

# Gills Creek Monitoring Sites

## Monitoring Data Summary for February 20<sup>th</sup>, 2020 – March 25<sup>th</sup>, 2020

### *Data Gaps*

- The GILA station sonde was buried in sediment for a brief period from February 24<sup>th</sup> to 28<sup>th</sup>. The turbidity, DO, and pH sensors were buried during this time, so the data for those parameters were removed during this period.
- Several brief periods of turbidity fouling occurred at the GILA station throughout this monitoring period and these periods of turbidity data were deleted from the dataset.
- The GILB and GILC stations did not have any interruptions in the data during this monitoring period.

### *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 station recorded an average DO value of 9.9 mg/L, the GILB station recorded an average DO value of 9.7 mg/L, and the GILC station recorded an average DO value of 9.2 mg/L, all of which are above the SCDHEC daily average DO standard of 5 mg/L.
- During this deployment period, the GILA, GILB, and GILC stations recorded minimum DO levels of 8.4 mg/L, 7.9 mg/L, and 6.3 mg/L, respectively. All the stations in the Gills Creek watershed recorded DO values above the SCDHEC instantaneous minimum standard of 4 mg/L.

### *Storm Events*

- The GILA station recorded 11 storm events resulting in approximately 6.2 inches of rainfall. The GILB station recorded 9 storms that resulted in approximately 5.9 inches of rainfall. The GILC station recorded 11 storms that resulted in approximately 5.2 inches of rainfall.
- The monitored water quality parameters all displayed typical storm event response patterns during the recorded storm events in the Gills Creek watershed.
- The maximum antecedent dry time since the last significant precipitation event (at least 0.1 inches) was approximately 11.5 days at the GILA and GILB stations, occurring prior to the March 17<sup>th</sup> storm event. The maximum antecedent dry time was approximately 16.9 days at the GILC station, occurring prior to the March 22<sup>nd</sup> storm event.

### *Potential Illicit Discharges and Abnormal Events*

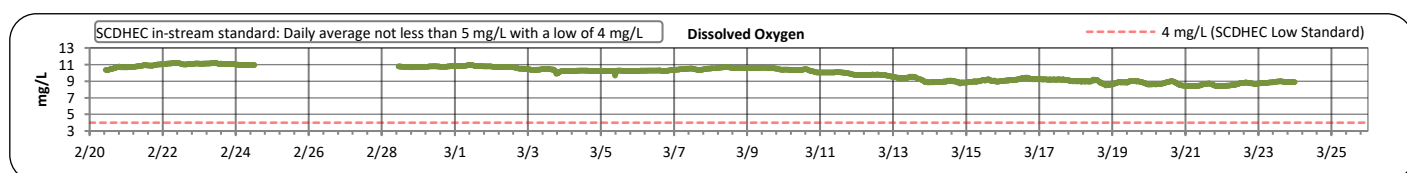
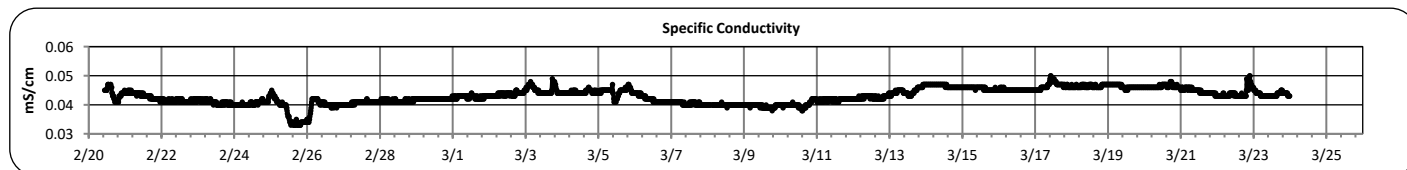
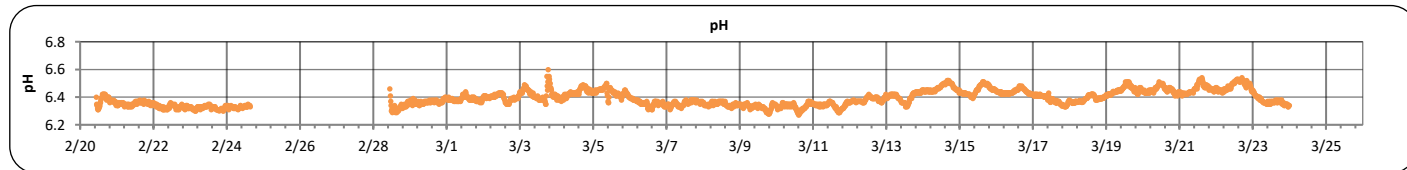
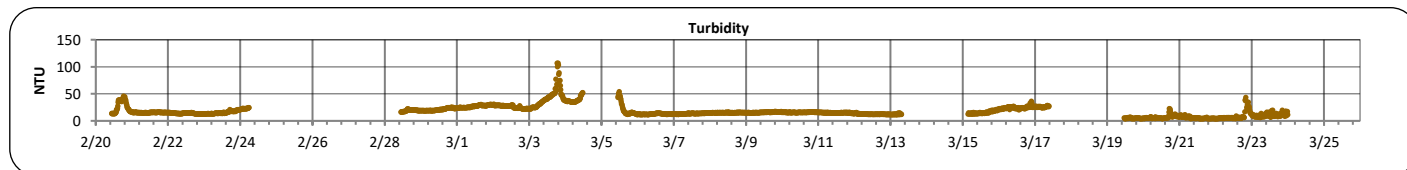
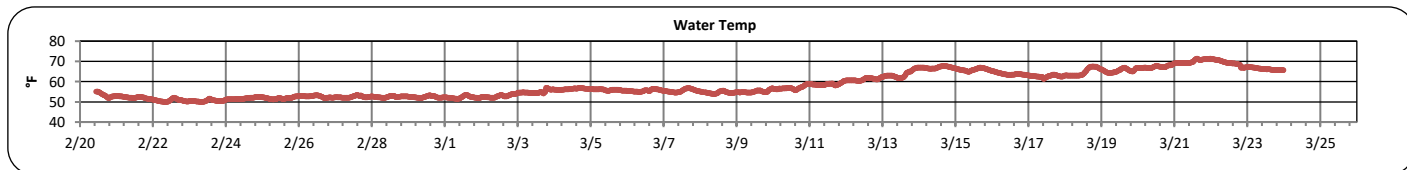
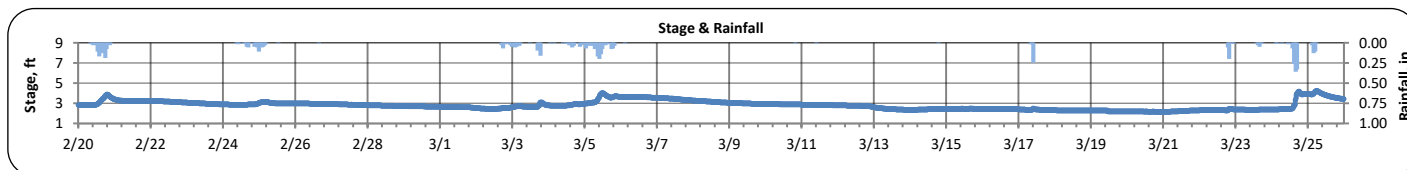
- At the GILA station, the specific conductivity decreased for a brief period on February 25<sup>th</sup> just after the storm event on February 24<sup>th</sup>. The reason for the decreased specific conductivity during this time is unknown but could have been the result of an illicit discharge activity.

### *Flow Measurements*

- High flow measurements were taken at GILA and GILC during the rain event on March 5<sup>th</sup>.

Gills Creek A (Feb 20, 2020 - March 25, 2020)

PARAMETER	DESCRIPTION	CONTINUOUS WATER QUALITY PARAMETERS:	SUMMARY STATISTICS				
			MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION
STREAM NAME:	Gills Creek	STAGE (FT):	2.2	4.2	2.8	2.8	0.4
LOCATION:	Forest Drive Bridge	TEMPERATURE (°F):	50	71	56	58	6
ADDRESS:	4840 Forest Drive, Columbia, SC 29206	TURBIDITY (NTU):	4	107	15	18	10
COORDINATES:	34.019826, -80.963566	pH:	6.3	6.6	6.4	6.4	0.1
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen	SPECIFIC CONDUCTIVITY (mS/cm):	0.033	0.050	0.043	0.043	0.003
NEIGHBORING LANDUSE:	Residential and commercial	DISSOLVED OXYGEN (mg/L):	8.4	11.2	10.2	9.9	0.8
APPROX. DRAINAGE AREA:	48 square miles						
SPATIAL LOCATION:	Most upstream site						
TOTAL NO. STORMS OVER 0.1 INCH:	11						
MAX. DAILY RAINFALL:	1.3 inches						
TOTAL RAINFALL (FOR PERIOD):	6.2 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 A (Feb 20, 2020 - March 25, 2020)**

**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.

**Sampled Data:**

Analyte (units)	Sample 1		Sample 2		Sample 3		Sample 4	
	3/5/2020		3/5/2020		3/5/2020			
	Time	Results	Time	Results	Time	Results	Time	Results
<i>Escherichia coli</i> (MPN/100mL)	10:30	1666	11:13	24,446	12:35	1218		
Total Suspended Solids (mg/L)	10:30	59.3	11:13	47.1	12:35	33.5		
Total Phosphorus (mg/L)	10:30	0.063	11:13	0.054	12:35	0.045		
Total Nitrogen (mg/L)	10:30	0.9	11:13	0.53	12:35	0.67		

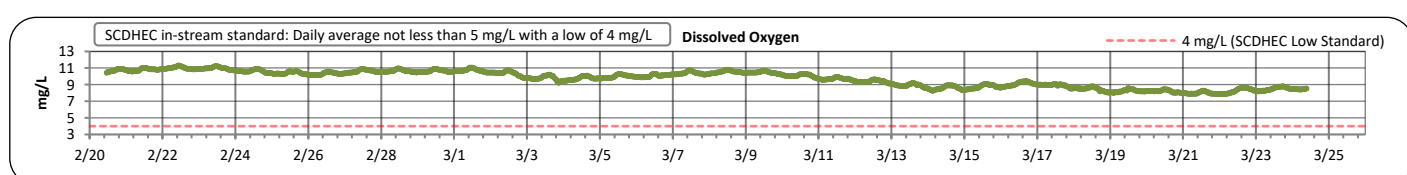
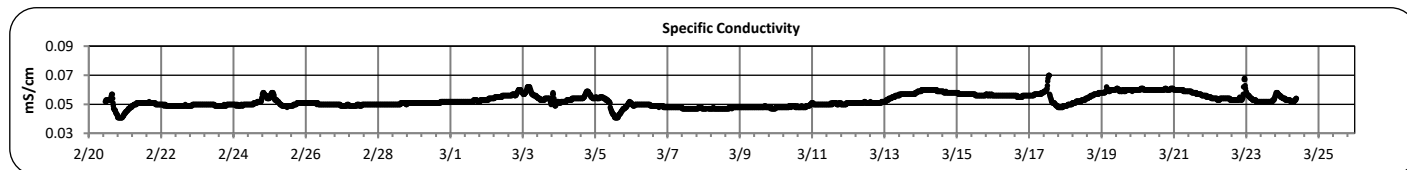
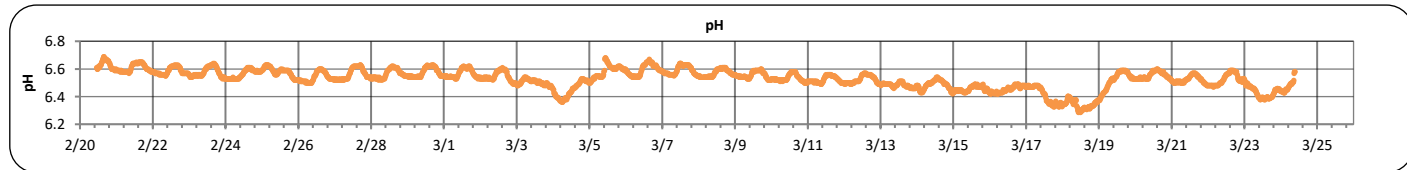
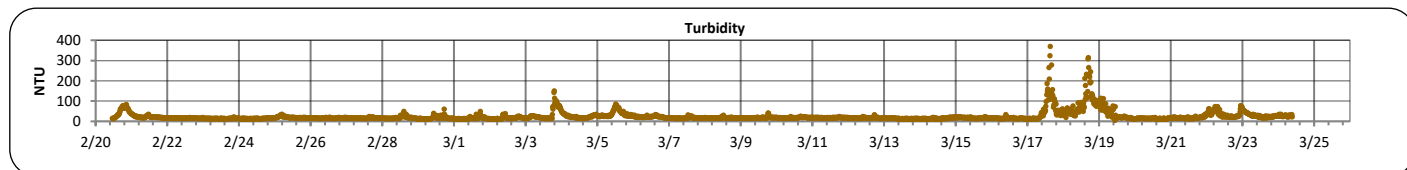
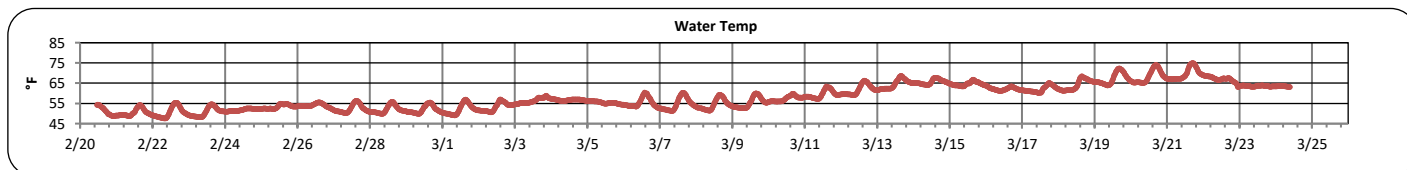
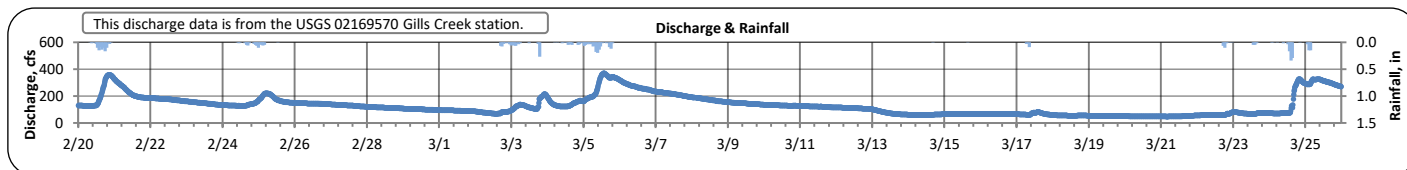
Notes: All samples were taken during wet weather conditions.

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

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**Gills Creek B (Feb 20, 2020 - March 25, 2020)**

PARAMETER	DESCRIPTION	CONTINUOUS WATER QUALITY PARAMETERS:	SUMMARY STATISTICS				
			MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION
STREAM NAME:	Gills Creek	DISCHARGE (CFS):	48.7	370.0	122.0	132.1	73.7
LOCATION:	Devine Street bridge	TEMPERATURE (°F):	48	75	56	58	6
ADDRESS:	4716 Devine Street Columbia, SC 29209	TURBIDITY (NTU):	6	371	18	25	24
COORDINATES:	33.989656, -80.97433	pH:	6.3	6.7	6.5	6.5	0.1
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen	SPECIFIC CONDUCTIVITY (mS/cm):	0.041	0.070	0.051	0.053	0.004
NEIGHBORING LANDUSE:	Residential and commercial	DISSOLVED OXYGEN (mg/L):	7.9	11.3	10.1	9.7	1.0
APPROX. DRAINAGE AREA:	59 square miles						
SPATIAL LOCATION:	Middle site						
TOTAL NO. STORMS OVER 0.1 INCH:	9						
MAX. DAILY RAINFALL:	1.3 inches						
TOTAL RAINFALL (FOR PERIOD):	5.9 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 (Feb 20, 2020 - March 25, 2020)**

**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.

**Sampled Data:**

Analyte (units)	Sample 1		Sample 2		Sample 3		Sample 4		Sample 5	
	3/5/2020		3/5/2020		3/5/2020		3/5/2020		3/20/2020	
	Time	Results	Time	Results	Time	Results	Time	Results	Time	Results
<i>Escherichia coli</i> (MPN/100mL)	9:50	2,306	11:10	2,966	13:36	2,708	14:47	2628	10:06	316
Total Suspended Solids (mg/L)	9:50	43.2	11:10	70.3	13:36	59.7	14:47	46.6	10:06	16.4
Total Phosphorus (mg/L)	9:50	0.053	11:10	0.065	13:36	0.058	14:47	0.06		
Total Nitrogen (mg/L)	9:50	0.9	11:10	0.98	13:36	0.68	14:47	0.57		

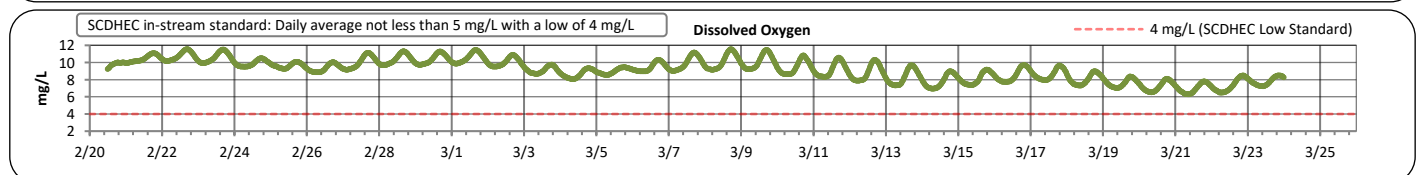
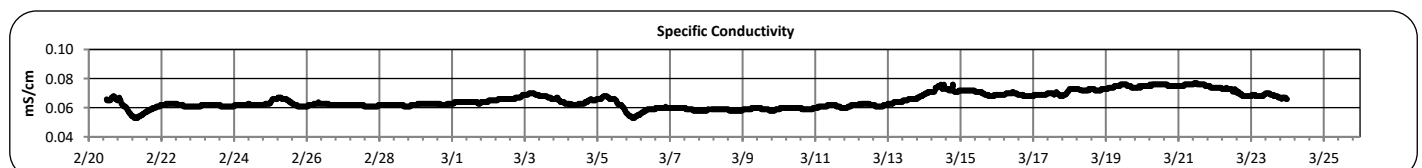
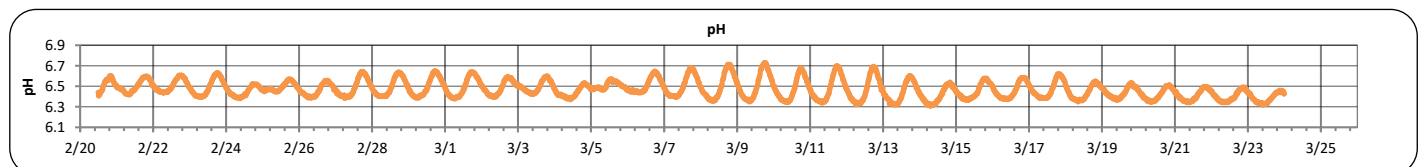
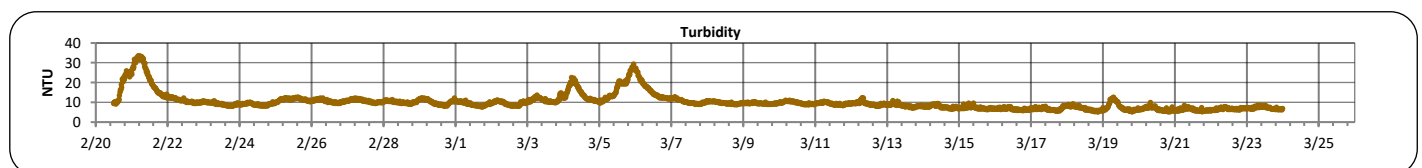
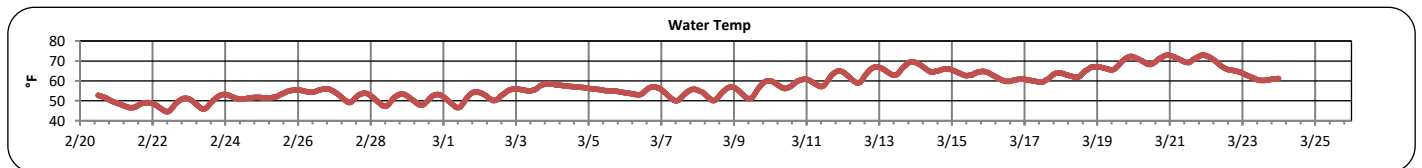
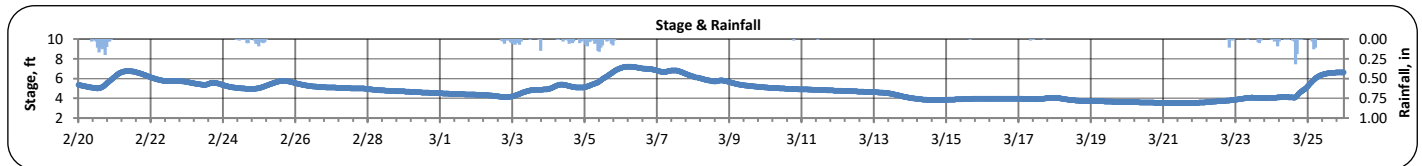
Notes: Samples 1, 2, 3, and 4 were taken during wet weather conditions. Sample 5 was taken during dry weather conditions.

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

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Gills Creek C (Feb 20, 2020 - March 25, 2020)

PARAMETER	DESCRIPTION	CONTINUOUS WATER QUALITY PARAMETERS:	SUMMARY STATISTICS				
			MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION
STREAM NAME:	Gills Creek	STAGE (FT):	3.5	7.2	4.9	4.9	0.9
LOCATION:	Bluff Road bridge	TEMPERATURE (°F):	45	73	56	58	7
ADDRESS:	3009 Bluff Rd. Columbia, SC 29209	TURBIDITY (NTU):	5	34	10	10	4
COORDINATES:	33.948043, -80.9889	pH:	6.3	6.7	6.5	6.5	0.1
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen	SPECIFIC CONDUCTIVITY (mS/cm):	0.053	0.077	0.063	0.065	0.005
NEIGHBORING LANDUSE:	Residential and commercial	DISSOLVED OXYGEN (mg/L):	6.3	11.6	9.3	9.2	1.2
APPROX. DRAINAGE AREA:	64 square miles						
SPATIAL LOCATION:	Most downstream site						
TOTAL NO. STORMS OVER 0.1 INCH:	11						
MAX. DAILY RAINFALL:	1.1 inches						
TOTAL RAINFALL (FOR PERIOD):	5.2 inches						



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

REPORT GENERATED ON 06/02/2020

**Continuous Water Quality  
Monitoring Periodic Report**

**Gills Creek C (Feb 20, 2020 - March 25, 2020)**

**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.

**Sampled Data:**

Analyte (units)	Sample 1		Sample 2		Sample 3		Sample 4		Sample 5	
	3/5/2020		3/5/2020		3/5/2020		3/5/2020		3/20/2020	
	Time	Results	Time	Results	Time	Results	Time	Results	Time	Results
<i>Escherichia coli</i> (MPN/100mL)	10:10	422	11:30	564	13:55	700	15:05	596	10:31	20
Total Suspended Solids (mg/L)	10:10	8	11:30	8.8	13:55	11.7	15:05	10.3	10:31	7.2
Total Phosphorus (mg/L)	10:10	0.04	11:30	0.037	13:55	0.033	15:05	0.039		
Total Nitrogen (mg/L)	10:10	0.92	11:30	0.61	13:55	0.64	15:05	0.8		

Notes: Samples 1, 2, 3, and 4 were taken during wet weather conditions. Sample 5 was taken during dry weather conditions.

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

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