Gills Creek Monitoring Sites
Monitoring Data Summary for
February 23rd, 2017 – March 29th, 2017

Data Gaps

- The GILA sonde experienced one period of significant pH fouling due to pollen accumulation on the sensors. This occurred on March 2nd – 3rd, following a storm event which washed significant pollen into Gills Creek.
- The GILB station recorded a complete dataset during this monitoring period with no gaps in the data record or periods of significant fouling.
- The GILC sonde was not deployed until February 27th, due to very low stage levels at the monitoring station.

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 9.4 mg/L, 9.1 mg/L, and 8.8 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 6.8 mg/L, 7.4 mg/L, and 6.2 mg/L, respectively, during this deployment, well above the SCDHEC instantaneous minimum standard of 4.0 mg/L.

Storm Events

- Four storm events were recorded at the GILA and GILC stations and five storm events were recorded at the GILB station during this deployment period, resulting in 2.3 inches, 2.8 inches, and 2.3 inches of total precipitation at the GILA, GILB, and GILC stations, respectively.
- The water quality parameters at the Gills Creek watershed displayed typical storm event response patterns in the turbidity dataset for the majority of recorded storm events. However, the specific conductivity showed moderate increases at all of the Gills Creek monitoring stations during this deployment.
- The maximum antecedent dry time since the last significant precipitation event (at least 0.1 inches) was approximately 14 days in the Gills Creek watershed, and occurred prior to the March 1st- 2nd storm event.

Potential Illicit Discharges and Abnormal Events

- At the GILA station, very low stage levels were observed when the sonde was deployed, and these stage levels were observed to rapidly increase on February 23rd and 24th, likely due to a sudden increase in the discharge 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 in the first days of the deployment.
- The turbidity levels at the GILA and GILB stations were slightly elevated during baseflow conditions compared to typical levels. This is likely the result of the work being performed on Forest Lake and Lake Katherine.

Flow Measurements

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

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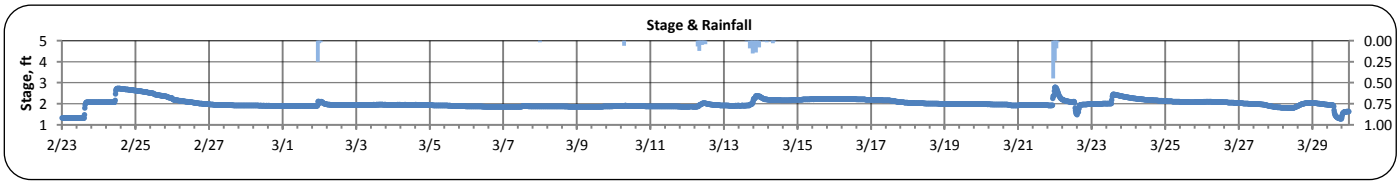
Continuous Water Quality Monitoring Periodic Report

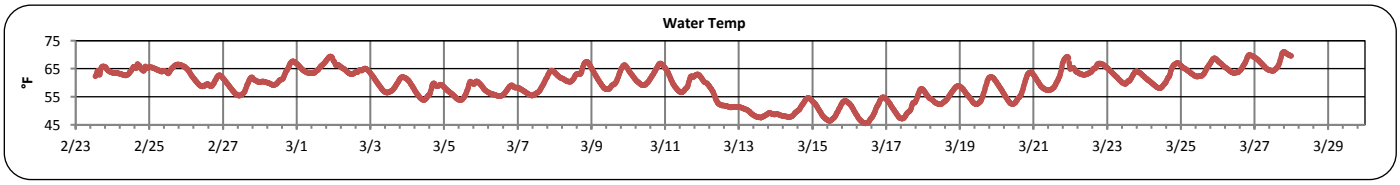
WOOLPERT

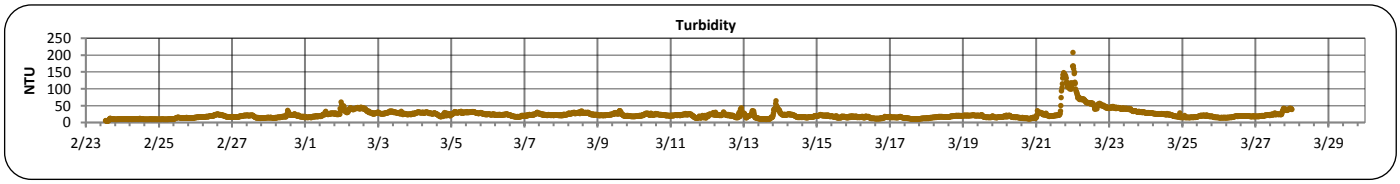
Gills Creek A (February 23, 2017 -- March 29, 2017)

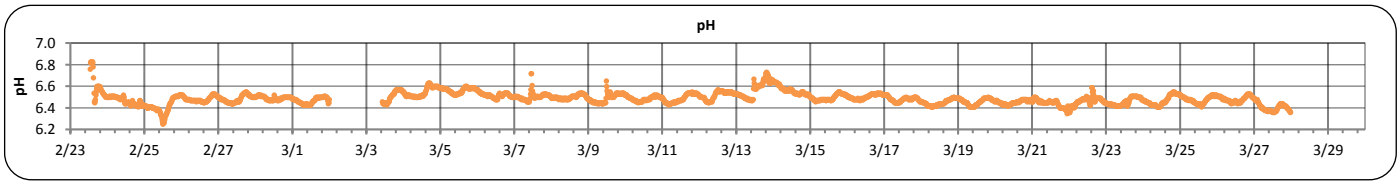
PARAMETER	DESCRIPTION
STREAM NAME:	Gills Creek
LOCATION:	Forest Drive Bridge
ADDRESS:	4840 Forest Drive, Columbia, SC 29206
COORDINATES:	34.019826, -80.963566
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen
NEIGHBORING LANDUSE:	Residential and commercial
APPROX. DRAINAGE AREA:	48 square miles
SPATIAL LOCATION:	Most upstream site
TOTAL NO. STORMS OVER 0.1 INCH:	4
MAX. DAILY RAINFALL:	0.7 inches
TOTAL RAINFALL (FOR PERIOD):	2.3 inches

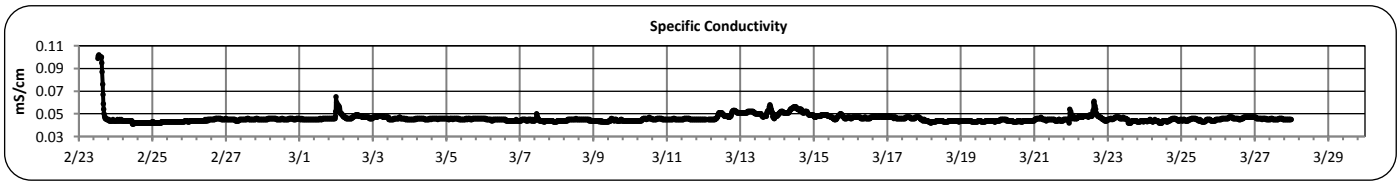
CONTINUOUS WATER QUALITY PARAMETERS:	SUMMARY STATISTICS				
	MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION
STAGE (FT):	1.3	2.8	2.0	2.0	0.2
TEMPERATURE (°F):	46	71	60	60	6
TURBIDITY (NTU):	5	208	21	24	15
pH:	6.3	6.8	6.5	6.5	0.1
SPECIFIC CONDUCTIVITY (mS/cm):	0.041	0.102	0.045	0.046	0.004
DISSOLVED OXYGEN (mg/L):	6.8	11.4	9.3	9.4	0.8

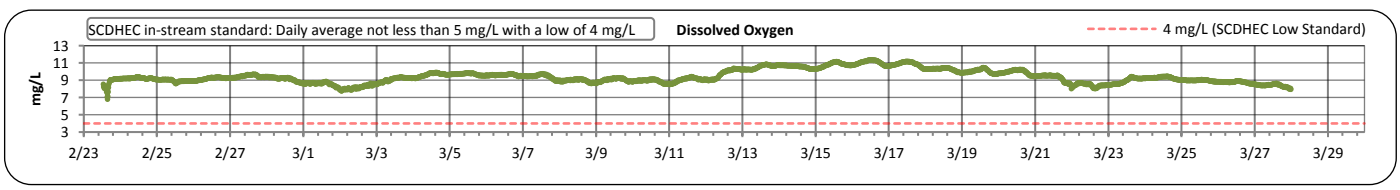












Note: Data gaps appear when the sonde is removed for calibration or when the flow depth is below the sensors

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Continuous Water Quality
Monitoring Periodic Report

Gills Creek A (February 23, 2017 -- March 29, 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
Escherichia coli (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

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Continuous Water Quality Monitoring Periodic Report

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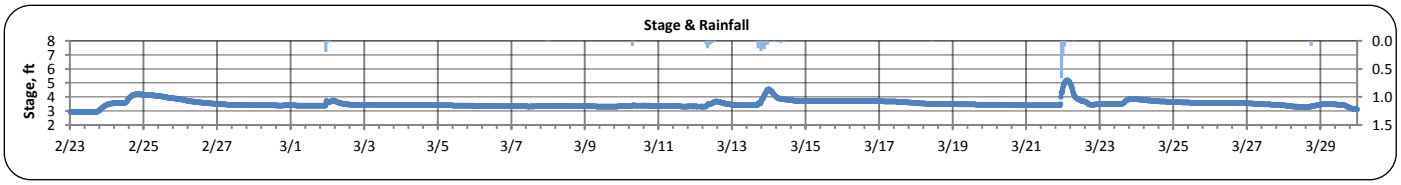
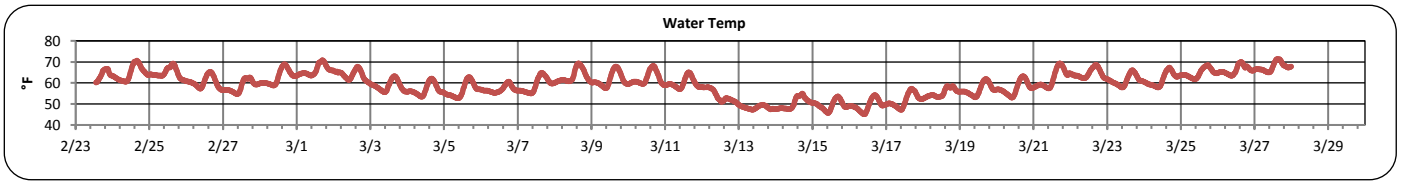
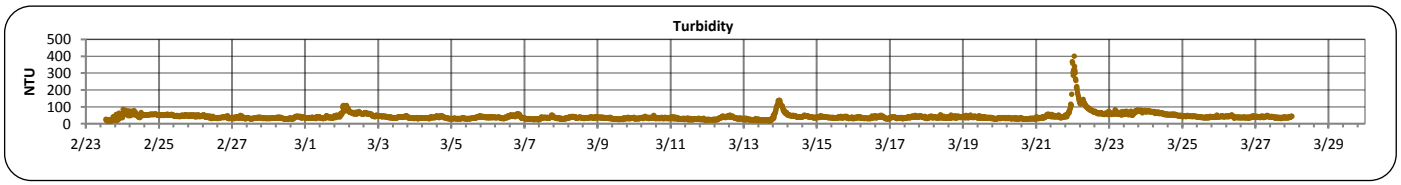
Gills Creek B (February 23, 2017 -- March 29, 2017)

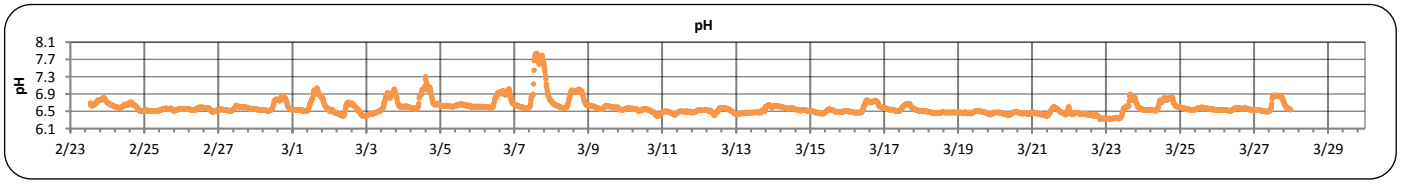
PARAMETER	DESCRIPTION
STREAM NAME:	Gills Creek
LOCATION:	Devine Street bridge
ADDRESS:	4716 Devine Street Columbia, SC 29209
COORDINATES:	33.989656, -80.97433
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen
NEIGHBORING LANDUSE:	Residential and commercial
APPROX. DRAINAGE AREA:	59 square miles
SPATIAL LOCATION:	Middle site
TOTAL NO. STORMS OVER 0.1 INCH:	5
MAX. DAILY RAINFALL:	1.0 inches
TOTAL RAINFALL (FOR PERIOD):	2.8 inches

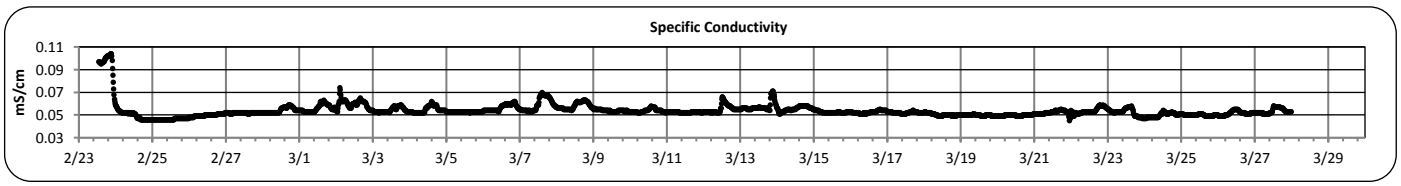
CONTINUOUS WATER QUALITY PARAMETERS:	SUMMARY STATISTICS				
	MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION
STAGE (FT):	2.9	5.2	3.5	3.5	0.3
TEMPERATURE (°F):	45	71	60	59	6
TURBIDITY (NTU):	15	402	38	43	24
pH:	6.3	7.8	6.6	6.6	0.2
SPECIFIC CONDUCTIVITY (mS/cm):	0.045	0.104	0.053	0.054	0.006
DISSOLVED OXYGEN (mg/L):	7.4	11.3	9.0	9.1	0.8

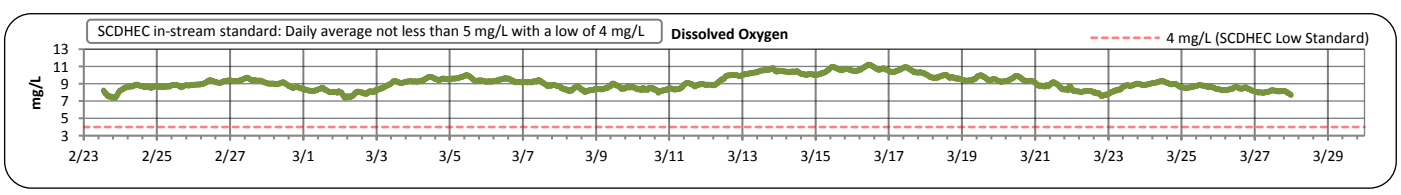












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Continuous Water Quality
Monitoring Periodic Report

Gills Creek B (February 23, 2017 -- March 29, 2017)

Explanation of Statistics:

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Sampled Data:

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

Notes:

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City of Columbia, SC Stormwater Management — Partnering for clean waterways

Continuous Water Quality Monitoring Periodic Report

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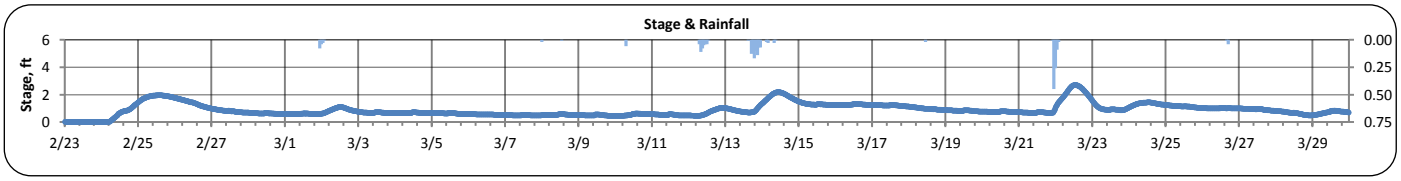
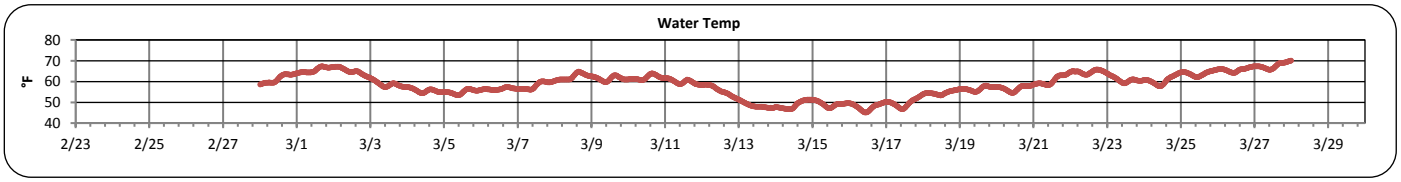
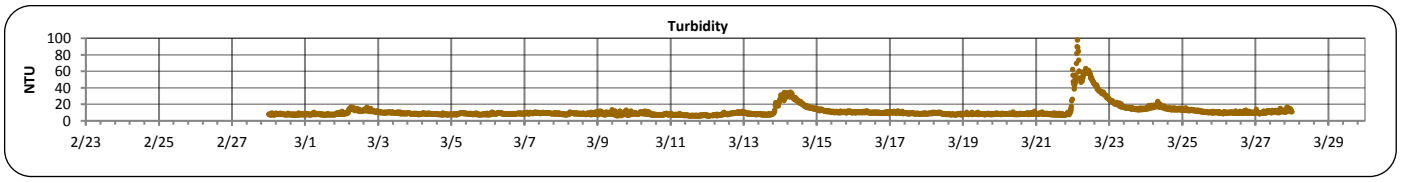
Gills Creek C (February 23, 2017 -- March 29, 2017)

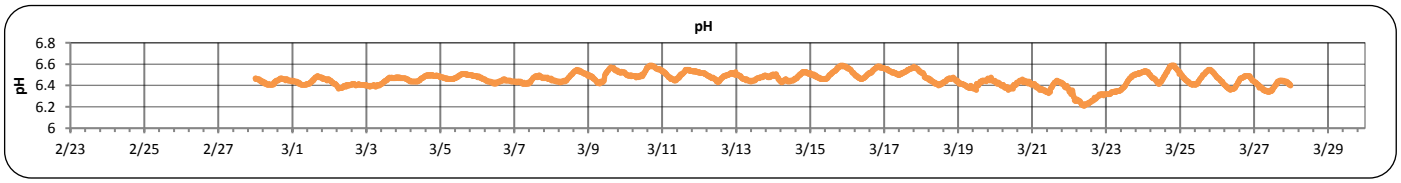
PARAMETER	DESCRIPTION
STREAM NAME:	Gills Creek
LOCATION:	Bluff Road bridge
ADDRESS:	3009 Bluff Rd. Columbia, SC 29209
COORDINATES:	33.948043, -80.9889
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen
NEIGHBORING LANDUSE:	Residential and commercial
APPROX. DRAINAGE AREA:	64 square miles
SPATIAL LOCATION:	Most downstream site
TOTAL NO. STORMS OVER 0.1 INCH:	4
MAX. DAILY RAINFALL:	0.73 inches
TOTAL RAINFALL (FOR PERIOD):	2.3 inches

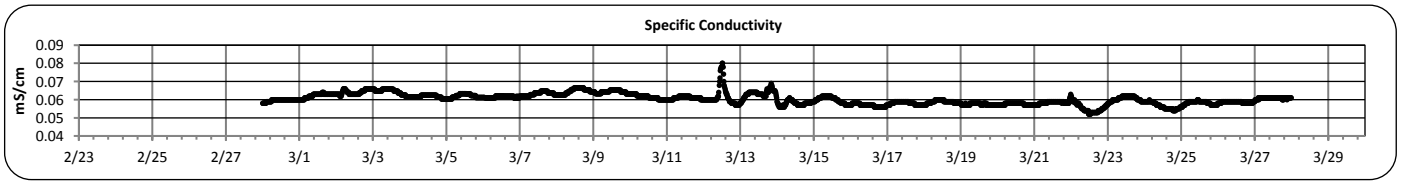
CONTINUOUS WATER QUALITY PARAMETERS:	SUMMARY STATISTICS				
	MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION
STAGE (FT):	0.0	2.7	0.8	0.9	0.5
TEMPERATURE (°F):	45	70	59	58	6
TURBIDITY (NTU):	6	98	9	12	9
pH:	6.2	6.6	6.5	6.5	0.1
SPECIFIC CONDUCTIVITY (mS/cm):	0.052	0.08	0.06	0.060	0.003
DISSOLVED OXYGEN (mg/L):	6.2	11.4	8.9	8.8	1.0

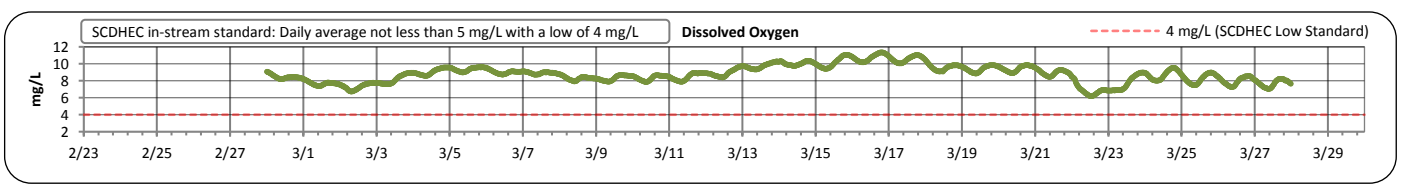












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Continuous Water Quality
Monitoring Periodic Report

Gills Creek C (February 23, 2017 -- March 29, 2017)

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Total Suspended Solids (mg/L)								
Total Phosphorus (mg/L)								
Total Nitrogen (mg/L)								

Notes:

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