

# Smith Branch Monitoring Sites

## Monitoring Data Summary for November 1<sup>st</sup>, 2018 – December 5<sup>th</sup>, 2018

### *Data Gaps*

- The SMIA turbidity data was removed from November 6<sup>th</sup>-7<sup>th</sup>, on November 26<sup>th</sup>, and on December 1<sup>st</sup> due to a buildup of sediment and leaf debris covering the turbidity sensor. The SMIA sonde became buried from November 16<sup>th</sup>-19<sup>th</sup> and 21<sup>st</sup>-24<sup>th</sup>, so all water quality parameters were removed from the dataset. Because of the location of the specific conductivity sensor, this parameter was not impacted by the buried sonde from November 16<sup>th</sup>-19<sup>th</sup>.
- The SMIB station experienced some noisy turbidity data on November 13<sup>th</sup> and from November 29<sup>th</sup>-30<sup>th</sup>. These periods of turbidity were removed from the dataset as result of potential sensor fouling. The DO membrane on the SMIB sonde was severely scratched which caused bad DO data from November 4<sup>th</sup>-8<sup>th</sup> and this portion of the data was also removed from the dataset.

### *SCDHEC Standards*

- Neither of the Smith Branch stations recorded pH values outside of the acceptable SCDHEC range of 6 to 8.5.
- Both the SMIA and SMIB station recorded average DO concentration of 9.1 mg/L, which is well above the SCDHEC daily average standard of 5 mg/L.
- The minimum DO concentration recorded at the SMIA station was 7.2 mg/L and 7.5 mg/L at the SMIB station, which are well above the SCDHEC discrete minimum standard of 4.0 mg/L.

### *Storm Events*

- The SMIA station recorded 9 storms (at least 0.1 inches) in this monitoring period that resulted in 8.2 inches of precipitation. The SMIB station recorded 8 storms (at least 0.1 inches) in this monitoring period that resulted in 7.4 inches of precipitation.
- The Smith Branch monitoring stations both recorded typical water quality responses to the storm events observed during this monitoring period.
- The maximum antecedent dry time since the last significant precipitation event (at least 0.1 inch) was approximately 8.4 days at both Smith Branch monitoring stations occurring prior to the storm event on November 23<sup>rd</sup>.

### *Potential Illicit Discharges and Abnormal Events*

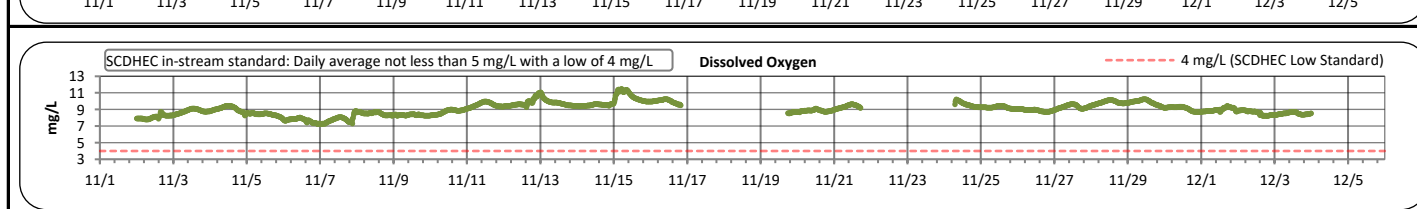
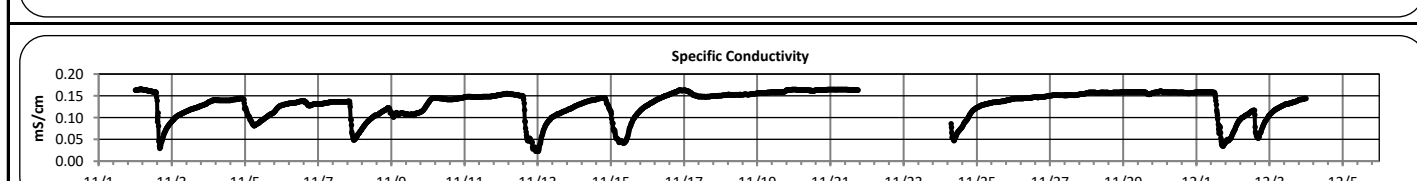
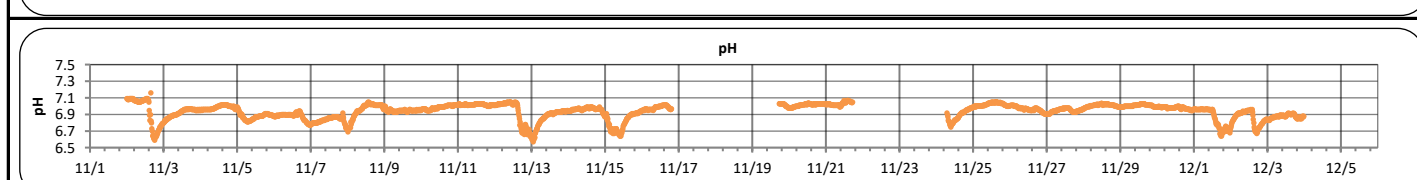
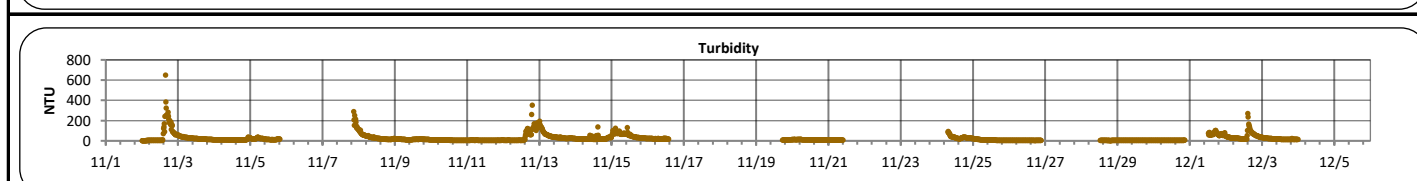
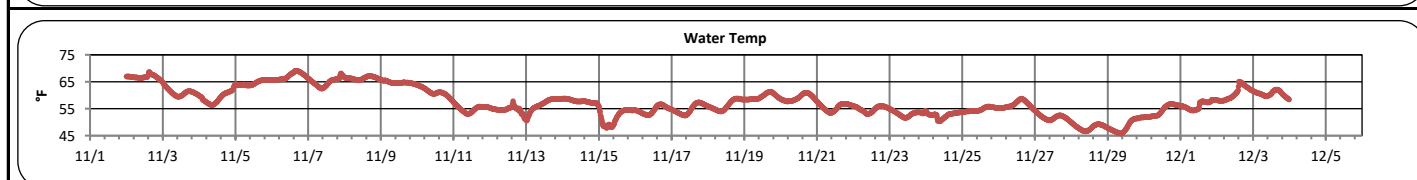
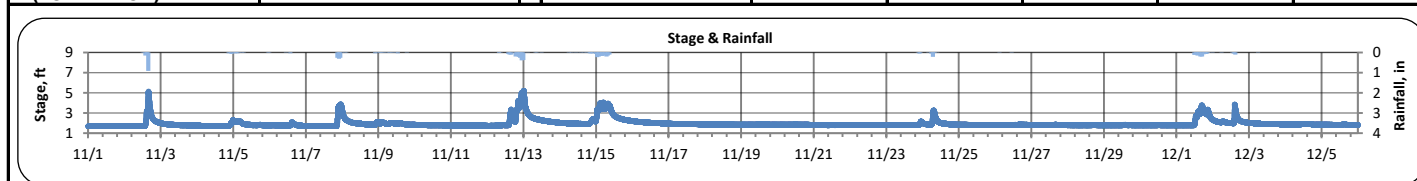
- There were no abnormal events observed at the Smith Branch stations during this deployment period.

### *Flow Measurements*

- No flow measurements were taken in this watershed during this monitoring period.

**Smith Branch A (November 1, 2018 -- December 5, 2018)**

| PARAMETER                       | DESCRIPTION                            | CONTINUOUS WATER QUALITY PARAMETERS: | SUMMARY STATISTICS |                  |                 |               |                    |
|---------------------------------|--|--------------------------------------|--------------------|------------------|-----------------|---------------|--------------------|
|                                 |  |                                      | MINIMUM OBSERVED   | MAXIMUM OBSERVED | MEDIAN OBSERVED | MEAN OBSERVED | STANDARD DEVIATION |
| STREAM NAME:                    | Smith Branch                           | STAGE (FT):                          | 1.7                | 5.2              | 1.8             | 2.0           | 0.4                |
| LOCATION:                       | Earlewood Park                         | TEMPERATURE (°F):                    | 46                 | 69               | 57              | 58            | 5                  |
| ADDRESS:                        | 1111 Parkside Dr<br>Columbia, SC 29201 | TURBIDITY (NTU):                     | 3                  | 651              | 15              | 27            | 39                 |
| COORDINATES:                    | 34.027289,-81.04265                    | pH:                                  | 6.6                | 7.2              | 7.0             | 6.9           | 0.1                |
| TMDL/IMPAIRMENT:                | Fecal Coliform                         | SPECIFIC CONDUCTIVITY (mS/cm):       | 0.023              | 0.166            | 0.142           | 0.132         | 0.031              |
| NEIGHBORING LANDUSE:            | Residential and commercial             | DISSOLVED OXYGEN (mg/L):             | 7.2                | 11.5             | 9.0             | 9.1           | 0.7                |
| SPATIAL LOCATION:               | Most upstream site                     |                                      |                    |                  |                 |               |                    |
| TOTAL NO. STORMS OVER 0.1 INCH: | 9                                      |                                      |                    |                  |                 |               |                    |
| MAX. DAILY RAINFALL:            | 2.0 inches                             |                                      |                    |                  |                 |               |                    |
| TOTAL RAINFALL (FOR PERIOD):    | 8.2 inches                             |                                      |                    |                  |                 |               |                    |



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

**Continuous Water Quality  
Monitoring Periodic Report**

**Smith Branch A (November 1, 2018 -- December 5, 2018)**

**Explanation of Statistics:**

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

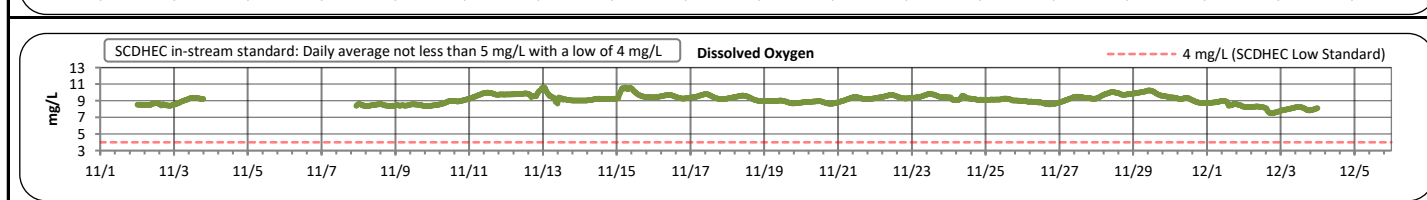
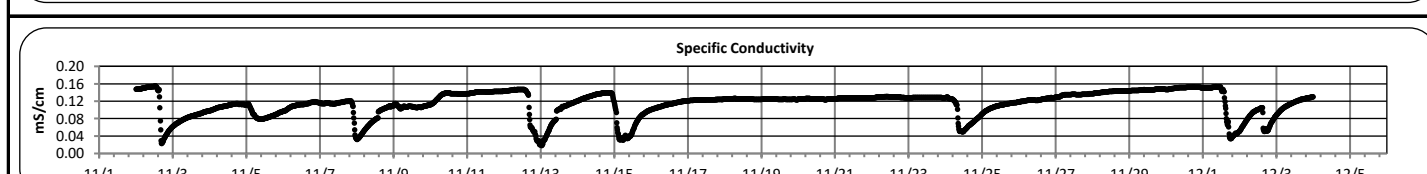
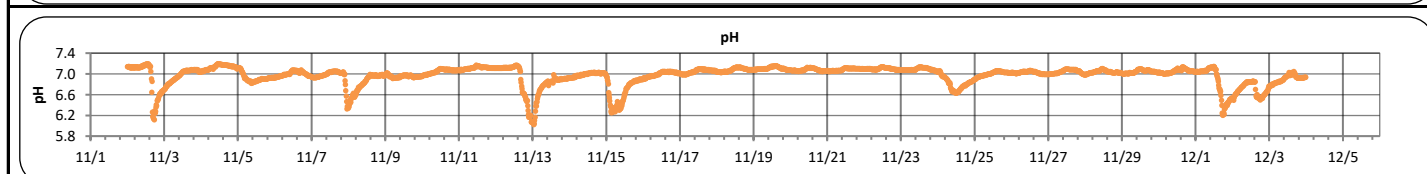
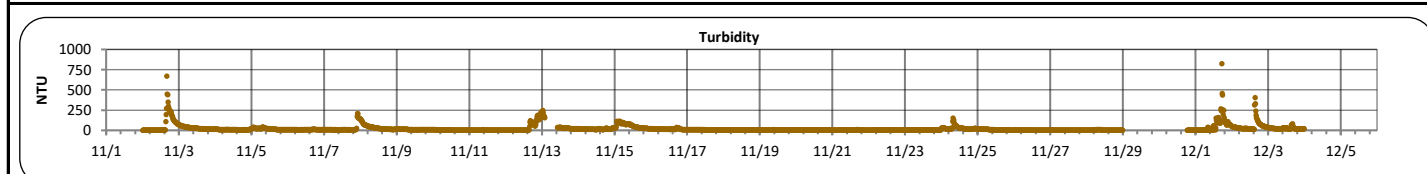
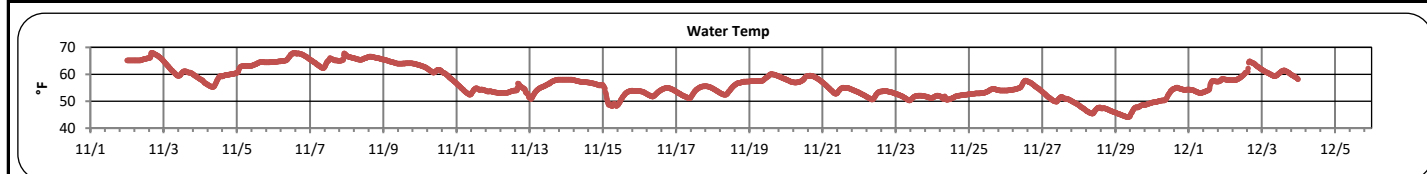
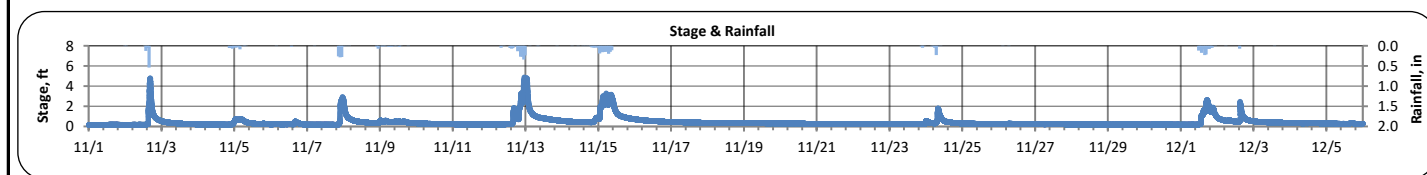
**Grab Sample Data:**

| Analyte<br>(units)                     | Sample 1   |        | Sample 2 |        | Sample 3 |        | Sample 4 |        |
|--|------------|--------|----------|--------|----------|--------|----------|--------|
|  | 11/20/2018 |        |          |        |          |        |          |        |
|  | Time       | Result | Time     | Result | Time     | Result | Time     | Result |
| <i>Escherichia coli</i><br>(MPN/100mL) | 10:57      | 402    |          |        |          |        |          |        |
| Total Suspended Solids (mg/L)          |            |        |          |        |          |        |          |        |
| Total Phosphorus (mg/L)                |            |        |          |        |          |        |          |        |
| Total Nitrogen (mg/L)                  |            |        |          |        |          |        |          |        |

Note:

**Smith Branch B (November 1, 2018 -- December 5, 2018)**

| PARAMETER                       | DESCRIPTION                           | CONTINUOUS WATER QUALITY PARAMETERS: | SUMMARY STATISTICS |                  |                 |               |                    |
|---------------------------------|---------------------------------------|--------------------------------------|--------------------|------------------|-----------------|---------------|--------------------|
|                                 |                                       |                                      | MINIMUM OBSERVED   | MAXIMUM OBSERVED | MEDIAN OBSERVED | MEAN OBSERVED | STANDARD DEVIATION |
| STREAM NAME:                    | Smith Branch                          | STAGE (FT):                          | 0.2                | 4.9              | 0.3             | 0.4           | 0.5                |
| LOCATION:                       | Off Mountain Drive                    | TEMPERATURE (°F):                    | 44                 | 68               | 56              | 57            | 5                  |
| NEAREST ADDRESS:                | 3950 Clement Rd<br>Columbia, SC 29203 | TURBIDITY (NTU):                     | 1                  | 827              | 9               | 22            | 43                 |
| COORDINATES:                    | 34.037933,-81.0591                    | pH:                                  | 6.0                | 7.2              | 7.0             | 7.0           | 0.2                |
| TMDL/IMPAIRMENT:                | Fecal Coliform                        | SPECIFIC CONDUCTIVITY (mS/cm):       | 0.019              | 0.155            | 0.124           | 0.115         | 0.029              |
| NEIGHBORING LANDUSE:            | Residential and commercial            | DISSOLVED OXYGEN (mg/L):             | 7.5                | 10.7             | 9.2             | 9.1           | 0.6                |
| SPATIAL LOCATION:               | Most Downstream Site                  |                                      |                    |                  |                 |               |                    |
| TOTAL NO. STORMS OVER 0.1 INCH: | 8                                     |                                      |                    |                  |                 |               |                    |
| MAX. DAILY RAINFALL:            | 1.7 inches                            |                                      |                    |                  |                 |               |                    |
| TOTAL RAINFALL (FOR PERIOD):    | 7.4 inches                            |                                      |                    |                  |                 |               |                    |



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

**Continuous Water Quality  
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**Smith Branch B (November 1, 2018 -- December 5, 2018)**

**Explanation of Statistics:**

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|---------------------------|--|
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| <b>MEAN OBSERVED</b>      | The average of all the values recorded by the datasonde in 15 minute intervals.            |
| <b>STANDARD DEVIATION</b> | The standard deviation of all the values recorded by the datasonde in 15 minute intervals. |

**Sampled Data:**

| Analyte<br>(units)                     | Sample 1   |        | Sample 2 |        | Sample 3 |        | Sample 4 |        |
|--|------------|--------|----------|--------|----------|--------|----------|--------|
|  | 10/20/2018 |        |          |        |          |        |          |        |
|  | Time       | Result | Time     | Result | Time     | Result | Time     | Result |
| <i>Escherichia coli</i><br>(MPN/100mL) | 11:23      | 482    |          |        |          |        |          |        |
| Total Suspended Solids (mg/L)          |            |        |          |        |          |        |          |        |
| Total Phosphorus (mg/L)                |            |        |          |        |          |        |          |        |
| Total Nitrogen (mg/L)                  |            |        |          |        |          |        |          |        |

Note: