Analyte (units)	Sample 1		Sample 2		Sample 3		Sample 4	
	5/15/2014		5/15/2014		5/15/2014			
	Time	Result	Time	Result	Time	Result	Time	Result
Escherichia coli (MPN/100mL)	8:53	10,950	10:54	15,400	13:35	19,610		
Total Suspended Solids (mg/L)	8:53	36	10:54	11	13:45	4		
Total Phosphorus (mg/L)	8:53	0.24	10:54	0.16	13:35	0.14		
Total Nitrogen (mg/L)	8:53	1.26	10:54	1	13:35	1.31		

Note: Only 3 samples were collected due to the spacing on the hydrograph.

Note: Data gaps appear when the sonde is removed for calibration or when the flow depth is below the sensors

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City of Columbia, SC Stormwater Management
Partnering for clean waterways

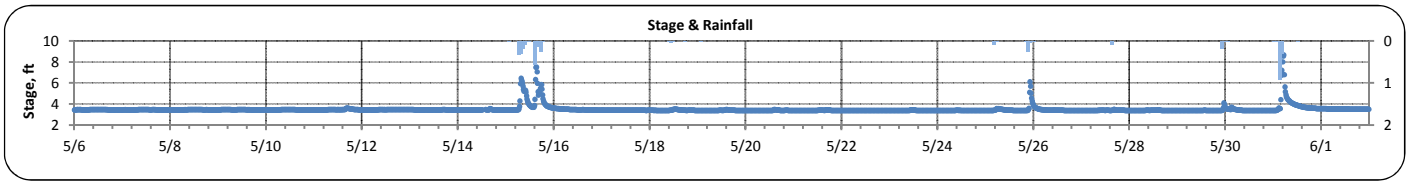
Continuous Water Quality Monitoring Periodic Report

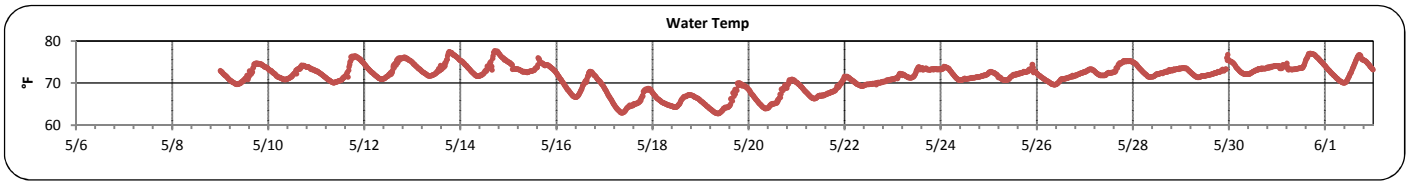
Rocky Branch B (May 6, 2014 -- June 2, 2014)

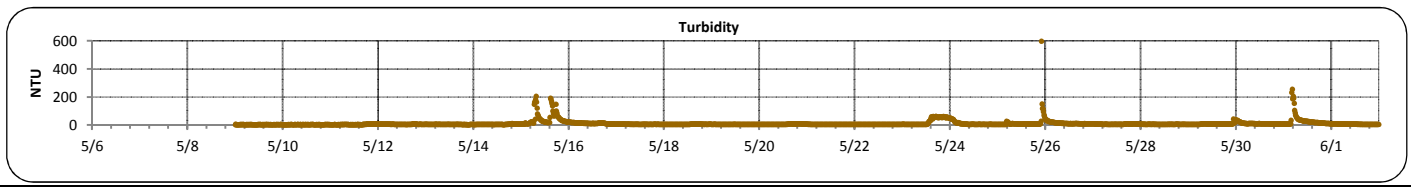
WOOLPERT
DESIGN | GEOSPATIAL | INFRASTRUCTURE

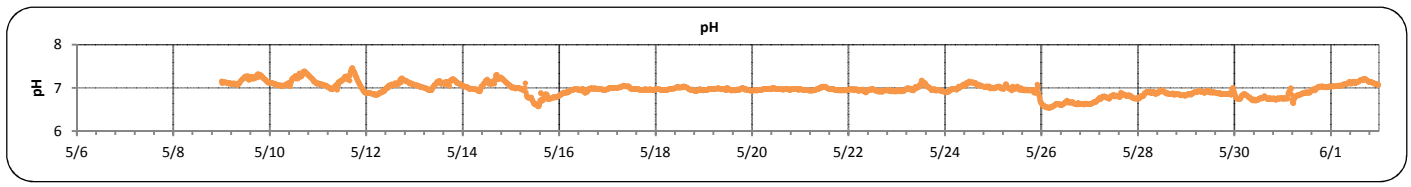
PARAMETER	DESCRIPTION
STREAM NAME:	Rocky Branch
LOCATION:	Olympia Ave Crossing
ADDRESS:	510 Heyward St Columbia, SC 29201
COORDINATES:	33.982578, -81.035036
TMDL/IMPAIRMENT:	Fecal Coliform
NEIGHBORING LANDUSE:	Residential and commercial
SPATIAL LOCATION:	Most Downstream Site
TOTAL NO. STORMS OVER 0.1 INCH:	5
MAX. DAILY RAINFALL:	1.9 inches
TOTAL RAINFALL (FOR PERIOD):	4.0 inches

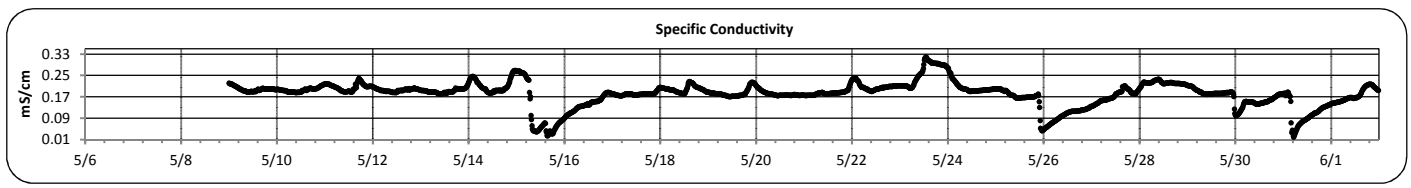
CONTINUOUS WATER QUALITY PARAMETERS:	SUMMARY STATISTICS				
	MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION
STAGE (FT):	3.4	8.7	3.4	3.5	0.4
TEMPERATURE (°F):	63	78	72	71	3
TURBIDITY (NTU):	2	596	5	10	22
pH:	6.5	7.5	7.0	7.0	0.2
SPECIFIC CONDUCTIVITY (mS/cm):	0.019	0.319	0.1885	0.182	0.045
DISSOLVED OXYGEN (mg/L):	4.2	9.6	7.4	7.4	0.9

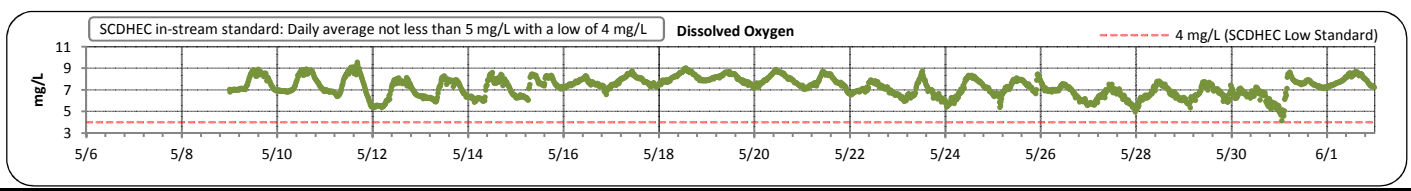












Note: Data gaps appear when the sonde is removed for calibration or when the flow depth is below the sensors

REPORT GENERATED ON 6/13/2014

Continuous Water Quality
Monitoring Periodic Report

Rocky Branch B (May 6, 2014 -- June 2, 2014)

Explanation of Statistics:

MINIMUM OBSERVED	The minimum of the values recorded by the datasonde in 15 minute intervals.
MAXIMUM OBSERVED	The maximum of the values recorded by the datasonde in 15 minute intervals.
MEDIAN OBSERVED	The median of all the values recorded by the datasonde in 15 minute intervals.
MEAN OBSERVED	The average of all the values recorded by the datasonde in 15 minute intervals.
STANDARD DEVIATION	The standard deviation of all the values recorded by the datasonde in 15 minute intervals.

Sampled Data:

Analyte (units)	Sample 1		Sample 2		Sample 3		Sample 4	
	5/15/2014		5/15/2014		5/15/2014			
	Time	Result	Time	Result	Time	Result	Time	Result
Escherichia coli (MPN/100mL)	9:08	16,330	11:08	6,563	14:00	12,260		
Total Suspended Solids (mg/L)	9:08	76	11:08	26.5	14:00	8		
Total Phosphorus (mg/L)	9:08	0.26	11:08	0.19	14:00	0.14		
Total Nitrogen (mg/L)	9:08	1.34	11:08	1.2	14:00	1.28		

Note: Only 3 samples were collected due to the spacing on the hydrograph.

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