

Gills Creek Monitoring Sites

Monitoring Data Summary for August 29th, 2019 – October 2nd, 2019

Data Gaps

- The GILA and GILB stations did not have any interruptions in the data during this monitoring period.
- The GILC station experienced turbidity sensor fouling from September 12th-14th. This period of turbidity data was removed from the dataset.

SCDHEC Standards

- The GILA and GILB stations recorded minimum pH values of 5.9 which is slightly below the acceptable SCDHEC range of 6 to 8.5.
- The GILC station did not record a pH reading outside of the acceptable SCDHEC range of 6 to 8.5.
- The GILA station recorded an average DO value of 6.5 mg/L, the GILB station recorded an average DO value of 4.5 mg/L, and the GILC station recorded an average DO value of 5.3 mg/L. GILA and GILB are above the SCDHEC daily average DO standard of 5 mg/L, while GILB is below this standard.
- During this deployment period, the GILA, GILB, and GILC stations recorded minimum DO levels of 4.5 mg/L, 1.1 mg/L, and 4.1 mg/L, respectively. GILA and GILC did not record any DO values below the SCDHEC instantaneous minimum standard of 4 mg/L. GILB recorded DO values below this standard. These low values at GILB were likely due to a combination of warm temperatures and low to stagnant flow in the creek during this monitoring period.

Storm Events

- The GILA station recorded 2 storm events resulting in approximately 1.7 inches of rainfall. The GILB station recorded 4 storms that resulted in approximately 1.6 inches of rainfall. The GILC station recorded 3 storms that resulted in approximately 2.0 inches of rainfall.
- The monitored water quality parameters in the Gills Creek watershed all displayed typical storm event response patterns during the recorded storm events.
- The maximum antecedent dry time since the last significant precipitation event (at least 0.1 inches) was approximately 26.5 days at the GILA station, occurring after the September 5th storm event until the end of the monitoring period.
- The maximum antecedent dry time since the last significant precipitation event (at least 0.1 inches) at the GILB station was approximately 17.1 days and approximately 25.3 days at the GILC station, both occurring prior to the September 30th storm event.

Potential Illicit Discharges and Abnormal Events

- At the GILA station, slightly elevated specific conductivity was observed for a brief period on September 3rd. This could have been associated with a potential illicit discharge activity. No other monitored water quality parameters were impacted at this time.
- At the GILA station, specific conductivity decreased from September 15th-16th following the typical response pattern to a storm event; however, there was no storm event at this time.

Flow Measurements

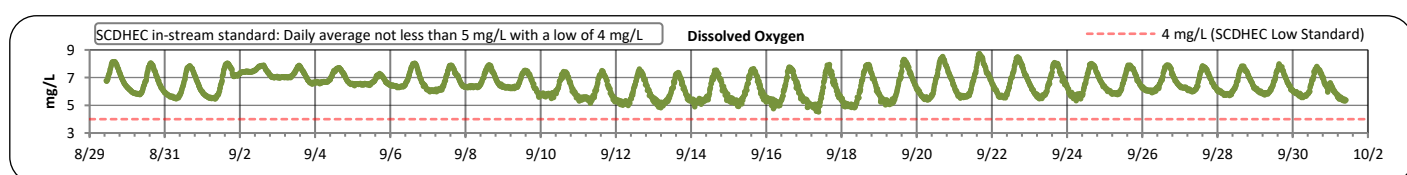
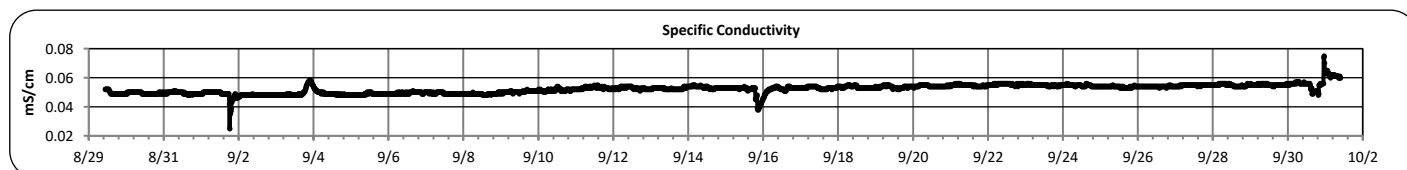
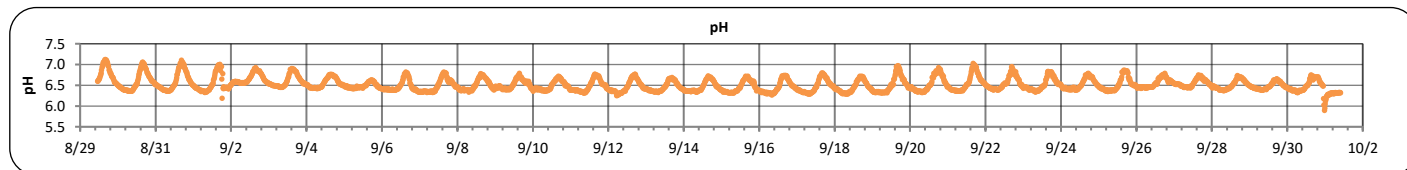
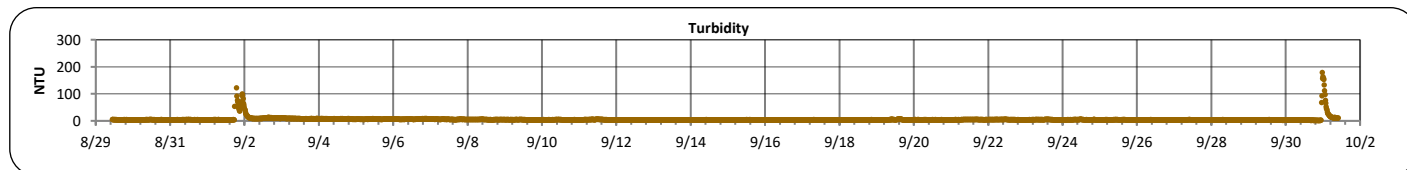
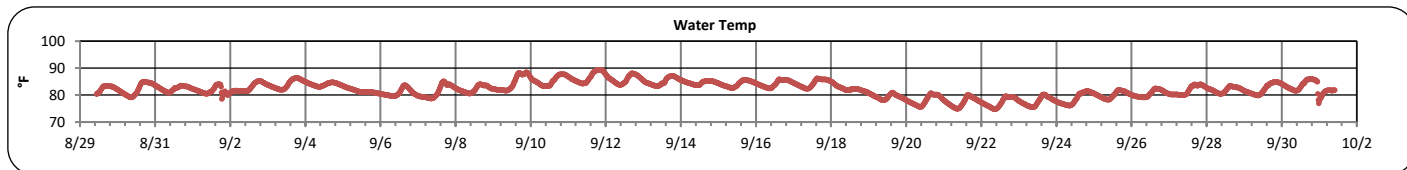
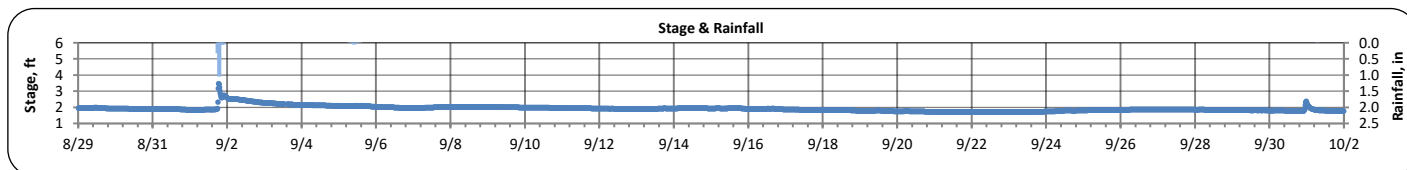
- No flow measurements were taken in Gills Creek during this monitoring period.

Notes

- The GILB CS451 pressure transducer was not recording continuous readings during this deployment period, so the CS451 stage data for this deployment period was deleted. For the periodic report, the discharge data from the USGS 02169570 Gills Creek station was used instead of the CS451 stage data. This USGS station is located directly downstream of the GILB monitoring station.

Gills Creek A (August 29, 2019 -- October 2, 2019)

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	3.5	1.9	1.9	0.2
LOCATION:	Forest Drive Bridge	TEMPERATURE (°F):	75	89	82	82	3
ADDRESS:	4840 Forest Drive, Columbia, SC 29206	TURBIDITY (NTU):	2	1335	4	7	31
COORDINATES:	34.019826, -80.963566	pH:	5.9	7.1	6.5	6.5	0.2
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen	SPECIFIC CONDUCTIVITY (mS/cm):	0.025	0.075	0.053	0.052	0.003
NEIGHBORING LANDUSE:	Residential and commercial	DISSOLVED OXYGEN (mg/L):	4.5	8.7	6.5	6.5	0.8
APPROX. DRAINAGE AREA:	48 square miles						
SPATIAL LOCATION:	Most upstream site						
TOTAL NO. STORMS OVER 0.1 INCH:	2						
MAX. DAILY RAINFALL:	1.5 inches						
TOTAL RAINFALL (FOR PERIOD):	1.7 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 (August 29, 2019 -- October 2, 2019)

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.

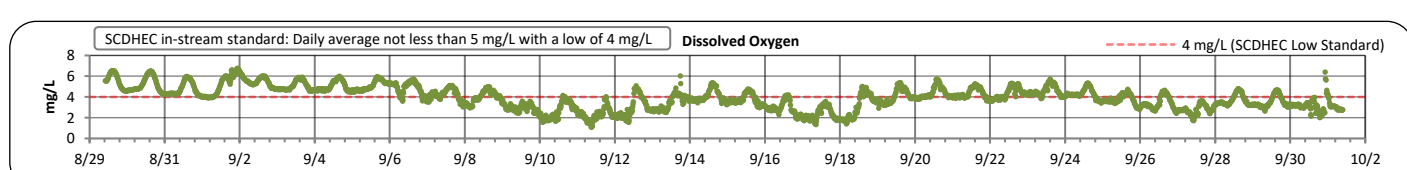
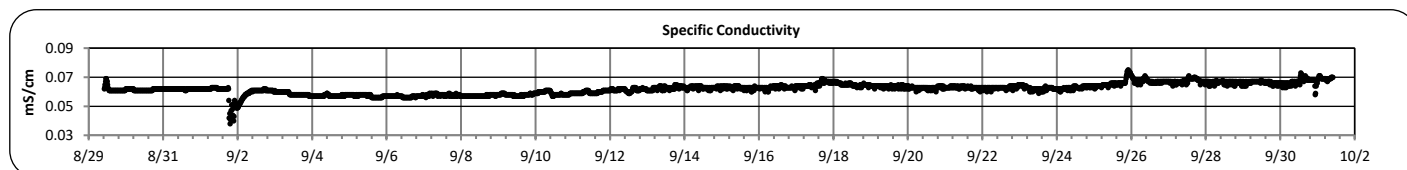
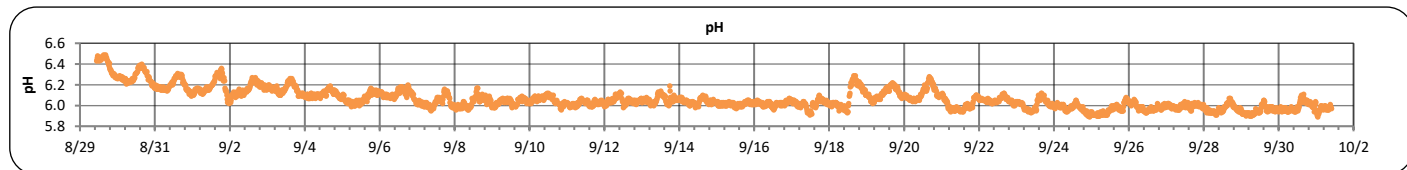
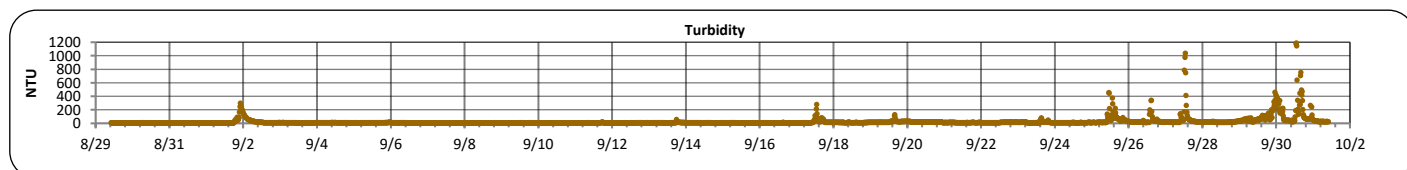
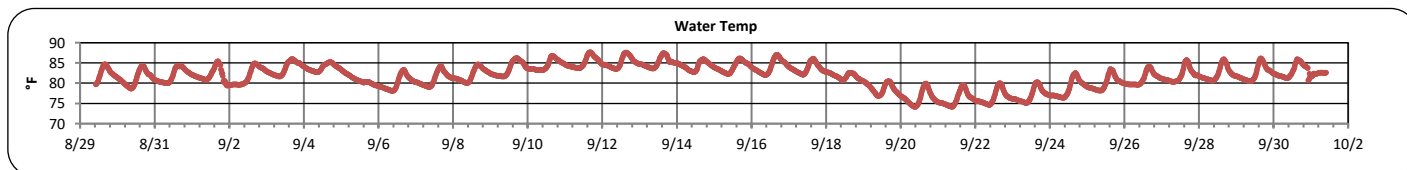
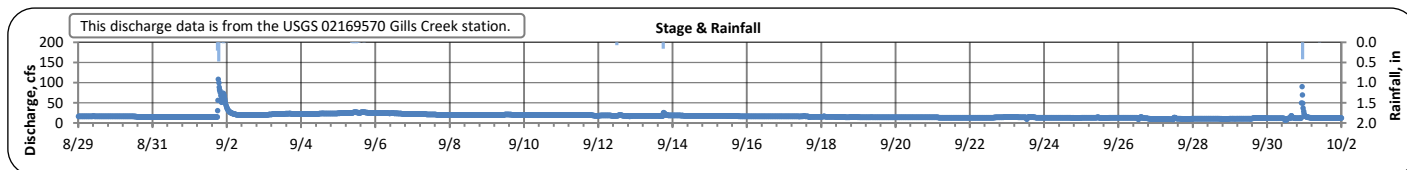
Sampled Data:

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:

Gills Creek B (August 29, 2019 -- October 2, 2019)

PARAMETER	DESCRIPTION	CONTINUOUS WATER QUALITY PARAMETERS:	SUMMARY STATISTICS				
			MINIMUM OBSERVED	MAXIMUM OBSERVED	MEDIAN OBSERVED	MEAN OBSERVED	STANDARD DEVIATION
STREAM NAME:	Gills Creek	DISCHARGE (CFS):	7.5	109.0	16.4	17.3	6.2
LOCATION:	Devine Street bridge	TEMPERATURE (°F):	74	88	82	82	3
ADDRESS:	4716 Devine Street Columbia, SC 29209	TURBIDITY (NTU):	4	1190	12	27	68
COORDINATES:	33.989656, -80.97433	pH:	5.9	6.5	6.0	6.1	0.1
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen	SPECIFIC CONDUCTIVITY (mS/cm):	0.038	0.075	0.062	0.062	0.004
NEIGHBORING LANDUSE:	Residential and commercial	DISSOLVED OXYGEN (mg/L):	1.1	6.8	4.0	4.0	1.1
APPROX. DRAINAGE AREA:	59 square miles						
SPATIAL LOCATION:	Middle site						
TOTAL NO. STORMS OVER 0.1 INCH:	4						
MAX. DAILY RAINFALL:	0.8 inches						
TOTAL RAINFALL (FOR PERIOD):	1.6 inches						



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Monitoring Periodic Report**

Gills Creek B (August 29, 2019 -- October 2, 2019)

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.

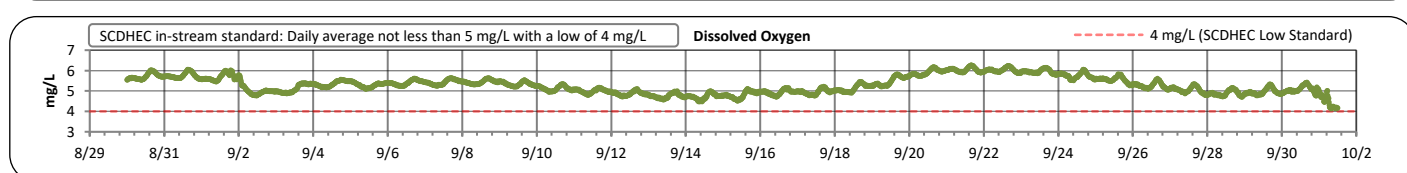
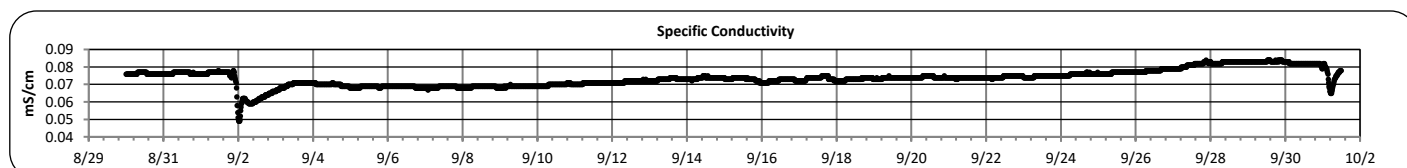
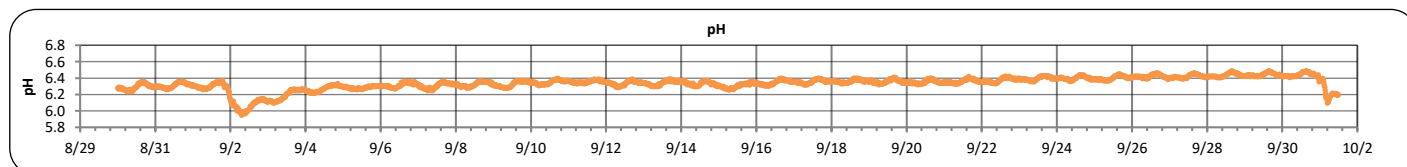
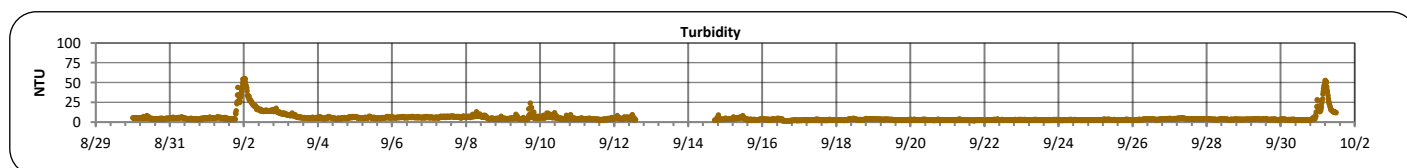
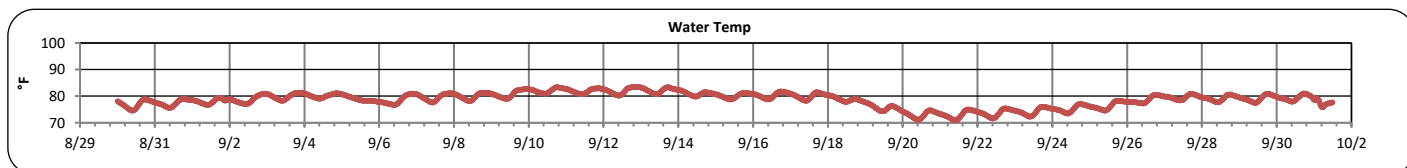
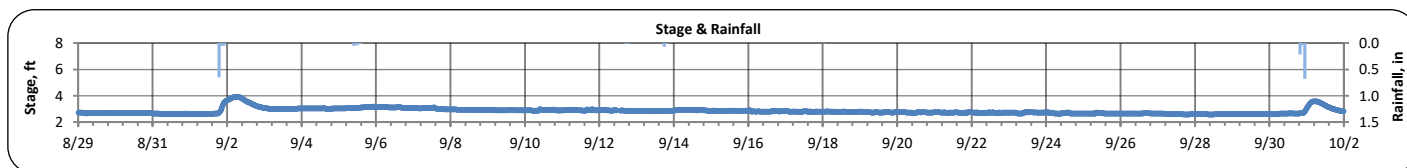
Sampled Data:

Analyte (units)	Sample 1		Sample 2		Sample 3		Sample 4	
	9/20/2019							
	Time	Results	Time	Results	Time	Results	Time	Results
<i>Escherichia coli</i> (MPN/100mL)	9:44	196						
Total Suspended Solids (mg/L)	9:44	10.8						
Total Phosphorus (mg/L)								
Total Nitrogen (mg/L)								

Notes: This sample was collected during dry weather conditions.

Gills Creek C (August 29, 2019 -- October 2, 2019)

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	3.9	2.8	2.8	0.2
LOCATION:	Bluff Road bridge	TEMPERATURE (°F):	71	83	79	79	3
ADDRESS:	3009 Bluff Rd. Columbia, SC 29209	TURBIDITY (NTU):	2	55	4	5	6
COORDINATES:	33.948043, -80.9889	pH:	6.0	6.5	6.4	6.3	0.1
TMDL/IMPAIRMENT:	Fecal & Dissolved Oxygen	SPECIFIC CONDUCTIVITY (mS/cm):	0.049	0.084	0.074	0.074	0.005
NEIGHBORING LANDUSE:	Residential and commercial	DISSOLVED OXYGEN (mg/L):	4.1	6.3	5.3	5.3	0.4
APPROX. DRAINAGE AREA:	64 square miles						
SPATIAL LOCATION:	Most downstream site						
TOTAL NO. STORMS OVER 0.1 INCH:	3						
MAX. DAILY RAINFALL:	0.94 inches						
TOTAL RAINFALL (FOR PERIOD):	2.0 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 (August 29, 2019 -- October 2, 2019)

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	
	9/20/2019							
	Time	Results	Time	Results	Time	Results	Time	Results
<i>Escherichia coli</i> (MPN/100mL)	9:14	20						
Total Suspended Solids (mg/L)	9:14	3.6						
Total Phosphorus (mg/L)								
Total Nitrogen (mg/L)								

Notes: This sample was collected during dry weather conditions.