

Gills Creek Monitoring Sites

Monitoring Data Summary for March 30th, 2017 – May 3rd, 2017

Data Gaps

- The GILA and GILB sondes did not experience any interruptions in the data record during this monitoring period.
- The GILC sonde was not deployed during two periods of this deployment, April 12th – 17th, and April 18th – 27th, due to excessively low stage levels. On April 27th, the GILC station was redesigned so that the sonde would remain submerged even at low stage levels.

SCDHEC Standards

- None of the Gills Creek monitoring stations recorded any pH readings outside of the acceptable SCDHEC range of 6 to 8.5.
- The GILA, GILB, and GILC stations recorded average DO concentrations of 7.9 mg/L, 7.5 mg/L, and 6.5 mg/L, respectively, during this monitoring period. All of these average values are well above the SCDHEC daily average standard of 5 mg/L.
- The GILA, GILB, and GILC stations recorded minimum DO levels of 4.6 mg/L, 4.9 mg/L, and 5.0 mg/L, respectively, during this deployment, above the SCDHEC instantaneous minimum standard of 4.0 mg/L.

Storm Events

- Seven storm events were recorded at the GILA and GILC stations, and six storm events were recorded at the GILB station during this deployment period, resulting in 8.9 inches, 8.9 inches, and 8.6 inches of total precipitation at the GILA, GILB, and GILC stations, respectively.
- 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.
- The maximum antecedent dry time since the last significant precipitation event (at least 0.1 inches) was approximately 17.8 days in the Gills Creek watershed, and occurred prior to the April 23rd -24th storm event.

Potential Illicit Discharges and Abnormal Events

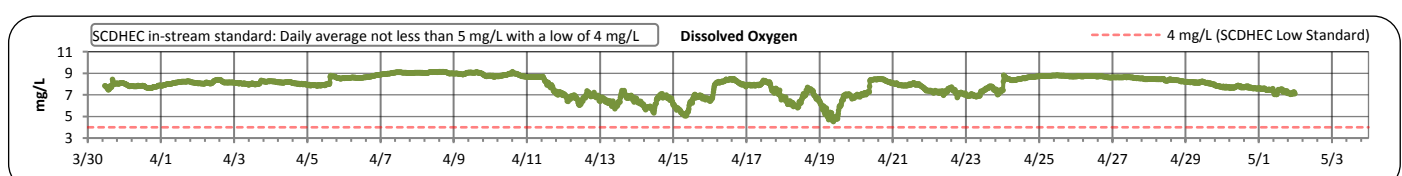
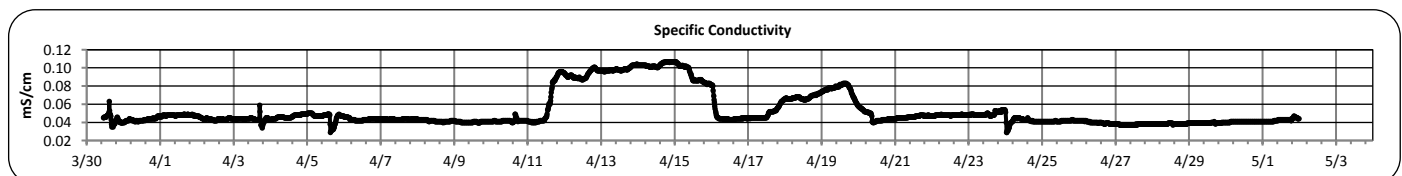
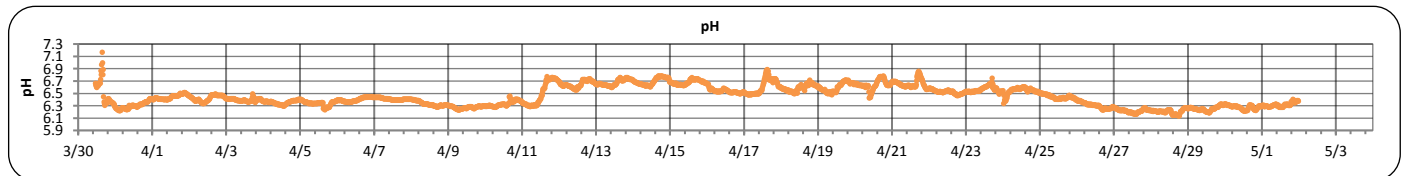
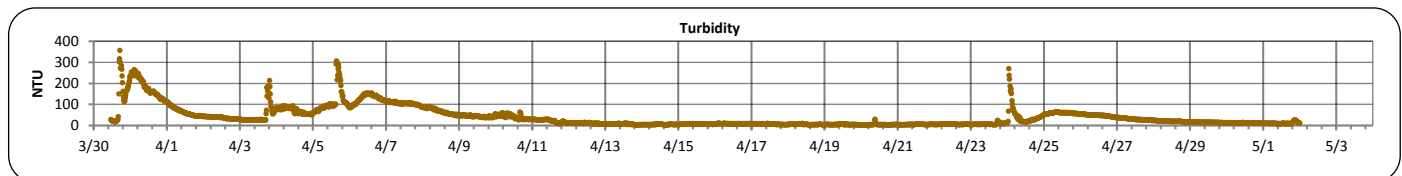
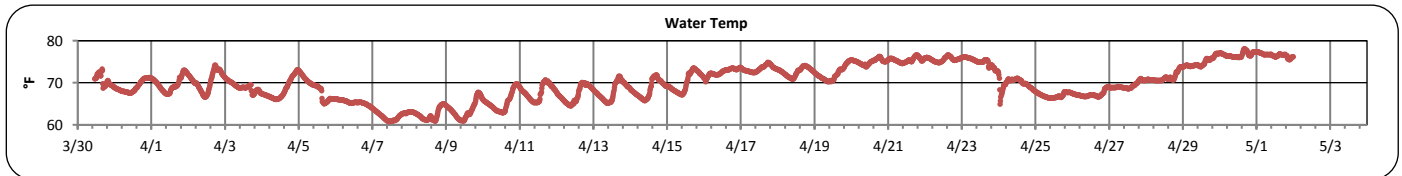
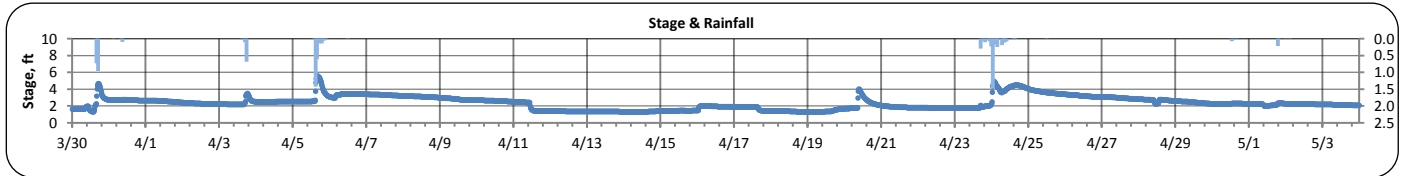
- At the GILA station, the stage was observed to rapidly and significantly drop from April 11th – 15th, and also April 17th – 19th. These abrupt changes in stage were likely due to a sudden decrease in the discharge of Gills Creek from Forest Lake. As has been observed previously at this station, this decreased stage was associated with an increase in pH and specific conductivity and a decrease in DO, as the flow from Eightmile Branch contributed a larger portion of flow to Gills Creek at the GILA station. The impacts from this were also observed at the GILB station.
- The turbidity levels at the GILB station were slightly elevated during baseflow conditions compared to typical levels. This is likely the result of the work being performed on Lake Katherine.

Flow Measurements

- Three flow measurements were recorded at the GILA site during this monitoring period. These were wet weather flow measurements recorded on April 6th.

Gills Creek A (March 30, 2017 -- May 3, 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):	1.3	5.6	2.3	2.4	0.8
LOCATION:	Forest Drive Bridge	TEMPERATURE (°F):	61	78	70	70	4
ADDRESS:	4840 Forest Drive, Columbia, SC 29206	TURBIDITY (NTU):	3	357	22	41	49
COORDINATES:	34.019826, -80.963566	pH:	6.1	7.2	6.4	6.5	0.2
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen	SPECIFIC CONDUCTIVITY (mS/cm):	0.029	0.107	0.044	0.052	0.019
NEIGHBORING LANDUSE:	Residential and commercial	DISSOLVED OXYGEN (mg/L):	4.6	9.2	8.1	7.9	0.9
APPROX. DRAINAGE AREA:	48 square miles						
SPATIAL LOCATION:	Most upstream site						
TOTAL NO. STORMS OVER 0.1 INCH:	7						
MAX. DAILY RAINFALL:	2.6 inches						
TOTAL RAINFALL (FOR PERIOD):	8.9 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 (March 30, 2017 -- May 3, 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:

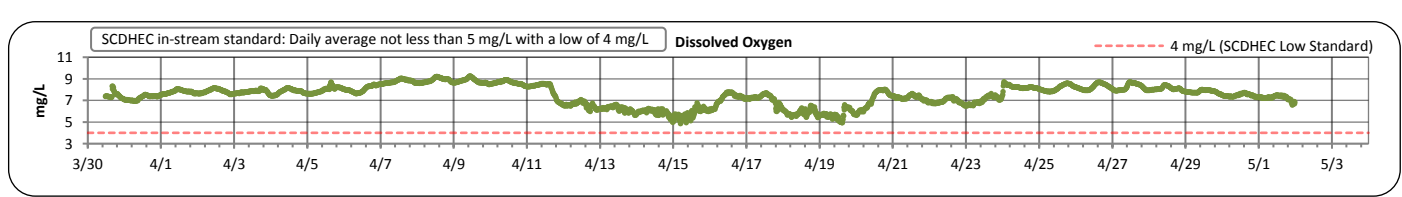
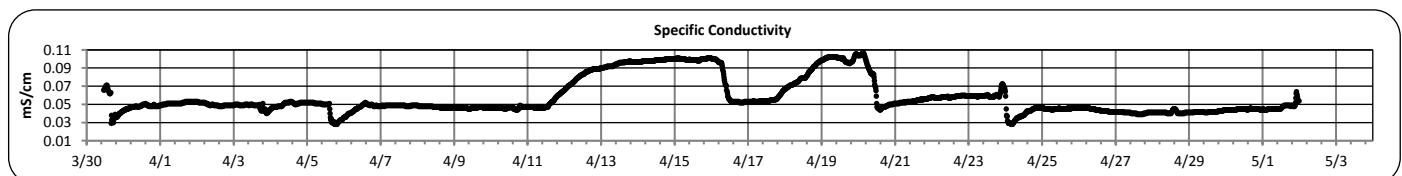
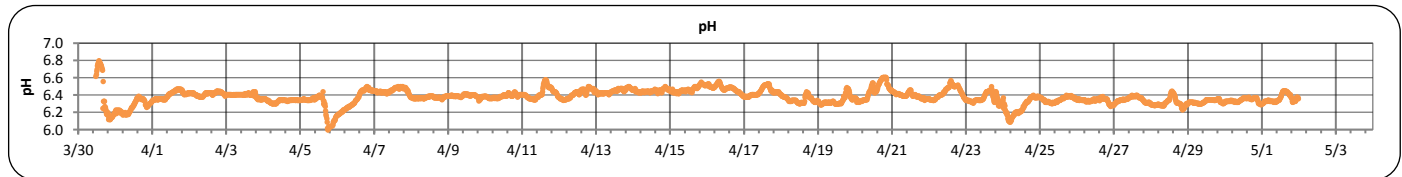
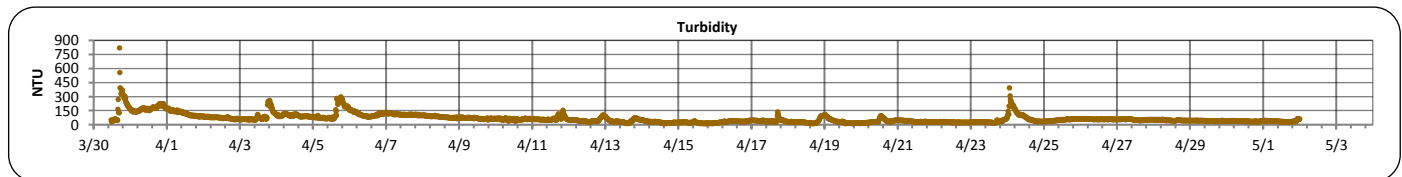
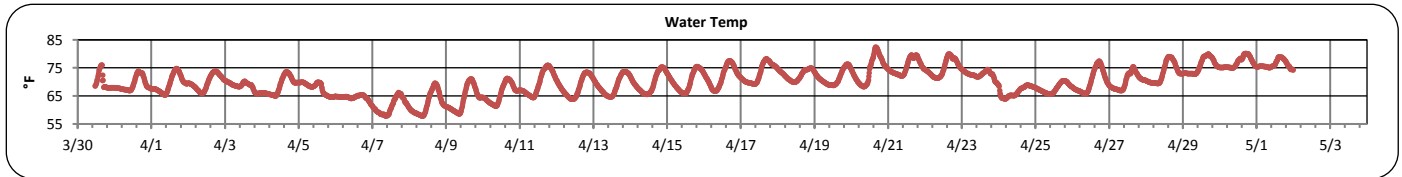
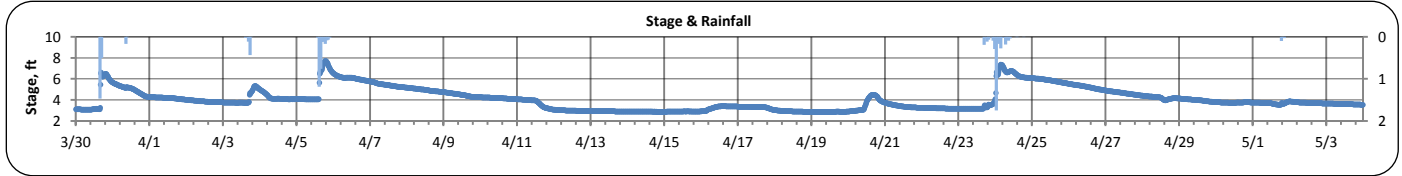
Analyte (units)	Sample 1		Sample 2		Sample 3		Sample 4	
	3/30/2017		3/31/2017		3/31/2017		3/31/2017	
	Time	Results	Time	Results	Time	Results	Time	Results
<i>Escherichia coli</i> (MPN/100mL)	10:22	196	8:52	4,494	10:05	5,818	12:03	2,024
Total Suspended Solids (mg/L)			8:52	172	10:05	202	12:03	130
Total Phosphorus (mg/L)			8:52	0.18	10:05	0.11	12:03	0.12
Total Nitrogen (mg/L)			8:52	1.63	10:05	1.01	12:03	0.98

Notes: The sample collected on 3/30/2017 was collected during dry weather conditions.

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

Gills Creek B (March 30, 2017 -- May 3, 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):	2.9	7.7	3.8	4.1	1.0
LOCATION:	Devine Street bridge	TEMPERATURE (°F):	58	83	70	70	5
ADDRESS:	4716 Devine Street Columbia, SC 29209	TURBIDITY (NTU):	13	822	53	67	50
COORDINATES:	33.989656, -80.97433	pH:	6.0	6.8	6.4	6.4	0.1
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen	SPECIFIC CONDUCTIVITY (mS/cm):	0.028	0.107	0.049	0.057	0.020
NEIGHBORING LANDUSE:	Residential and commercial	DISSOLVED OXYGEN (mg/L):	4.9	9.3	7.7	7.5	0.9
APPROX. DRAINAGE AREA:	59 square miles						
SPATIAL LOCATION:	Middle site						
TOTAL NO. STORMS OVER 0.1 INCH:	6						
MAX. DAILY RAINFALL:	2.7 inches						
TOTAL RAINFALL (FOR PERIOD):	8.9 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 (March 30, 2017 -- May 3, 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:

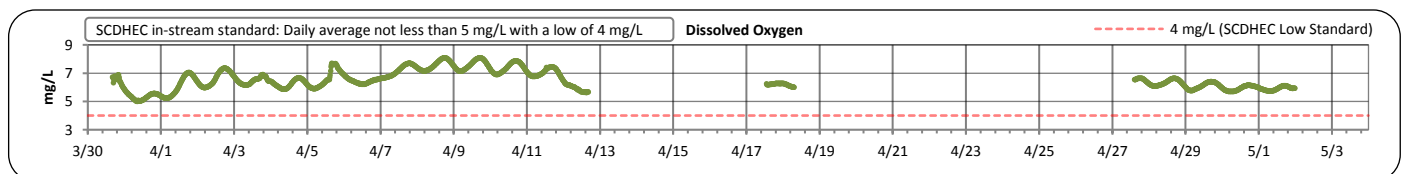
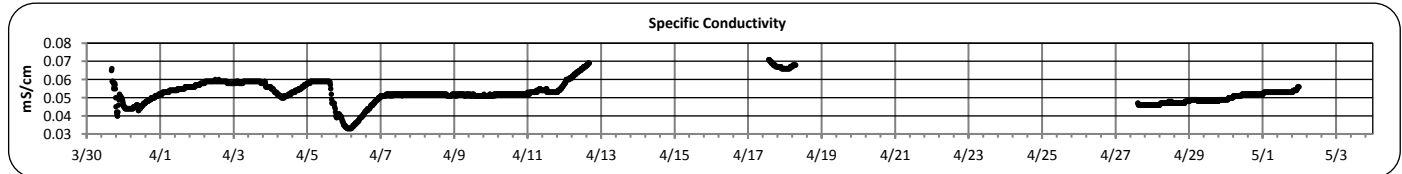
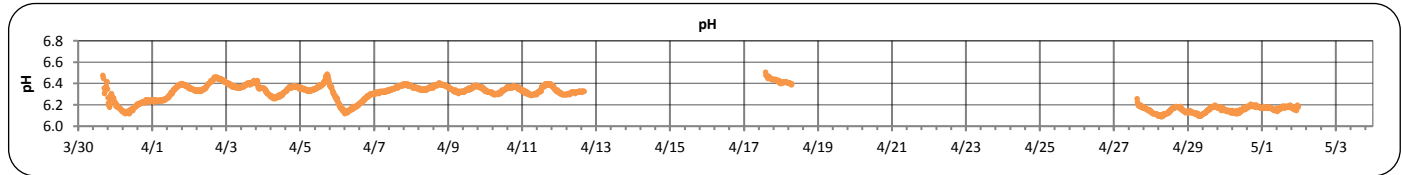
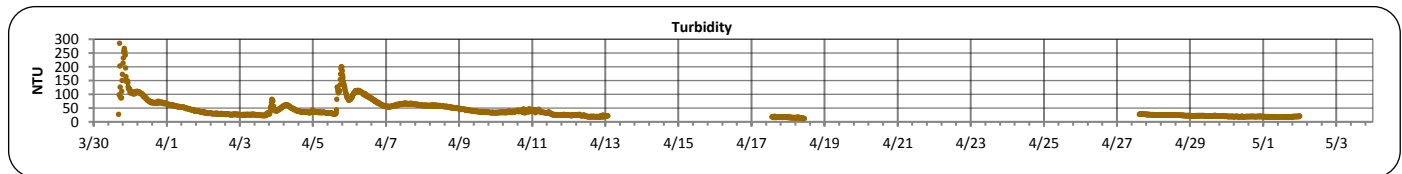
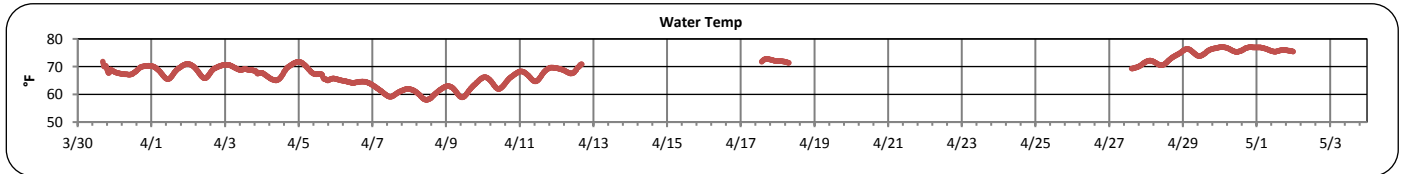
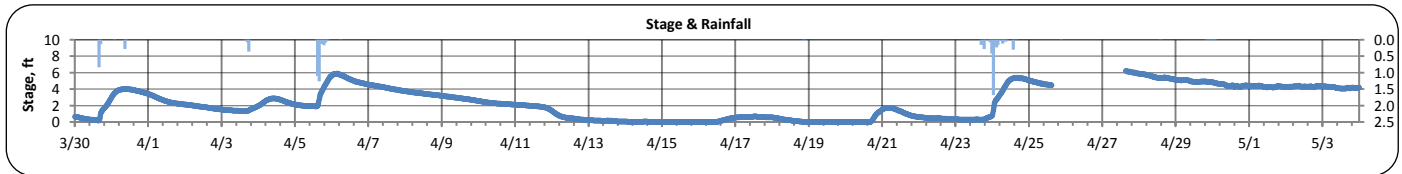
Analyte (units)	Sample 1		Sample 2		Sample 3		Sample 4	
	3/30/2017		3/31/2017		3/31/2017		3/31/2017	
	Time	Results	Time	Results	Time	Results	Time	Results
<i>Escherichia coli</i> (MPN/100mL)	10:36	446	9:13	4,092	10:24	5,446	12:19	2,708
Total Suspended Solids (mg/L)			9:13	114	10:24	112	12:19	131
Total Phosphorus (mg/L)			9:13	0.17	10:24	0.14	12:19	0.12
Total Nitrogen (mg/L)			9:13	1.19	10:24	1.35	12:19	1.11

Notes: The sample collected on 3/30/2017 was collected during dry weather conditions.

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

Gills Creek C (March 30, 2017 -- May 3, 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):	0.0	6.2	2.1	2.4	1.9
LOCATION:	Bluff Road bridge	TEMPERATURE (°F):	58	77	69	68	5
ADDRESS:	3009 Bluff Rd. Columbia, SC 29209	TURBIDITY (NTU):	12	287	34	43	31
COORDINATES:	33.948043, -80.9889	pH:	6.1	6.5	6.3	6.3	0.1
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen	SPECIFIC CONDUCTIVITY (mS/cm):	0.033	0.071	0.052	0.053	0.006
NEIGHBORING LANDUSE:	Residential and commercial	DISSOLVED OXYGEN (mg/L):	5.0	8.1	6.4	6.5	0.7
APPROX. DRAINAGE AREA:	64 square miles						
SPATIAL LOCATION:	Most downstream site						
TOTAL NO. STORMS OVER 0.1 INCH:	7						
MAX. DAILY RAINFALL:	2.94 inches						
TOTAL RAINFALL (FOR PERIOD):	8.6 inches						



Note: Data gaps appear when the sonde is removed for calibration or when the flow depth is below the sensors. A station modification was performed at this site on April 27th.

**Continuous Water Quality
Monitoring Periodic Report**

Gills Creek C (March 30, 2017 -- May 3, 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	
	3/30/2017		3/31/2017		3/31/2017		3/31/2017	
	Time	Results	Time	Results	Time	Results	Time	Results
<i>Escherichia coli</i> (MPN/100mL)	10:50	40	9:39	3,700	10:55	4,284	12:36	3,570
Total Suspended Solids (mg/L)			9:39	45.2	10:55	40.5	12:36	36
Total Phosphorus (mg/L)			9:39	0.11	10:55	0.15	12:36	0.093
Total Nitrogen (mg/L)			9:39	1.05	10:55	0.95	12:36	0.92

Notes: The sample collected on 3/30/2017 was collected during dry weather conditions.

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