

Gills Creek Monitoring Sites

Monitoring Data Summary for June 8th, 2017 – July 12th, 2017

Data Gaps

- The GILA and GILC sondes did not experience any interruptions in the data record during this monitoring period.
- The GILB station experienced a period of DO fouling on June 24th – June 26th due to an excessive amount of algae on the sonde, so this data was removed from the dataset.

SCDHEC Standards

- The GILA and GILB stations did not record any pH readings outside of the acceptable SCDHEC range of 6 to 8.5.
- The GILC station recorded some pH values below the standard minimum of 6. These low values occurred during a storm event on June 16th. The lowest pH value recorded was 5.7.
- The GILA, GILB, and GILC stations recorded average DO concentrations of 7.1 mg/L, 6.3 mg/L, and 5.6 mg/L, respectively, during this monitoring period. All of these average values are above the SCDHEC daily average standard of 5 mg/L.
- The GILA, GILB, and GILC stations recorded minimum DO levels of 6.0 mg/L, 3.6 mg/L, and 4.4 mg/L, respectively, during this deployment. During a storm event on June 16th, the GILB station experienced a brief period of values lower than the SCDHEC instantaneous minimum standard of 4.0 mg/L.

Storm Events

- 11 storm events were recorded at the GILA station, 12 storm events were recorded at GILB, and 12 were recorded at GILC during this deployment period, resulting in 5.8 inches, 6.6 inches, and 7.2 inches of total precipitation at the GILA, GILB, and GILC stations, respectively. Several scattered thunderstorms impacted the GILB and GILC stations more severely than the GILA station, causing the lower rainfall total at GILA.
- The water quality parameters in the Gills Creek watershed displayed typical storm event response patterns in the turbidity dataset for the majority of recorded storm events. However, the GILB station experienced an abnormal increase in specific conductivity which started during a minor storm event from June 24th – June 26th.
- The GILA station experienced an increase in specific conductivity at the beginning of the storm event on June 16th, which is an unusual response at GILA.
- The maximum antecedent dry time since the last significant precipitation event (at least 0.1 inches) was approximately 9.8 days in the Gills Creek watershed, and occurred prior to the June 16th storm event.

Potential Illicit Discharges and Abnormal Events

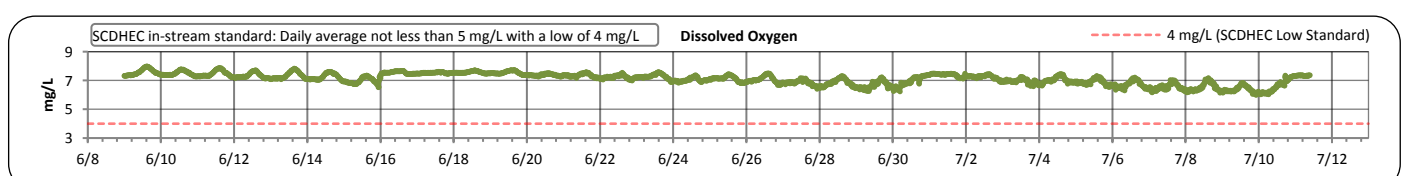
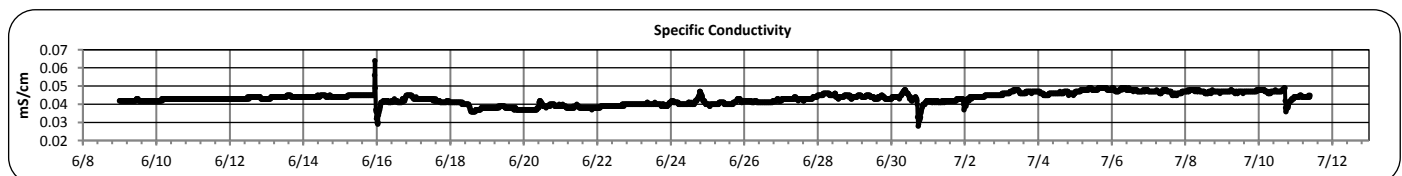
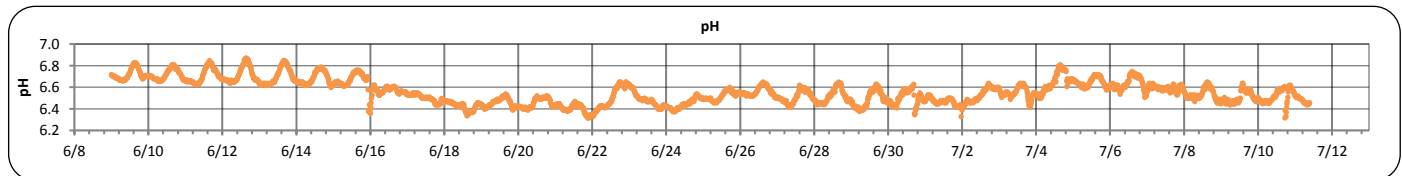
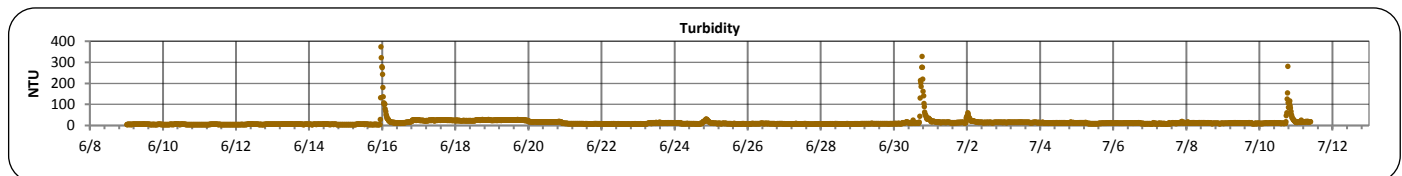
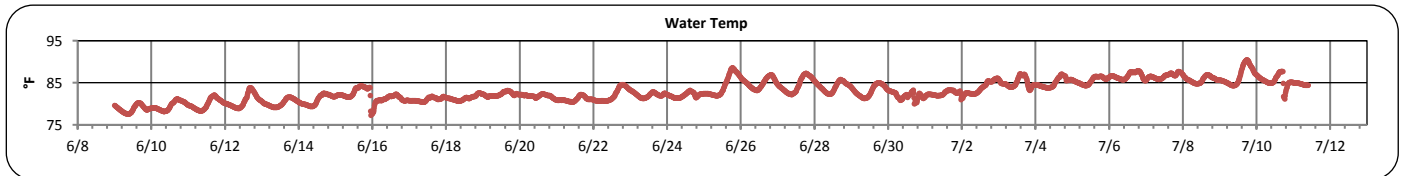
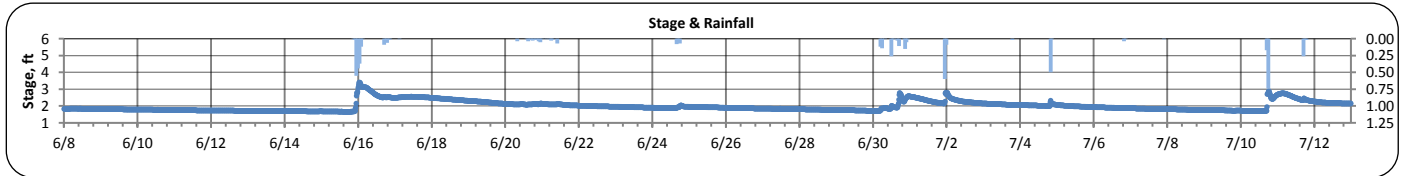
- At the GILB station, the stage was observed to rapidly drop from June 12th until the storm event on June 16th. This abrupt change in stage was likely due to a sudden decrease in the discharge of Gills Creek from Lake Katherine. As has been observed previously, this decreased stage was associated with an increase in specific conductivity and a decrease in DO, as the flow from Wildcat Creek contributed a larger portion of flow to Gills Creek at the GILB station during this time. The impacts from this were observed at GILC as well.

Flow Measurements

- No flow measurements were taken at any of the Gills Creek stations during this deployment period.

Gills Creek A (June 8, 2017 -- July 12, 2017)

PARAMETER	DESCRIPTION	CONTINUOUS WATER QUALITY PARAMETERS:	SUMMARY STATISTICS				
			MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION
STREAM NAME:	Gills Creek	STAGE (FT):	1.7	3.4	1.9	2.0	0.3
LOCATION:	Forest Drive Bridge	TEMPERATURE (°F):	77	90	82	83	2
ADDRESS:	4840 Forest Drive, Columbia, SC 29206	TURBIDITY (NTU):	5	374	11	14	20
COORDINATES:	34.019826, -80.963566	pH:	6.3	6.9	6.6	6.6	0.1
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen	SPECIFIC CONDUCTIVITY (mS/cm):	0.028	0.064	0.043	0.043	0.003
NEIGHBORING LANDUSE:	Residential and commercial	DISSOLVED OXYGEN (mg/L):	6.0	8.0	7.2	7.1	0.4
APPROX. DRAINAGE AREA:	48 square miles						
SPATIAL LOCATION:	Most upstream site						
TOTAL NO. STORMS OVER 0.1 INCH:	11						
MAX. DAILY RAINFALL:	1.1 inches						
TOTAL RAINFALL (FOR PERIOD):	5.8 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**

Gills Creek A (June 8, 2017 -- July 12, 2017)

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:

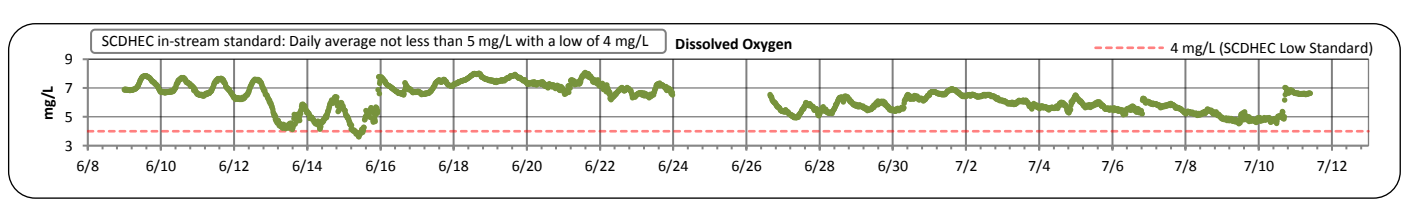
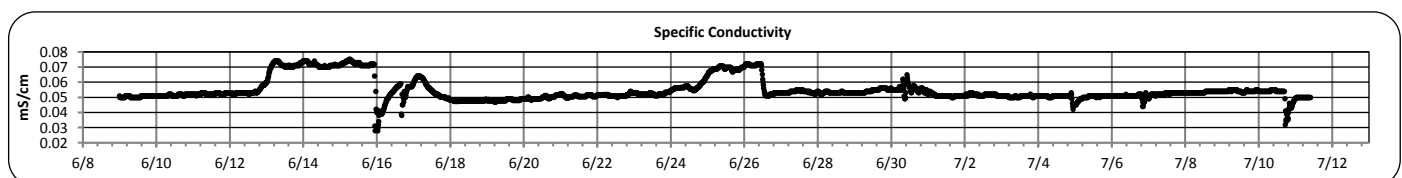
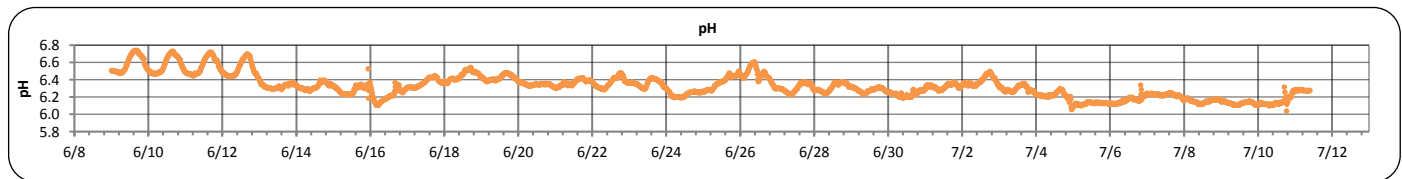
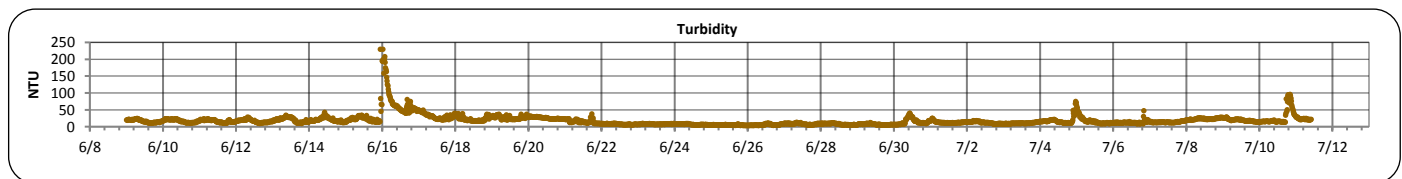
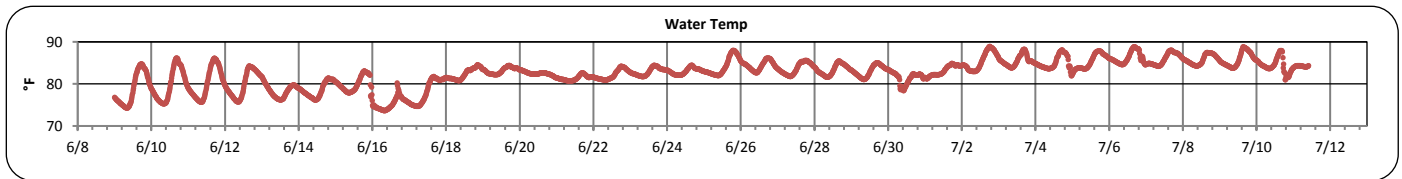
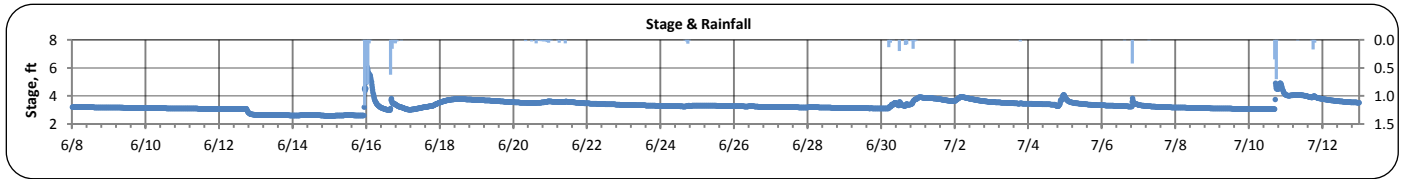
Analyte (units)	Sample 1		Sample 2		Sample 3		Sample 4	
	Time	Results	Time	Results	Time	Results	Time	Results
<i>Escherichia coli</i> (MPN/100mL)								
Total Suspended Solids (mg/L)								
Total Phosphorus (mg/L)								
Total Nitrogen (mg/L)								

Notes:

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

Gills Creek B (June 8, 2017 -- July 12, 2017)

PARAMETER	DESCRIPTION	CONTINUOUS WATER QUALITY PARAMETERS:	SUMMARY STATISTICS				
			MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION
STREAM NAME:	Gills Creek	STAGE (FT):	2.6	6.1	3.3	3.3	0.4
LOCATION:	Devine Street bridge	TEMPERATURE (°F):	74	89	83	83	3
ADDRESS:	4716 Devine Street Columbia, SC 29209	TURBIDITY (NTU):	4	231	15	18	17
COORDINATES:	33.989656, -80.97433	pH:	6.0	6.7	6.3	6.3	0.1
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen	SPECIFIC CONDUCTIVITY (mS/cm):	0.028	0.075	0.052	0.055	0.007
NEIGHBORING LANDUSE:	Residential and commercial	DISSOLVED OXYGEN (mg/L):	3.6	8.1	6.3	6.3	0.9
APPROX. DRAINAGE AREA:	59 square miles						
SPATIAL LOCATION:	Middle site						
TOTAL NO. STORMS OVER 0.1 INCH:	12						
MAX. DAILY RAINFALL:	1.7 inches						
TOTAL RAINFALL (FOR PERIOD):	6.6 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**

Gills Creek B (June 8, 2017 -- July 12, 2017)

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:

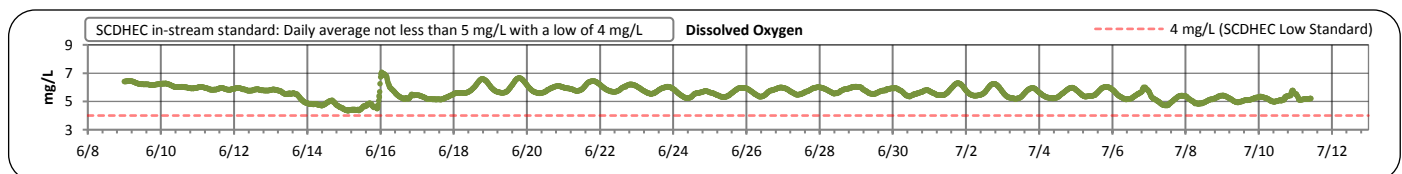
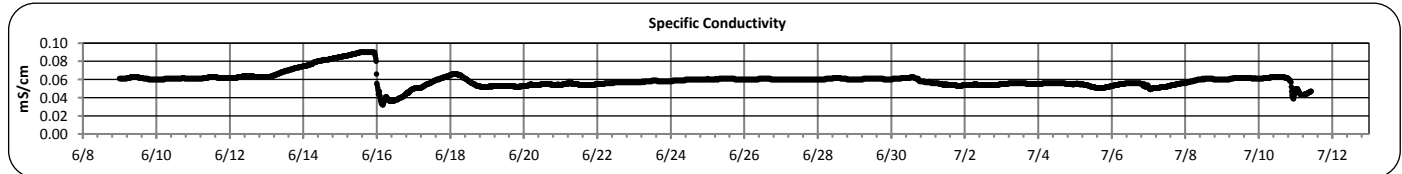
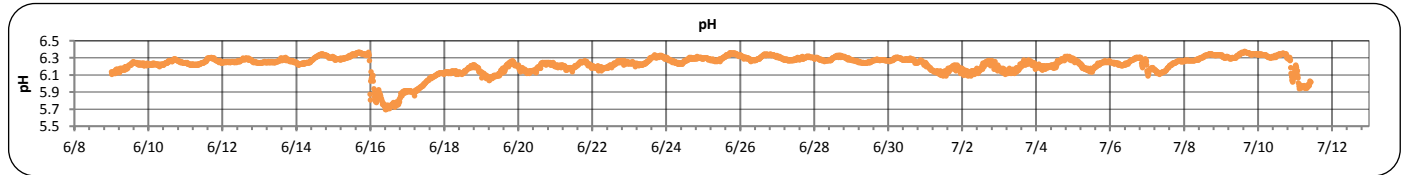
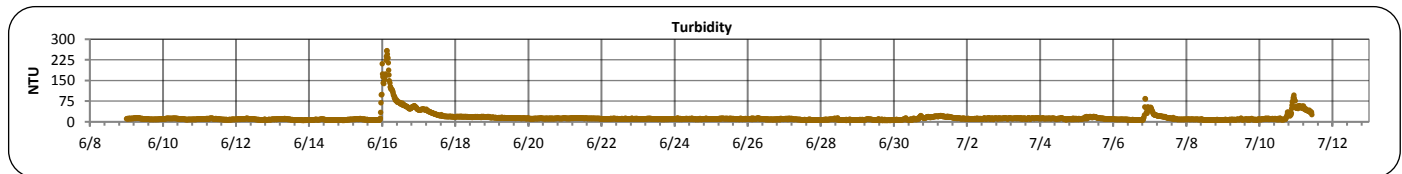
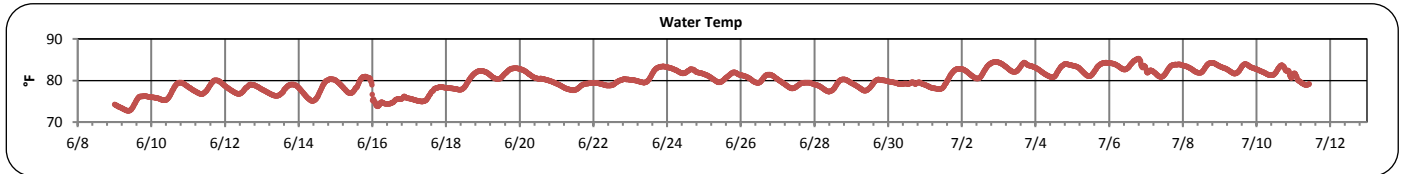
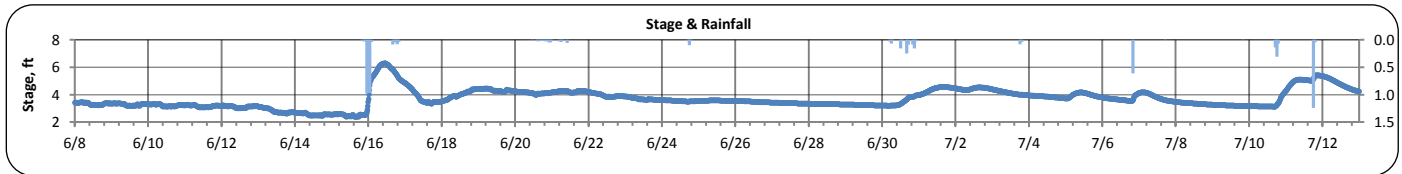
Analyte (units)	Sample 1		Sample 2		Sample 3		Sample 4	
	Time	Results	Time	Results	Time	Results	Time	Results
<i>Escherichia coli</i> (MPN/100mL)								
Total Suspended Solids (mg/L)								
Total Phosphorus (mg/L)								
Total Nitrogen (mg/L)								

Notes:

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

Gills Creek C (June 8, 2017 -- July 12, 2017)

PARAMETER	DESCRIPTION	CONTINUOUS WATER QUALITY PARAMETERS:	SUMMARY STATISTICS				
			MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION
STREAM NAME:	Gills Creek	STAGE (FT):	2.4	6.3	3.6	3.7	0.7
LOCATION:	Bluff Road bridge	TEMPERATURE (°F):	73	85	80	80	3
ADDRESS:	3009 Bluff Rd. Columbia, SC 29209	TURBIDITY (NTU):	6	259	11	16	19
COORDINATES:	33.948043, -80.98889	pH:	5.7	6.4	6.3	6.2	0.1
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen	SPECIFIC CONDUCTIVITY (mS/cm):	0.032	0.09	0.06	0.059	0.008
NEIGHBORING LANDUSE:	Residential and commercial	DISSOLVED OXYGEN (mg/L):	4.4	7.1	5.7	5.6	0.4
APPROX. DRAINAGE AREA:	64 square miles						
SPATIAL LOCATION:	Most downstream site						
TOTAL NO. STORMS OVER 0.1 INCH:	12						
MAX. DAILY RAINFALL:	1.95 inches						
TOTAL RAINFALL (FOR PERIOD):	7.2 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**

Gills Creek C (June 8, 2017 -- July 12, 2017)

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	
	Time	Results	Time	Results	Time	Results	Time	Results
<i>Escherichia coli</i> (MPN/100mL)								
Total Suspended Solids (mg/L)								
Total Phosphorus (mg/L)								
Total Nitrogen (mg/L)								

Notes:

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